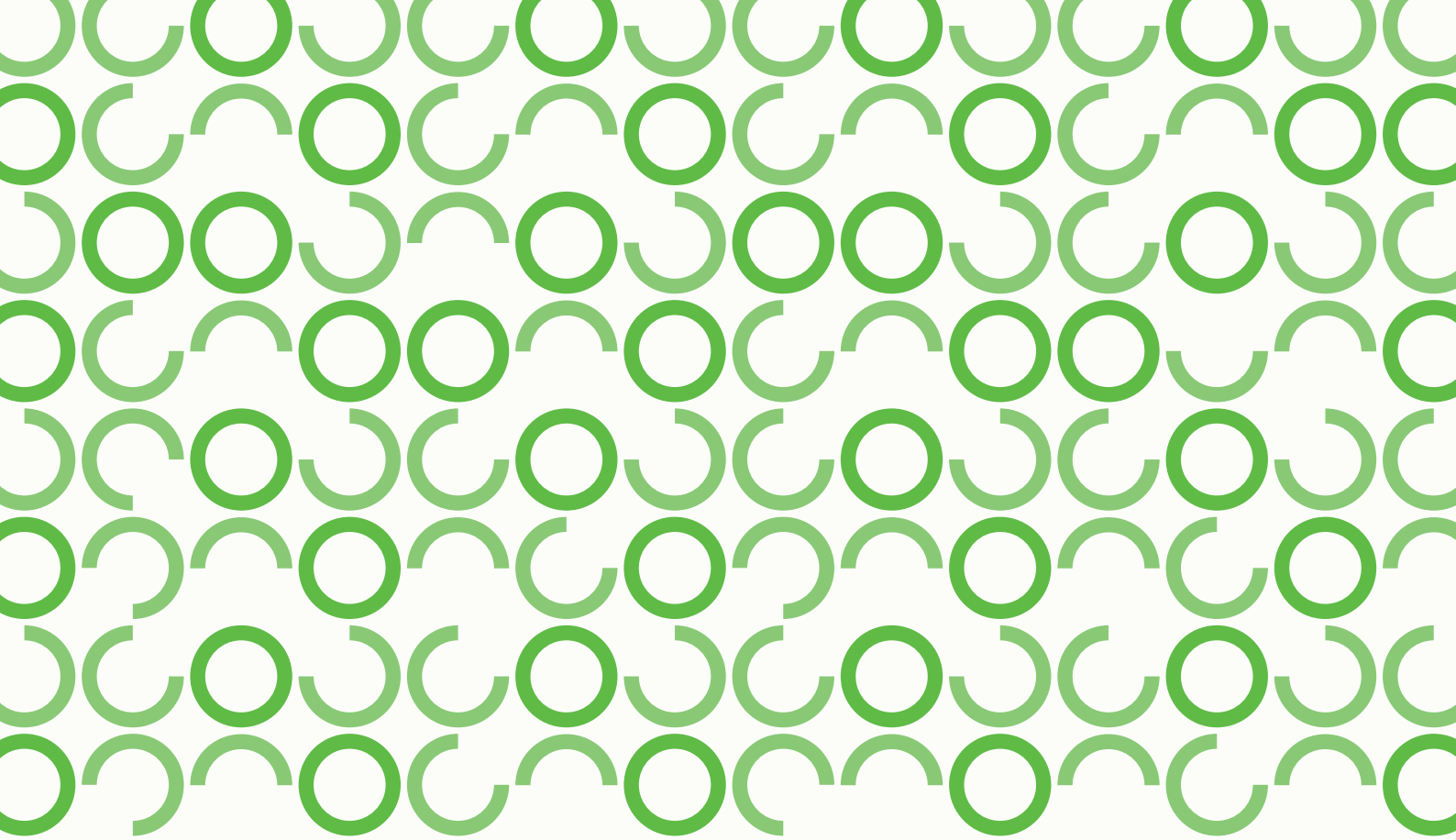
TEPLOBAK®

TECHNICAL CATALOG



Ternopil, 2025

The name of our company, Teplobak is derived from two words – «teplo» (heat) and «bak» (tank). It fully encapsulates the essence of our work. Rational fuel use, reduction of CO_2 emissions, and the utilization of renewable energy through its accumulation are our core priorities. We believe our goals align with yours.

We have expanded the functional capabilities of our tanks by implementing new structural materials, coatings, and insulation types. Our product range includes tanks with capacities from 50 to 10,000 liters. We are always ready to collaborate with you in designing and manufacturing a custom solution tailored to your needs.

TO ENSURE QUALITY:

- our company has implemented a product management system (pms) that enables process control at all stages of production
- all manufactured tanks undergo testing on hydraulic test benches
- insulation quality is examined in accordance with directive **EnP2009/125/EC** using our in-house laboratory
- the company operates a quality management system certified to ISO 9001
- our products are certified according to EN 12897

We understand that our tanks are an essential part of an engineering system, which is why we pay close attention to their appearance.

TEPLOBAK STANDS FOR:

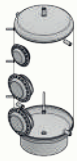
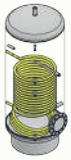
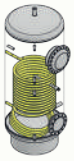
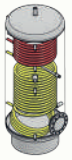
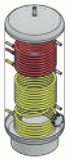
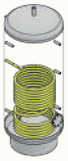
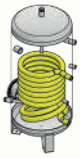
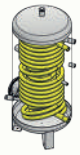
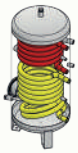
over 30 years of expertise in thermal energy accumulation

15 years of manufacturing excellence

10 years of successful European partnerships

STORE, MANAGE, AND SAVE WITH TEPLOBAK!

DHW

VTP 1	VTP 2	VTP 3	VTP 4	VTP 5	VTP 6	VTN 1	VTN 2	VTN 2 PLUS	VTN 3	VTE 1	VTE 1-PLUS	VTE 2
												
Carbon steel with an internal polyceramic coating						Stainless steel				Carbon steel with an internal enamel coating		
Volumes												
200-10000	200-10000	200-10000	400-2000[2]	400-2000[2]	400-2000[2]	120-1500[2]	120-1500[2]	120-1500[2]	80-3000[2]	160-500	200-500	200-500
Working pressure of the tank												
6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	6, (8-10)[1]	10	10	10
Number of heat exchangers												
			1	1	2	2	1	1		1	1	2
Inner tank												

Thermal insulation

PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC			
PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC			
PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS			
PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS			
										PUH/PVC	PUH/PVC	PUH/PVC
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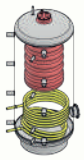
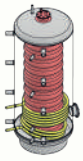
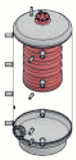
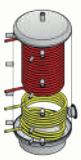
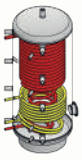
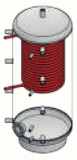
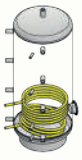
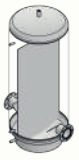
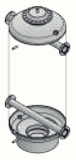
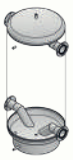
Sources and destinations

Heating												
Cooling												
DHW (Domestic Hot Water)	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
CWS (Chilled Water Supply)												
Gas boiler	⊙[5]	⊙[5]	⊙[5]	⊙	⊙	⊙	⊙	⊙	⊙	⊙[5]	⊙	⊙	⊙
Electric boiler	⊙[5]	⊙[5]	⊙[5]	⊙	⊙	⊙	⊙	⊙	⊙	⊙[5]	⊙	⊙	⊙
Solid fuel boiler	⊙[5]	⊙[5]	⊙[5]	⊙	⊙	⊙	⊙	⊙	⊙	⊙[5]	⊙	⊙	⊙
Solar (solar collectors – solar thermal system)	⊙[5]	⊙[5]	⊙[5]	⊙	⊙	⊙	⊙	⊙	⊙	⊙[5]	⊙	⊙	⊙
Heat pumps	⊙[5]	⊙[5]	⊙[5]	⊙[4]	⊙[4]	⊙[4]			⊙	⊙[5]		⊙	
Chiller													
Installation of the electrical heating element	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

1 Manufactured to order
2 Custom tank manufacturing is possible in other volumes upon request
3 Not available in all versions (see details in the …)
4 Special execution
5 Connection is possible via an external heat exchanger module/heat exchanger

Heating + DHW						Heating			Heating+Cooling			Heating+Cooling/ Chilled water storage	
VTA/N 1	VTA/N 1 SOLAR PLUS	VTA/N 2	VTA 1	VTA 1 SOLAR PLUS	VTA 2	VTA 3	VTA 4	VTA 4 ECONOM	VTA 4 (for heat pumps)	CWT CS	CWT ZN	CWT PC	CWT SS
													
Carbon steel and stainless steel (inner tank)			Carbon steel			Carbon steel			Carbon steel		Galvanized carbon steel	Carbon steel with an internal polyceramic coating	Stainless steel
Volumes													
400-2000[2]	750-2000[2]	200-2000/ 400-2000[2]	400-2000[2]	400-2000[2]	400-2000[2]	400-2000[2]	200-10000	100-10000	50-300	200-10000	200-3000	200-10000	200-3000[2]
Working pressure of the tank													
3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	3,(6-10)[1]	6	3-10[1]	3-10[1]	3-10[1]	3-10[1]
Number of heat exchangers													
1	1		2	2	1	1							
Inner tank													
1	1	1											
Thermal insulation													
PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC	PL/PVC					
PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC	PU/PVC					
PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS	PL/ABS					
PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS	PS/ABS					
									PUH/PVC				
									PUH/ABS	RS	RS	RS	RS
										RS/ABS	RS/ABS	RS/ABS	RS/ABS
										RS+PL/ABS	RS+PL/ABS	RS+PL/ABS	RS+PL/ABS
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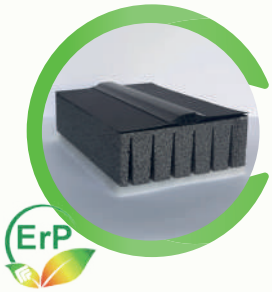
Sources and destinations													
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
									⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙	⊙	⊙	⊙								
												⊙	⊙
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
⊙	⊙		⊙	⊙		⊙							
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙
									⊙	⊙	⊙	⊙	⊙
⊙		⊙[3]	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙

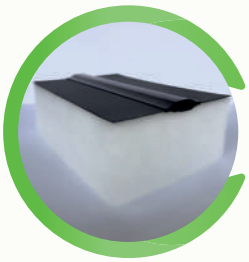
PREMIUM-CLASS EFFECTIVE HEAT RETENTION



PS/ABS

MATERIAL:
Graphitized polystyrene foam 90 mm, λ=0.033 W/m•K

CASING:
ABS plastic, secured with three-position plastic locks

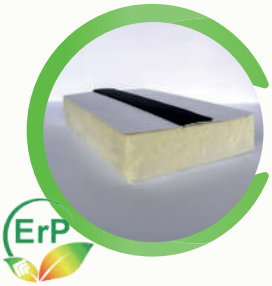


PL/ABS

MATERIAL:
Polyester fiber 100 mm, λ=0.037 W/m•K

CASING:
ABS plastic, secured with three-position plastic locks

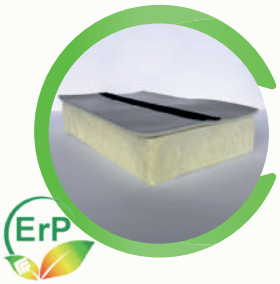
RIGID FOAM – ADVANCED INSULATION TECHNOLOGY



PUH/ABS

MATERIAL:
Closed-cell rigid polyurethane foam 35-50 mm, λ=0.022 W/m•K

CASING:
ABS plastic, secured with Velcro fastener



PUH/PVC

MATERIAL:
Closed-cell rigid polyurethane foam 35-50 mm, λ=0.022 W/m•K

CASING:
PVC or "skai" with a zipper-type fastener

SMART HEAT LOSS PREVENTION AT AN AFFORDABLE PRICE

PL/PVC

MATERIAL:
Polyester fiber 100 mm, λ=0.037 W/m•K

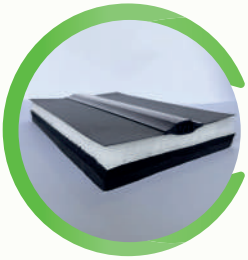
CASING:
PVC, secured with plastic ties

PU/PVC

MATERIAL:
Soft polyurethane foam 90 mm, λ=0.040 W/m•K

CASING:
PVC, secured with plastic ties

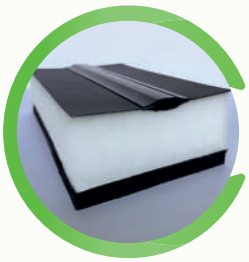
YOUR COLD IN SAFE HANDS



RS/ABS

MATERIAL:
Foamed synthetic rubber 12-24 mm, λ=0.032 W/m•K

CASING:
ABS plastic, secured with three-position plastic locks



RS+PL/ABS

MATERIAL:
Foamed synthetic rubber 12-24 mm, λ=0.032 W/m•K
Additional layer of polyester fiber 50 mm (λ=0.037 W/m•K) for effective thermal retention in reversible systems (cold-heat)

CASING:
ABS plastic, secured with three-position plastic locks

The insulation complies with all requirements of **ErP Directive 2009/125/EC**

ACCUMULATION OF PREHEATED WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The DHW thermal storage tank is designed for the accumulation and storage of water preheated in an external heat exchanger for domestic hot water needs. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank and for installing a flanged heat exchanger, enabling connection to an additional heating source. To protect the internal coating, one or more magnesium anodes are provided.

Tank	
P	T
6 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation in a zippered PVC casing

PU/PVC – 90 mm elastic polyurethane foam insulation in a PVC casing secured with straps

PL/ABS – 100 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

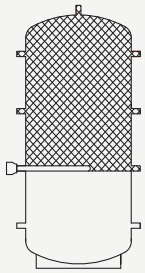
Model	Tank volume, l	Energy efficiency class of insulation*
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES



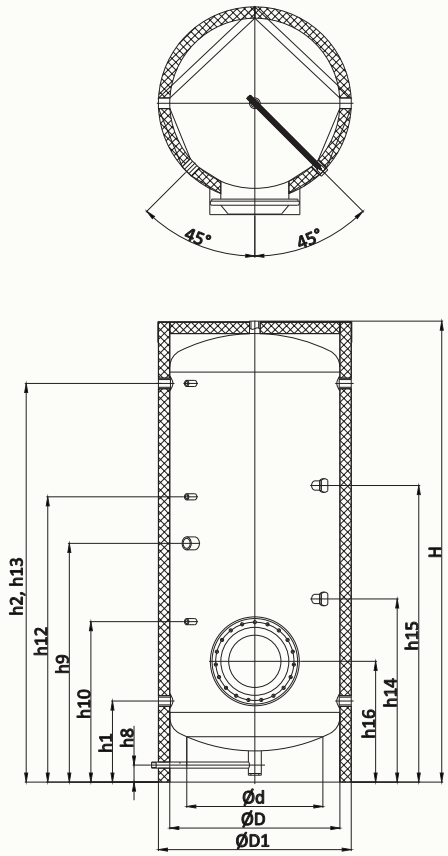
Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1–220		3–400					
		Heating time for ΔT=20°, minutes							
400	208	254	169	113	85	68	56	-	-
500	247	301	201	134	100	80	67	-	-
750	398	485	323	216	162	129	108	81	-
1000	519	633	422	281	211	169	141	105	84
1500	746	909	606	404	303	243	202	152	121
2000	1110	1353	902	601	451	361	301	226	180
3000	1567	1910	1274	849	637	509	425	318	255
4000	2080	2536	1691	1127	845	676	564	423	338
5000	2572	3136	2090	1394	1045	836	697	523	418

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

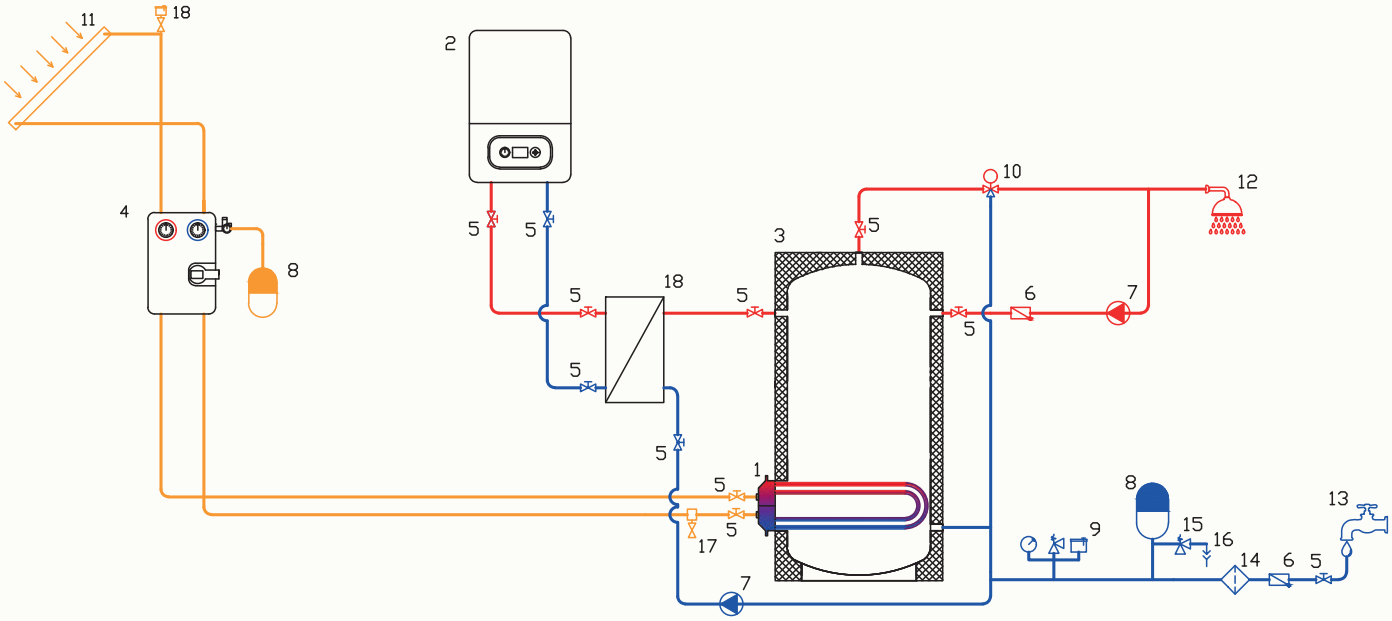
H	Hot water supply
h1	Cold water supply
h2	Recirculation. Alternative hot water supply or connection to another water heater
h8	Drainage
h9	Connection for electric heat element
h10,h12, h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16	Flanges for heat exchangers

Model	Dimensions, mm				Connection sizes, mm									
	ØD1	ØD	Ød	H	h1	h2	h8	h9	h10	h12	h13	h14	h15	h16
400	800	600	450	1730	331	1481	75	921	681	1081	1481	781	-	456
					1 1/4"		3/4"	1 1/2"		1/2"		1"		Ø210
500	800	600	450	1980	331	1731	75	1026	681	1231	1731	781	-	456
					1 1/4"		3/4"	1 1/2"		1/2"		1"		Ø210
750	950	750	600	2035	357	1757	75	1052	707	1257	1757	807	-	532
					1 1/4"		3/4"	1 1/2"		1/2'		1"		Ø300
1000	1050	850	700	2085	390	1790	75	1085	740	1290	1790	840	-	565
					1 1/2"		3/4"	1 1/2"		1/2"		1"		Ø300
1500	1200	1000	850	2170	430	1830	75	1125	780	1330	1830	880	1380	605
					1 1/2"		3/4"	1 1/2"		1/2"		1"		Ø300
2000	1400	1200	1000	2260	471	1871	75	1166	821	1371	1871	921	1421	671
					2"		1"	1 1/2"		1/2"		1"		Ø350
3000	1600	1400	1150	2365	526	1926	75	1221	876	1426	1926	976	1476	726
					2"		1"	1 1/2"		1/2"		1"		Ø350
4000	1800	1600	1300	2425	557	1957	75	1252	907	1457	1957	1007	1507	757
					2"		1"	1 1/2"		1/2"		1"		Ø350
5000	1800	1600	1300	2925	557	2457	75	1507	907	1770	2457	1007	1957	757
					2"		1"	1 1/2"		1/2"		1"		Ø350
6300	2100	1900												
8000	2100	1900												
10000	2100	1900												

Configuration and dimensions of connections available upon customer request.

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	U-shaped flanged heat exchanger	7	Circulation pump	13	Water supply system
2	Gas/electric boiler	8	Expansion tank	14	Mesh filter
3	VTP 1 storage tank	9	Safety group	15	Safety valve
4	Circulation pump	10	Three-way mixing valve	16	Drainage
5	Ball valve	11	Solar collector (solar circuit)	17	Solar circuit air vent
6	Check valve	12	Domestic hot water system	18	Automatic solar circuit air vent
				19	External heat exchanger

ACCUMULATION OF PREHEATED WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The DHW thermal storage tank is designed for the accumulation and storage of water preheated in an external heat exchanger for domestic hot water needs. The tank's design includes two flanged inspection hatches, each with a cover, intended for periodic service maintenance of the tank and for installing flanged heat exchangers, enabling connection to additional heating sources. To protect the internal coating, one or more magnesium anodes are provided.

Tank	
P	T
6 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam i nsulation with a PVC cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive.**

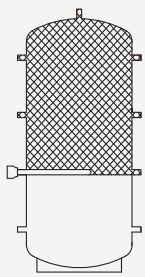
Model	Tank volume, l	Energy efficiency class of insulation*
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES



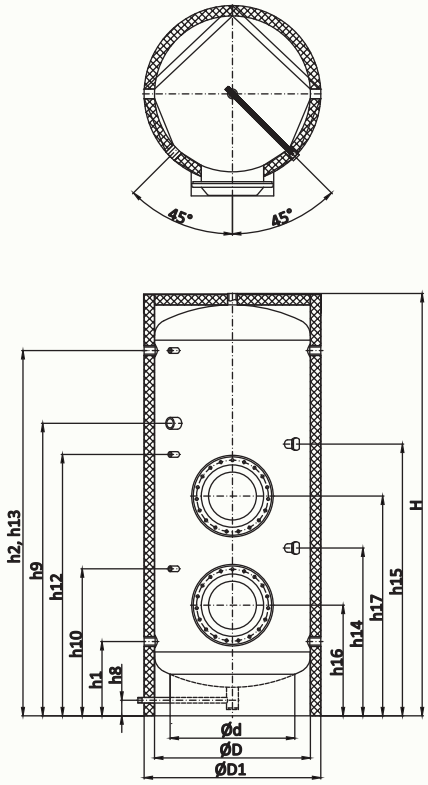
Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400	121	148	98	66	49	39	33	-	-
500	149	182	121	81	61	48	40		
750	242	295	197	131	98	79	66	49	-
1000	318	388	258	172	129	103	86	65	52
1500	467	569	380	253	190	152	127	95	76
2000	708	863	575	384	288	230	192	144	115
3000	1020	1244	829	553	415	332	276	207	166
4000	1366	1665	1110	740	555	444	370	278	222
5000	1969	2401	1600	1067	800	640	533	400	320

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

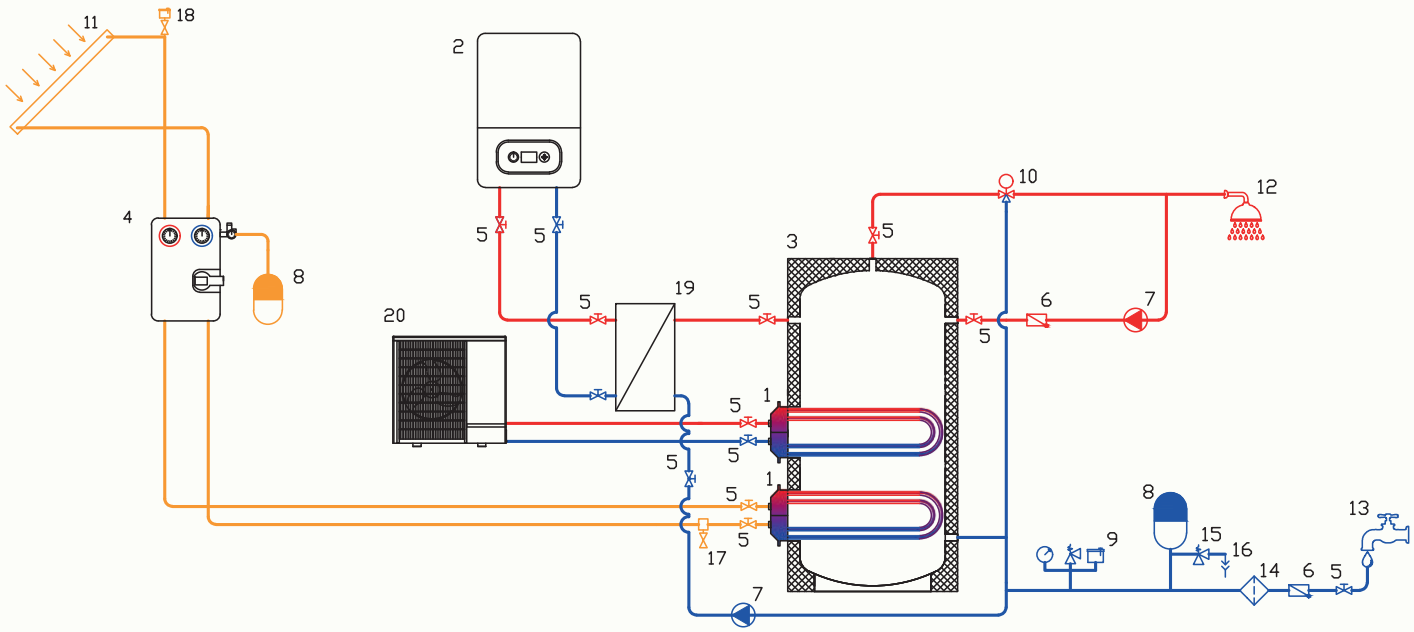
H	Hot water supply
h1	Cold water supply
h2	Recirculation. Alternative hot water supply or connection to another water heater
h8	Drainage
h9	Connection for electric heat element
h10,h12, h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16, h17	Flanges for heat exchangers

Model	Dimensions, mm				Connection sizes, mm										
	ØD1	ØD	Ød	H	h1	h2	h8	h9	h10	h12	h13	h14	h15	h16	h17
400	800	600	450	1730	331	1481	75	1231	681	1081	1481	781	-	456	906
					1 1/4"		3/4"	1 1/2"		1/2"		1"		Ø210	
500	800	600	450	1980	331	1731	75	1381	681	1231	1731	781	-	456	1031
					1 1/4"		3/4"	1 1/2"		1/2"		1"		Ø210	
750	950	750	600	2035	357	1757	75	1407	707	1257	1757	807	-	532	1057
					1 1/4"		3/4"	1 1/2"		1/2'		1"		Ø300	
1000	1050	850	700	2085	390	1790	75	1440	740	1290	1790	840	-	565	1090
					1 1/2"		3/4"	1 1/2"		1/2"		1"		Ø300	
1500	1200	1000	850	2170	430	1830	75	1480	780	1330	1830	880	1380	605	1130
					1 1/2"		3/4"	1 1/2"		1/2"		1"		Ø300	
2000	1400	1200	1000	2260	471	1871	75	1521	821	1371	1871	921	1421	671	1171
					2"		1"	1 1/2"		1/2"		1"		Ø350	
3000	1600	1400	1150	2365	526	1926	75	1576	876	1426	1926	976	1476	726	1226
					2"		1"	1 1/2"		1/2"		1"		Ø350	
4000	1800	1600	1300	2425	557	1957	75	1607	907	1457	1957	1007	1507	757	1257
					2"		1"	1 1/2"		1/2"		1"		Ø350	
5000	1800	1600	1300	2925	557	2457	75	1807	907	1770	2457	1007	1957	757	1507
					2"		1"	1 1/2"		1/2"		1"		Ø350	
6300	2100	1900													
8000	2100	1900													
10000	2100	1900													

Configuration and dimensions of connections available upon customer request.

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	U-shaped flanged heat exchanger	8	Expansion tank	15	Safety valve
2	Gas/electric boiler	9	Safety group	16	Drainage
3	VTP 2 storage tank	10	Three-way mixing valve	17	Solar circuit air vent
4	Circulation pump	11	Solar collector (solar circuit)	18	Automatic solar circuit air vent
5	Ball valve	12	Domestic hot water system	19	External heat exchanger
6	Check valve	13	Water supply system	20	Heat pump
7	Circulation pump	14	Mesh filter		

ACCUMULATION OF PREHEATED WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The DHW thermal storage tank is designed for the accumulation and storage of water preheated in an external heat exchanger for domestic hot water needs. The tank's design includes three flanged inspection hatches, each with a cover, intended for periodic service maintenance of the tank and for installing flanged heat exchangers, enabling connection to additional heating sources. To protect the internal coating, one or more magnesium anodes are provided.

Tank	
P	T
6 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam insulation with a PVC cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive.**

Model	Tank volume, l	Energy efficiency class of insulation*
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

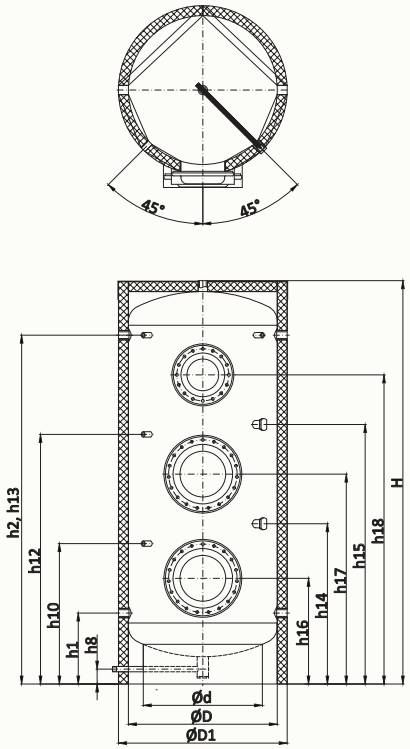
*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

-

DIMENSIONS AND CONNECTION



DESIGNATION

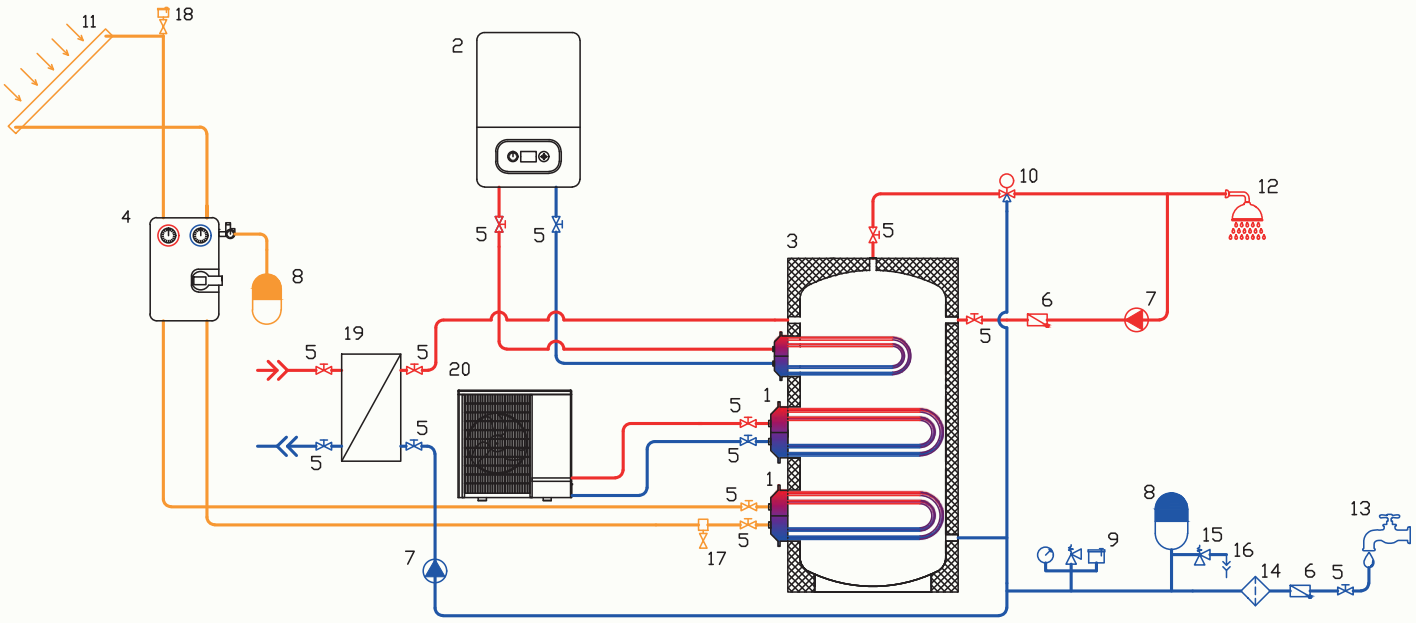
H	Hot water supply
h1	Cold water supply
h2	Recirculation. Alternative hot water supply or connection to another water heater
h8	Drainage
h9	Connection for electric heat element
h10,h12, h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16-h18	Flanges for heat exchangers

Model	Dimensions, mm				Connection sizes, mm											
	ØD1	ØD	Ød	H	h1	h2	h8	h10	h12	h13	h14	h15	h16	h17	h18
400	800	600	450	1730	331	1481	75	681	1081	1481	781	-	456	906	1306
					1 1/4"		3/4"		1/2"		1"		Ø210		
500	800	600	450	1980	331	1731	75	681	1231	1731	781	-	456	1031	1531
					1 1/4"		3/4"		1/2"		1"		Ø210		
750	950	750	600	2035	357	1757	75	707	1257	1757	807	-	532	1057	1557
					1 1/4"		3/4"		1/2'		1"		Ø300		Ø210
1000	1050	850	700	2085	390	1790	75	740	1290	1790	840	-	565	1090	1590
					1 1/2"		3/4"		1/2"		1"		Ø300		
1500	1200	1000	850	2170	430	1830	75	780	1330	1830	880	1380	605	1130	1630
					1 1/2"		3/4"		1/2"		1"		Ø300		
2000	1400	1200	1000	2260	471	1871	75	821	1371	1871	921	1421	671	1171	1671
					2"		1"		1/2"		1"		Ø350		Ø300
3000	1600	1400	1150	2365	526	1926	75	876	1426	1926	976	1476	726	1226	1726
					2"		1"		1/2"		1"		Ø350		Ø300
4000	1800	1600	1300	2425	557	1957	75	907	1457	1957	1007	1507	757	1257	1757
					2"		1"		1/2"		1"		Ø350		
5000	1800	1600	1300	2925	557	2457	75	907	1770	2457	1007	1957	757	1507	2257
					2"		1"		1/2"		1"		Ø350		
6300	2100	1900													
8000	2100	1900													
10000	2100	1900													

Configuration and dimensions of connections available upon customer request.

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Flanged U-shaped heat exchanger	8	Expansion tank	15	Safety valve
2	Gas/electric boiler	9	Safety group	16	Drainage
3	VTP 3 storage tank	10	Three-way mixing valve	17	Automatic solar circuit air vent
4	Circulation pump	11	Solar collector (solar circuit)	18	Solar circuit air vent
5	Ball valve	12	Domestic hot water system	19	External plate heat exchanger
6	Check valve	13	Water supply system	20	Heat pump
7	Circulation pump	14	Mesh filter		

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed to heat water using a lower coiled heat exchanger from various sources, as well as to accumulate and store it for DHW.
The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the heat exchanger, a fitting is provided for installing an electric heat element.
To protect the internal coating, one or more magnesium anodes are included.

Tank	
P	T
6 bar	95 °C
Coil	
P	T
10 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

HEAT EXCHANGER

The heat exchanger is made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam insulation with a PVC cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive.**

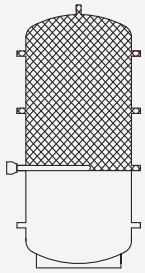
Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		Scoil1, m²	Vcoil1, l	
400	413	1,95	13,0	B
500	483	1,95	13,0	B
		2,60	18,0	
750	773	2,05	15,0	C
		2,95	21,0	
1000	1008	2,75	25,5	C
		3,50	32,5	
1500	1449	4,40	42,0	C
2000	2158	5,55	53,0	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES

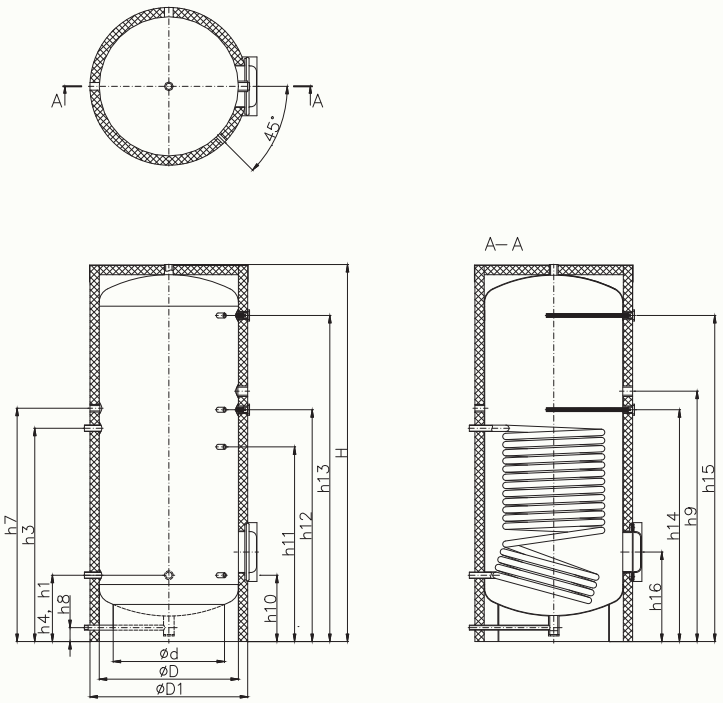


Electric heat elements

Model	S coil 1, m²	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
			1–220		3–400					
			Час нагріву на ΔT=20°, хв							
400	1,95	132	161	107	72	54	43	36	-	-
500	1,95	203	247	165	110	82	66	55	-	-
	2,60	141	172	115	76	57	46	38	-	-
750	2,05	364	444	296	197	148	118	99	74	-
	2,95	267	326	217	145	109	87	72	54	-
1000	2,75	488	595	397	264	198	159	132	99	79
	3,50	403	491	328	218	164	131	109	82	66
1500	4,40	585	713	475	317	238	190	158	119	95
2000	5,55	878	1070	714	476	357	285	238	178	143

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

DIMENSIONS AND CONNECTION



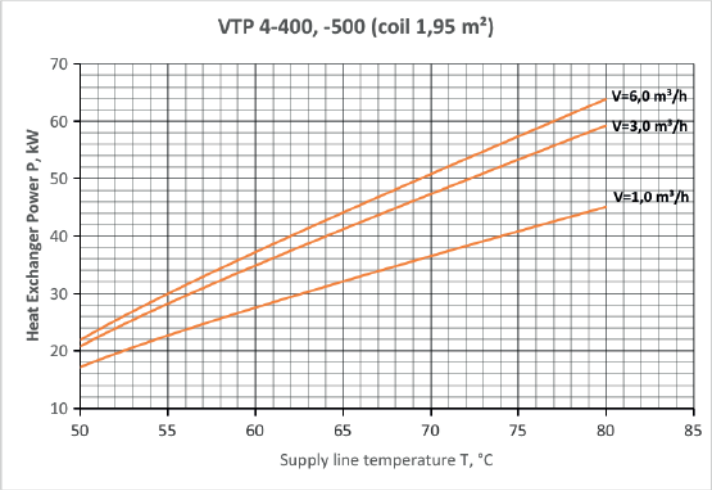
DESIGNATION

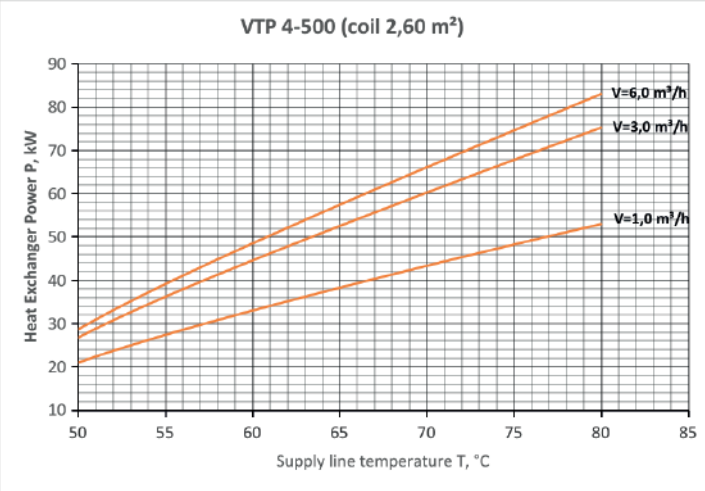
H	Hot water supply
h1	Cold water supply
h3,h4	Supply and return lines of the lower heat exchanger (Coil 1)
h7	Recirculation
h8	Drainage
h9	Connection for electric heat element
h10-h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16	Flange

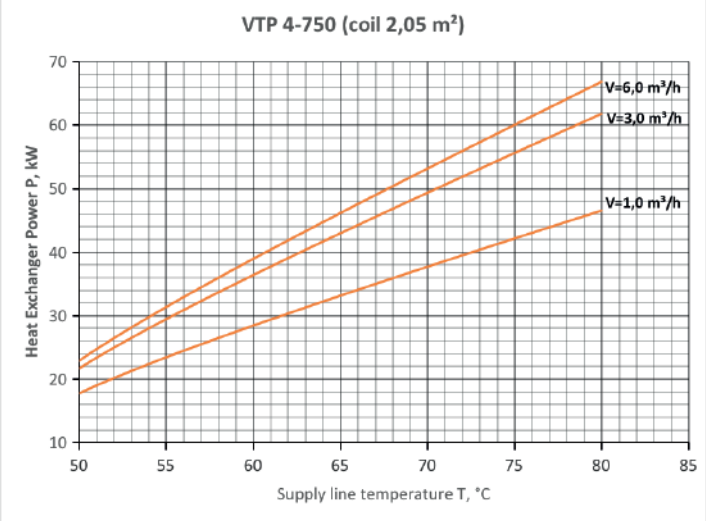
Model	Scoil 1, m²	Dimensions, mm				Connection sizes, mm												
		ØD1	ØD	Ød	H	h1	h3	h4	h7	h8	h9	h10	h11	h12	h13	h14	h15	h16
400	1,95	800	600	450	1730	331	991	331	1231	75	1191	331	891	1091	1481	1091	-	456
					1 1/4"		1"		3/4"		1 1/2"		1/2"			1"		Ø210
500	1,95	800	600	450	1980	331	991	331	1231	75	1191	331	891	1091	1731	1091	-	456
	2,60						1211		1331		1411		1111	1311		1311		
					1 1/4"		1"		3/4"		1 1/2"		1/2"			1"		Ø210
750	2,05	950	750	600	2035	357	929	357	1257	75	1129	357	829	1029	1757	1029	-	482
	2,95						1149				1349		1049	1249		1249		
					1 1/4"		1"		3/4"		1 1/2"		1/2"			1"		Ø210
1000	2,75	1050	850	700	2085	390	940	390	1290	75	1140	390	840	1040	1790	1040	-	515
	3,5						1090				1290		990	1190		1190		
					1 1/2"		1 1/4"			3/4"	1 1/2"		1/2"			1"		Ø210
1500	4,4	1200	1000	850	2170	430	1130	430	1330	75	1330	430	1030	1230	1830	1230	1830	555
					1 1/2"		1 1/4"			3/4"	1 1/2"		1/2"			1"		Ø210
2000	5,55	1400	1200	1000	2260	471	1171	471	1372	75	1371	471	1071	1271	1871	1271	1871	596
					2"		1 1/4"			3/4"	1 1/2"		1/2"			1"		Ø210

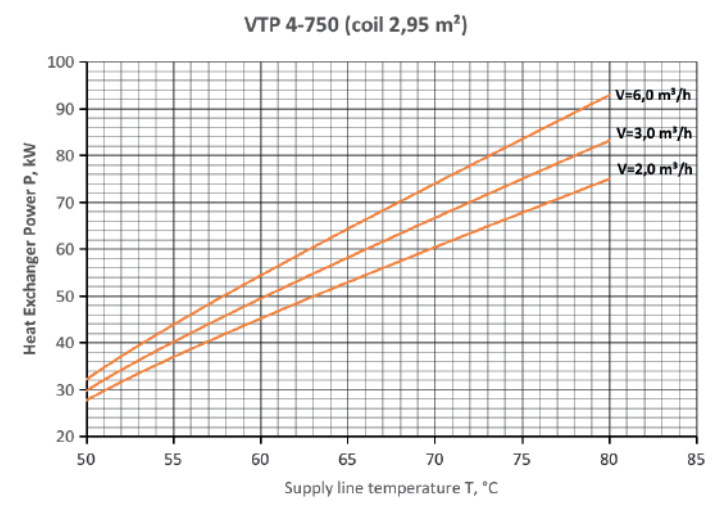
LOWER HEAT EXCHANGER POWER

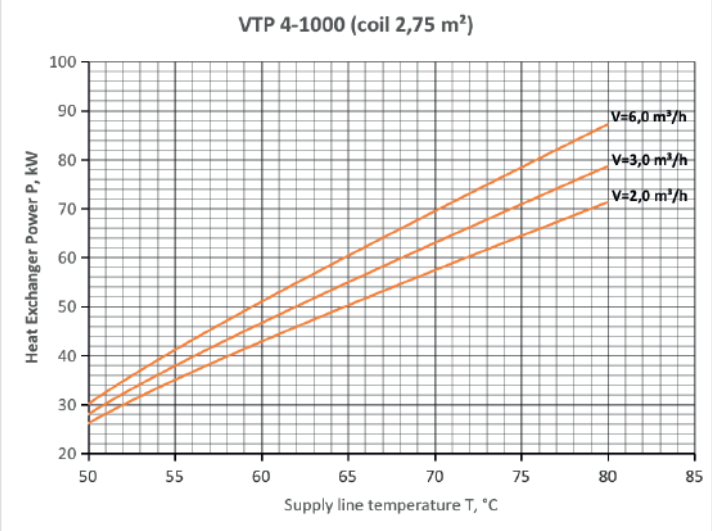
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

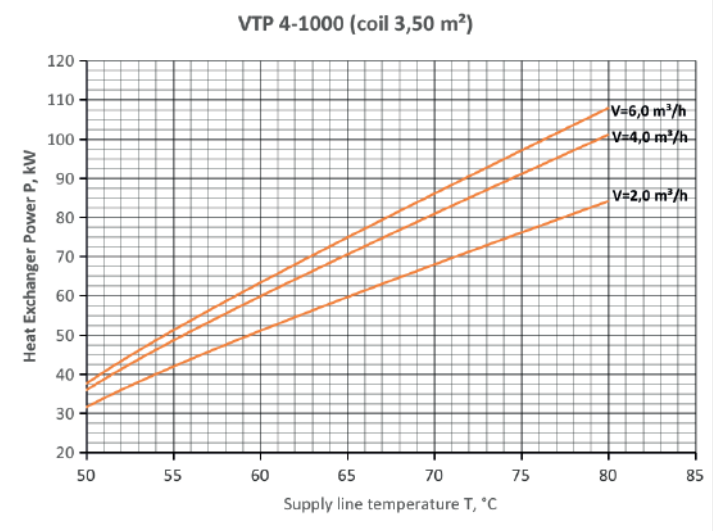


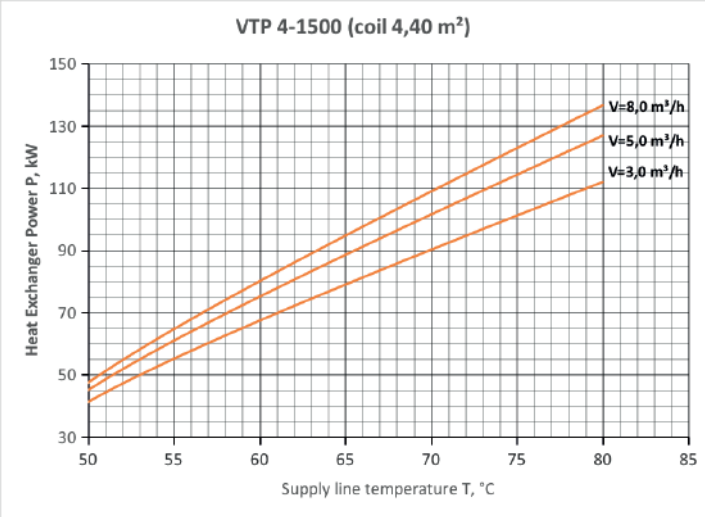


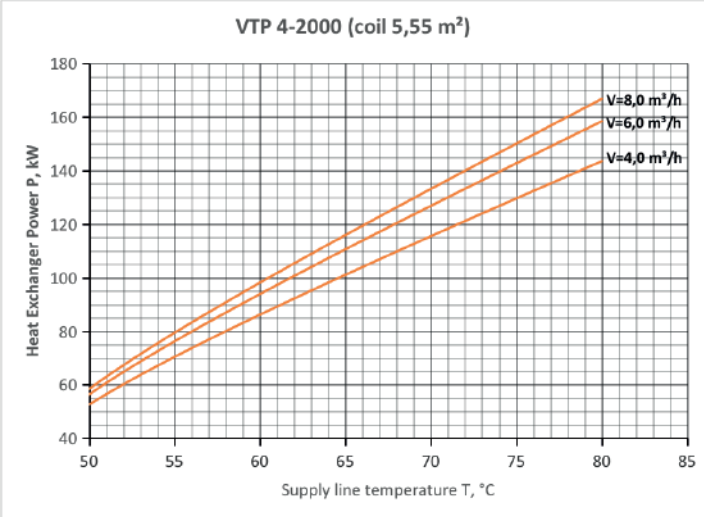




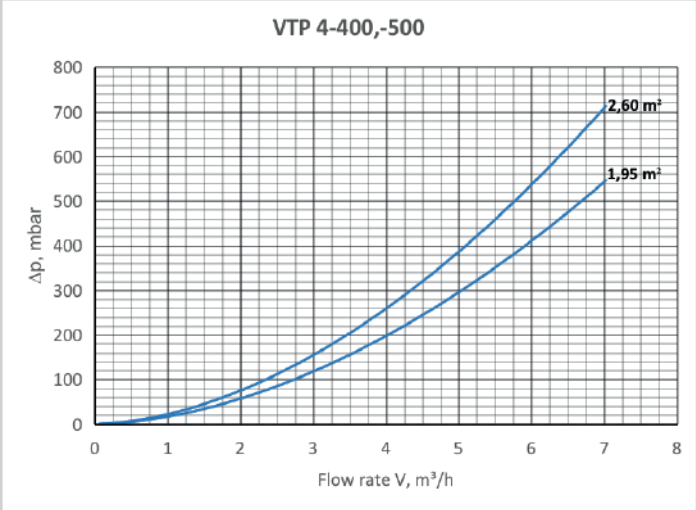


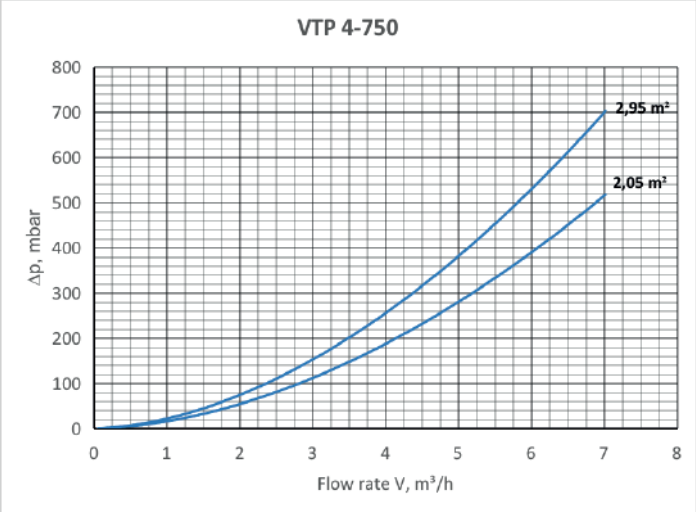


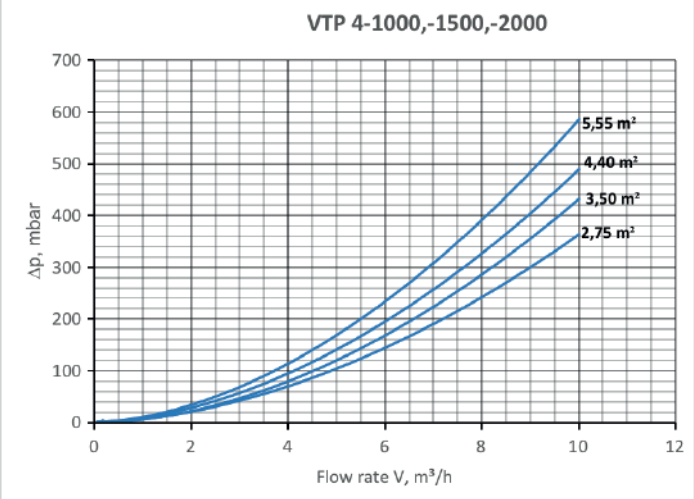




PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER





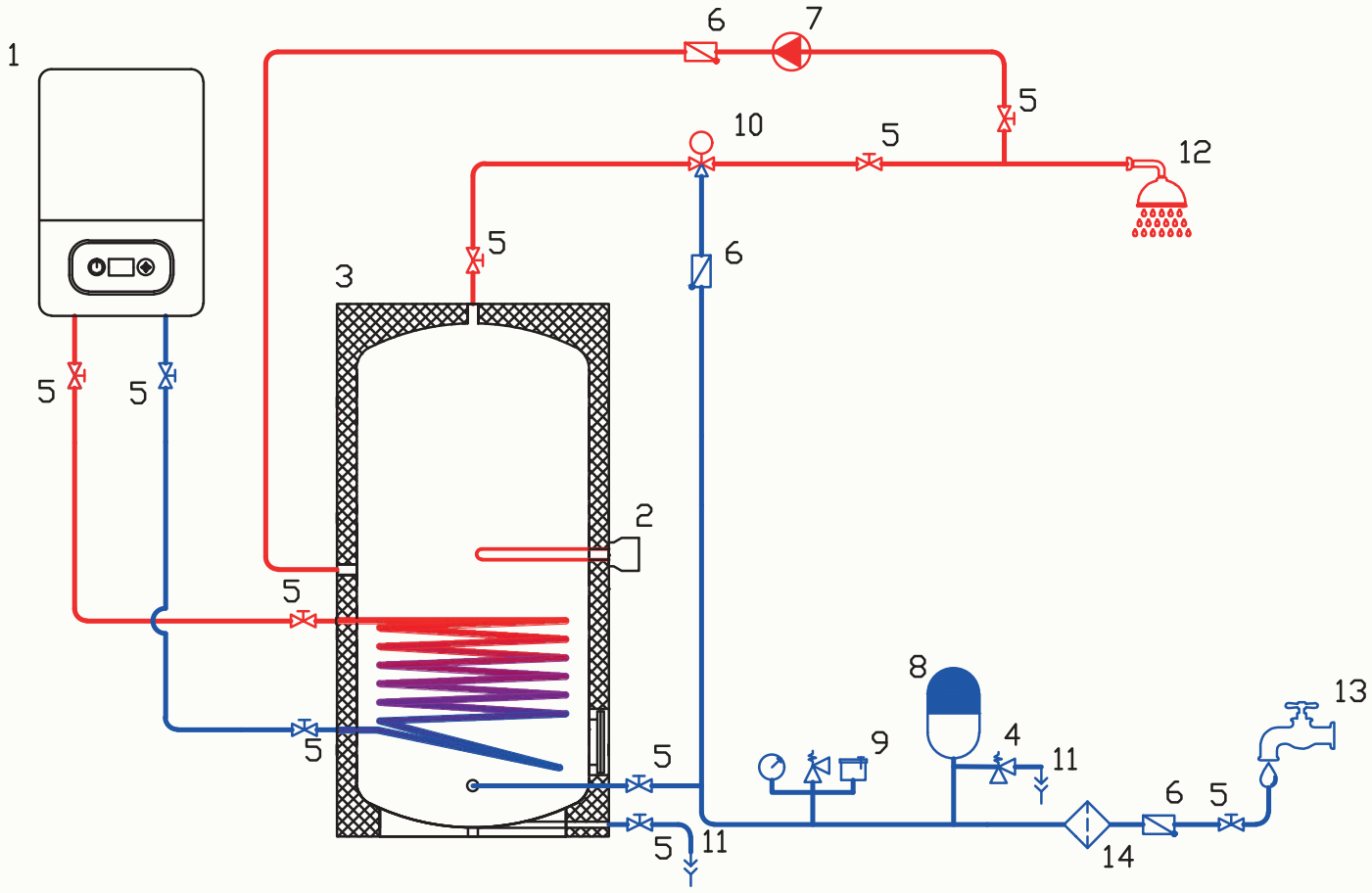


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower heat exchanger	Usable volume of the tank	Circulation of the heat transfer fluid in the heat exchanger	Heat exchanger power at the supply heat transfer fluid temperature **T** into the heat exchanger, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the heat exchanger, with the heating source activated				Maximum DHW output at 45°C with the tank heated to **T**, with the heating source turned off			
				kW				l/h				l			
	m²	l	m³/h	T, °C				T, °C				T, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,95	367	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	472	525	577	630
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	1,95	437	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	562	625	687	750
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	2,6	432	1,0	27,3	38,2	43,2	52,9	672	941	1064	1303	555	617	678	740
			3,0	36,1	52,4	60,1	75,2	889	1291	1480	1852				
750	2,05	701	1,0	23,4	33,1	37,6	46,5	576	815	926	1145	901	1001	1101	1201
			3,0	29,4	42,9	49,3	61,7	724	1057	1214	1520				
750	2,95	693	2,0	36,9	52,8	60,3	74,9	909	1300	1485	1845	891	990	1089	1188
			3,0	40,1	58,1	66,6	83,1	988	1431	1640	2048				
1000	2,75	900	2,0	39,4	57,5	66,1	82,7	970	1416	1628	2037	1157	1286	1414	1543
			3,0	37,8	54,9	63,0	78,6	931	1352	1552	1936				
1000	3,5	892	2,0	41,8	59,6	67,9	84,1	1030	1468	1672	2071	1147	1274	1402	1529
			4,0	48,5	70,5	80,8	101,0	1195	1736	1990	2488				
1500	4,4	1266	3,0	55,1	78,9	90,2	111,9	1357	1943	2222	2756	1628	1809	1990	2171
			5,0	60,9	88,5	101,5	126,8	1500	2180	2500	3123				
2000	5,55	1867	4,0	70,4	101,1	115,5	143,5	1734	2490	2845	3534	2401	2668	2934	3201
			6,0	76,2	110,6	126,8	158,4	1877	2724	3123	3901				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Gas/electric boiler	6	Check valve	11	Drainage
2	Electric heat element	7	Circulation pump	12	Domestic hot water system
3	VTP 4 water heater	8	Expansion tank	13	Water supply system
4	Safety valve	9	Safety group	14	Mesh filter
5	Ball valve	10	Three-way mixing valve		

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed to heat water using a lower coiled heat exchanger from various sources, as well as to accumulate and store it for domestic hot water needs. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the heat exchanger, an additional flanged hatch with a cover is provided, designed for installing a flanged heat exchanger, enabling connection to an additional heating source. To protect the internal coating, one or more magnesium anodes are included.

Tank	
P	T
6 bar	95 °C
Coil	
P	T
10 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

HEAT EXCHANGER

The heat exchanger is made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam insulation with a PVC cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive.**

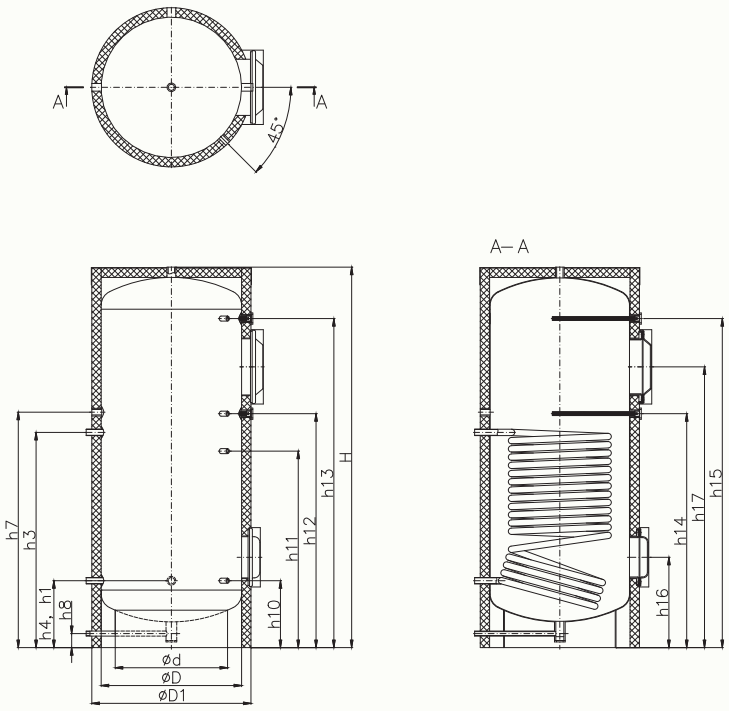
Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		Scoil1, m²	Vcoil1, l	
400	413	1,95	13,0	B
500	483	1,95	13,0	B
		2,60	18,0	
750	773	2,05	15,0	C
		2,95	21,0	
1000	1008	2,75	25,5	C
		3,50	32,5	
1500	1449	4,40	42,0	C
2000	2158	5,55	53,0	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION



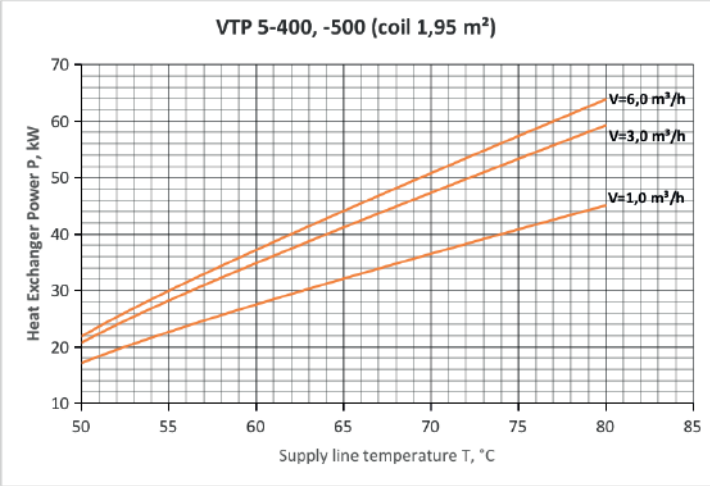
DESIGNATION

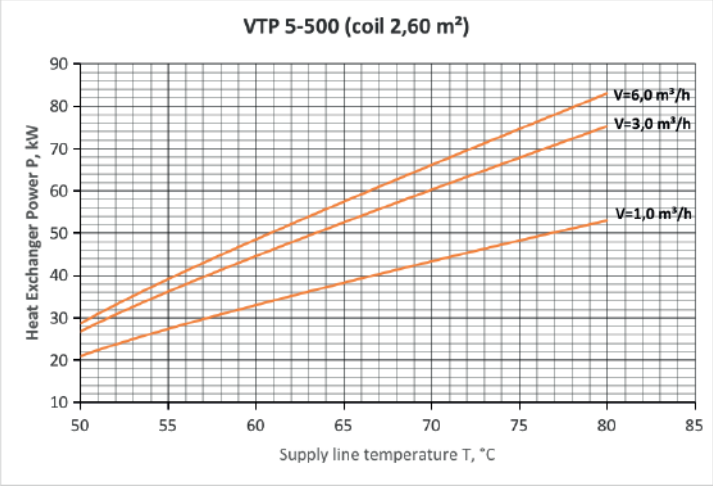
H	Hot water supply
h1	Cold water supply
h3,h4	Supply and return lines of the lower heat exchanger (Coil 1)
h7	Recirculation
h8	Drainage
h9	Connection for electric heat element
h10-h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16	Flange
h17	Flange for additional heat exchanger

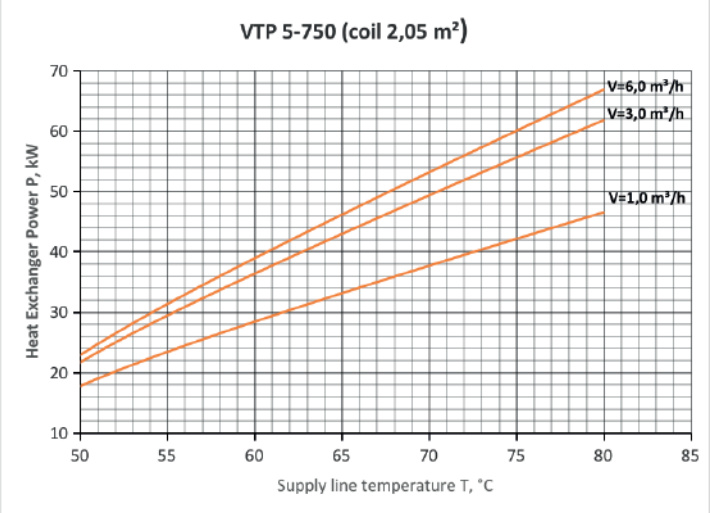
Model	Scoil 1, m²	Dimensions, mm				Connection sizes, mm												
		ØD1	ØD	Ød	H	h1	h3	h4	h7	h8	h10	h11	h12	h13	h14	h15	h16	h17
400	1,95	700	600	450	1730	331	991	331	1231	75	331	891	1091	1481	1091	-	456	1291
					1 1/4"	1 1/4"	1"		3/4"		1/2"				1"		Ø210	
500	1,95	700	600	450	1980	331	991	331	1231	75	331	891	1091	1731	1091	-	456	1341
	2,60						1211		1331			1111	1311		1311			1511
					1 1/4"	1 1/4"	1"		3/4"		1/2"				1"		Ø210	
750	2,05	850	750	600	2035	357	929	357	1257	75	357	829	1029	1757	1029	-	482	1279
	2,95						1149					1049	1249		1249			1449
					1 1/4"	1 1/4"	1"		3/4"		1/2"				1"		Ø210	Ø300
1000	2,75	950	850	700	2085	390	940	390	1290	75	390	840	1040	1790	1040	-	515	1390
	3,50						1090					990	1190		1190			1490
					1 1/2"	1 1/2"	1 1/4"			3/4"	1/2"				1"		Ø210	Ø300
1500	4,4	1100	1000	850	2170	430	1130	430	1330	75	430	1030	1230	1830	1230	1830	555	1430
					1 1/2"	1 1/2"	1 1/4"			3/4"	1/2"				1"		Ø210	Ø300
2000	5,55	1300	1200	1000	2260	471	1171	471	1372	75	471	1071	1271	1871	1271	1871	596	1471
					2"	2"	1 1/4"			3/4"	1/2"				1"		Ø210	Ø350

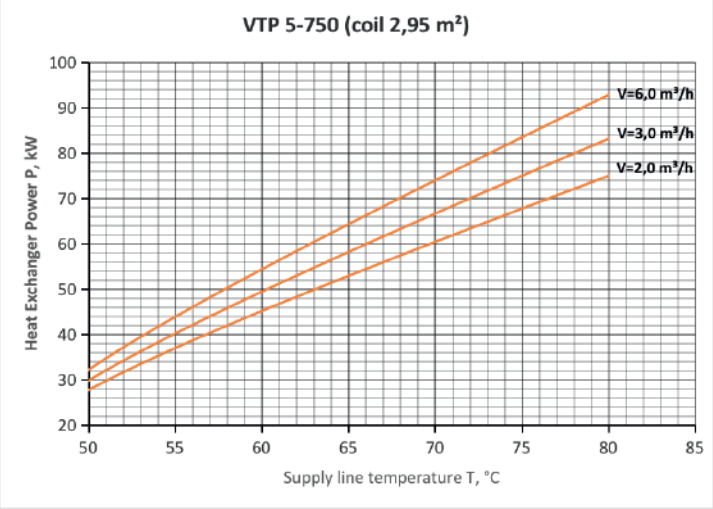
LOWER HEAT EXCHANGER POWER

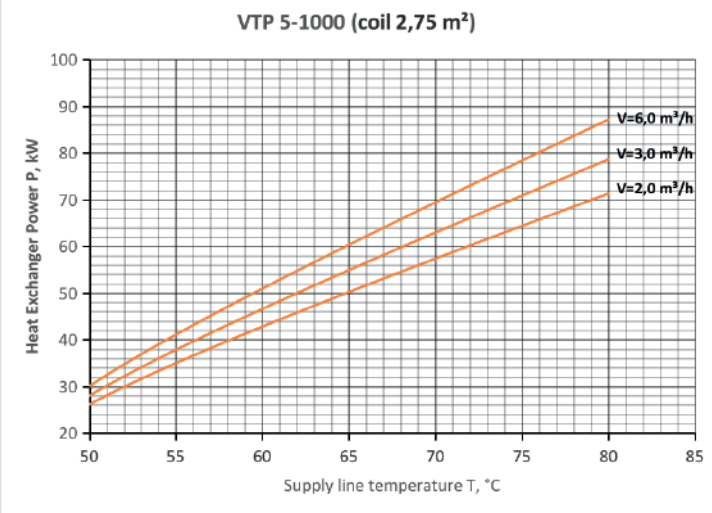
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

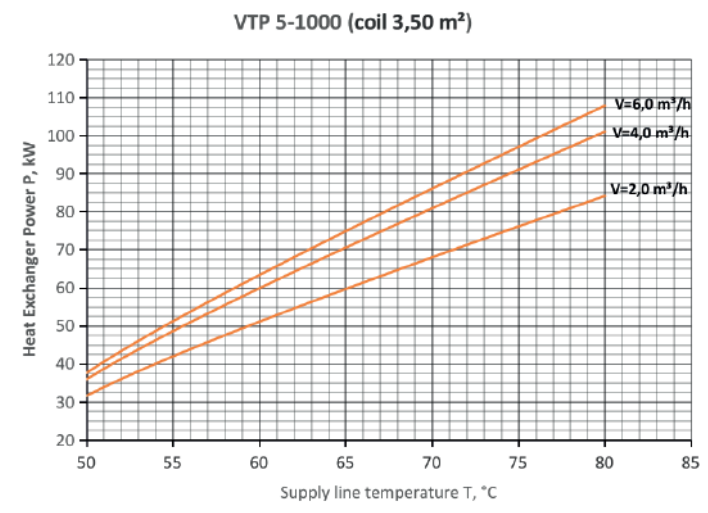


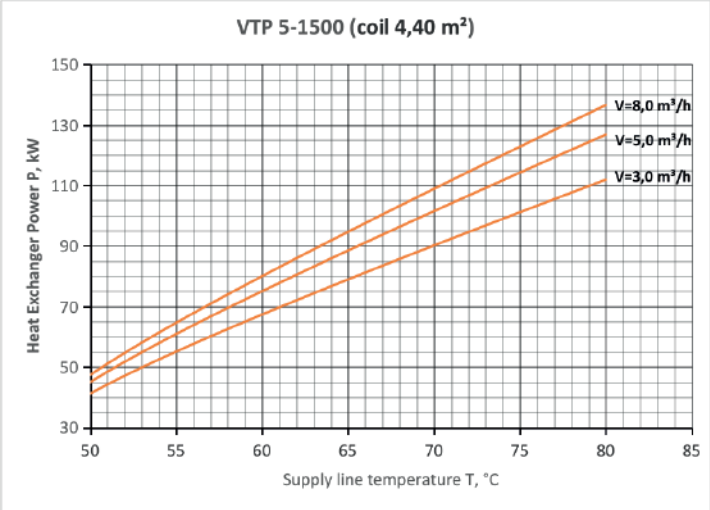


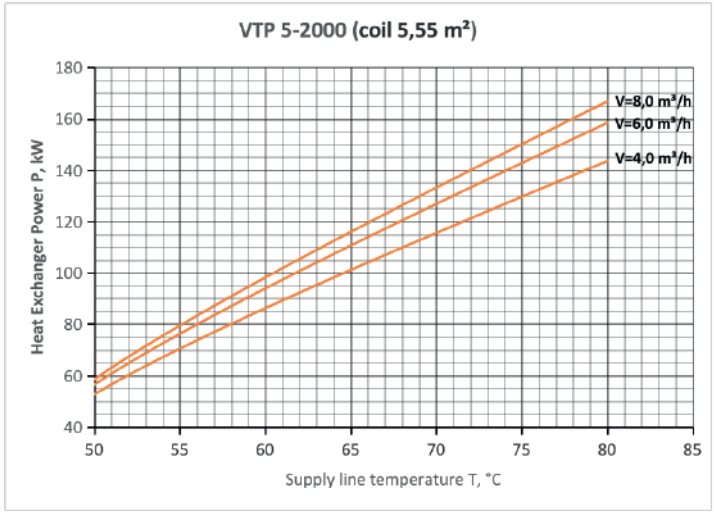




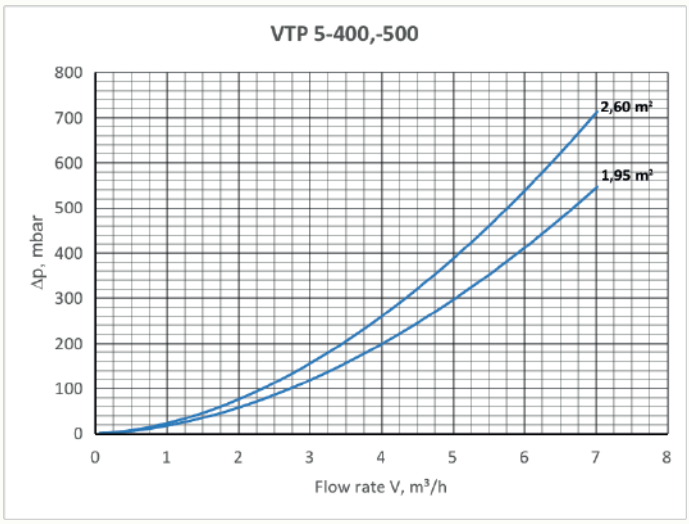


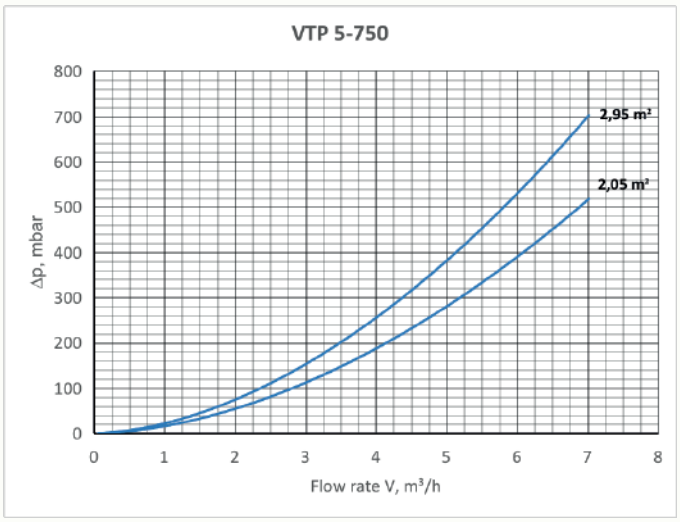


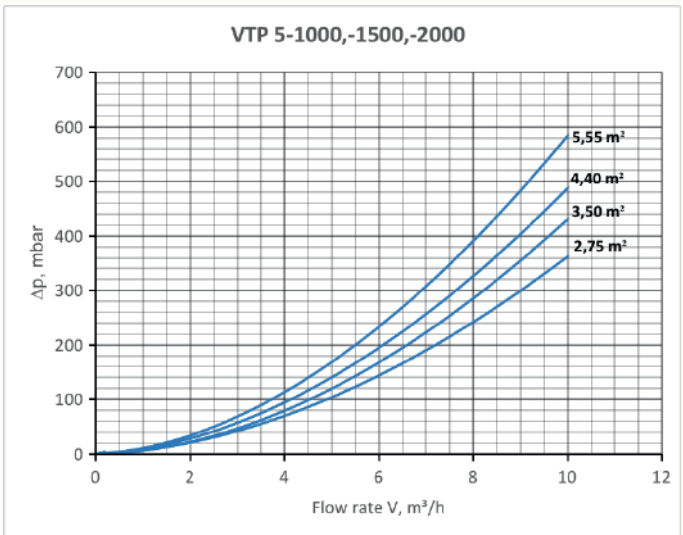




PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER





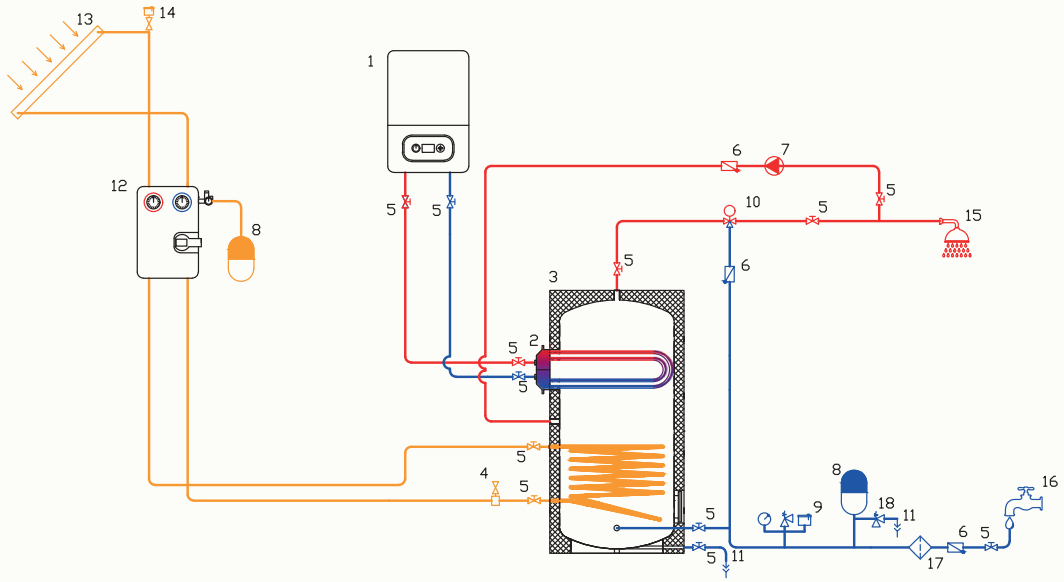


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower heat exchanger	Usable volume of the tank	Circulation of the heat transfer fluid in the heat exchanger	Heat exchanger power at the supply heat transfer fluid temperature **T** into the heat exchanger, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the heat exchanger, with the heating source activated.				Maximum DHW output at 45°C with the tank heated to **T**, with the heating source turned off			
	m²	l	m³/h	kW T, °C				l/h T, °C				l T, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,95	367	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	472	525	577	630
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	1,95	437	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	562	625	687	750
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	2,6	432	1,0	27,3	38,2	43,2	52,9	672	941	1064	1303	555	617	678	740
			3,0	36,1	52,4	60,1	75,2	889	1291	1480	1852				
750	2,05	701	1,0	23,4	33,1	37,6	46,5	576	815	926	1145	901	1001	1101	1201
			3,0	29,4	42,9	49,3	61,7	724	1057	1214	1520				
750	2,95	693	2,0	36,9	52,8	60,3	74,9	909	1300	1485	1845	891	990	1089	1188
			3,0	40,1	58,1	66,6	83,1	988	1431	1640	2048				
1000	2,75	900	2,0	39,4	57,5	66,1	82,7	970	1416	1628	2037	1157	1286	1414	1543
			3,0	37,8	54,9	63,0	78,6	931	1352	1552	1936				
1000	3,5	892	2,0	41,8	59,6	67,9	84,1	1030	1468	1672	2071	1147	1274	1402	1529
			4,0	48,5	70,5	80,8	101,0	1195	1736	1990	2488				
1500	4,4	1266	3,0	55,1	78,9	90,2	111,9	1357	1943	2222	2756	1628	1809	1990	2171
			5,0	60,9	88,5	101,5	126,8	1500	2180	2500	3123				
2000	5,55	1867	4,0	70,4	101,1	115,5	143,5	1734	2490	2845	3534	2401	2668	2934	3201
			6,0	76,2	110,6	126,8	158,4	1877	2724	3123	3901				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Gas/electric boiler	7	Circulation pump	13	Solar collector (solar circuit)
2	Flanged U-shaped heat exchanger	8	Expansion tank	14	Solar circuit air vent
3	VTP 5 water heater	9	Safety group	15	Domestic hot water system
4	Automatic solar circuit air vent	10	Three-way mixing valve	16	Water supply system
5	Ball valve	11	Drainage	17	Mesh filte
6	Check valve	12	Circulation pump	18	Safety valve

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed for heating water in bivalent systems, as well as for its accumulation and storage for DHW. The lower heat exchanger is i ntended for connection to low-temperature heat sources (e.g., solar collectors, heat pumps). The upper heat exchanger is designed for connection to high-temperature sources (primarily used for additional heating). The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the lower heat exchanger, a fitting is provided for installing an electric heat element. To protect the internal coating, one or more magnesium anodes are included.

Tank	
P	T
6 bar	95 °C
Coil	
P	T
10 bar	95 °C

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating that offers high adhesion to metal and elasticity, preventing microcracking due to thermal deformation of the tank walls. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam insulation with a PVC cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive.**

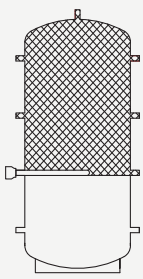
Model	Tank volume, l	Lower coil		Upper coil		Energy efficiency class of insulation*
		Scoil1, m²	Vcoil1, l	Scoil2, m²	Vvoil2, l	
400	413	1,95	13,0	1.00	6,5	B
500	483	1,95	13,0	1,25	8,5	B
		2,60	18,0	1,00	6,5	
750	773	1,90	14,0	1,05	7,5	C
		2,95	21,0	1,40	10,0	
1000	1008	2,50	23,0	1,25	11,5	C
		3,50	32,5	2,00	18,5	
1500	1449	2,80	26,5	1,55	14,5	C
		4,40	42,0	2,50	24,0	
2000	2158	5,55	53,0	3,15	30,0	C

*Клас енергоефективності вказаний для ізоляції PS/ABS

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES



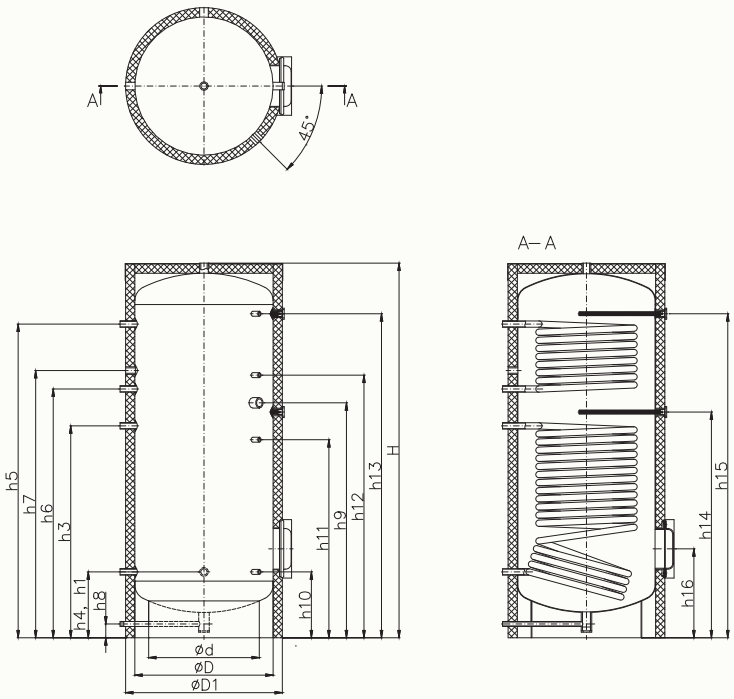
Electric heat elements

Model	Coils		Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
				1~220		3~400					
	Scoil1, m²	Scoil2, m²		Час нагріву на ΔT=20°, хв							
400	1,95	1.00	153	187	124	83	62	50	41	-	-
500	1,95	1,25	224	273	182	121	91	73	61	-	-
	2,60	1,00	162	198	132	88	66	53	44	-	-
750	1,90	1,05	417	508	339	226	169	136	113	85	-
	2,95	1,40	300	366	244	163	122	98	81	61	-
1000	2,50	1,25	558	680	454	302	227	181	151	113	91
	3,50	2,00	445	543	362	241	181	145	121	90	72
1500	2,80	1,55	840	1024	683	455	341	273	228	171	137
	4,40	2,50	644	785	523	349	262	209	174	131	105
2000	5,55	3,15	963	1174	783	522	391	313	261	196	157

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



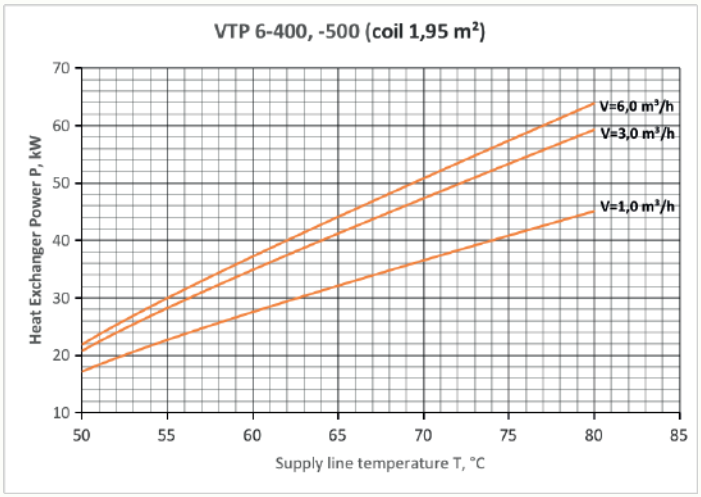
DESIGNATION

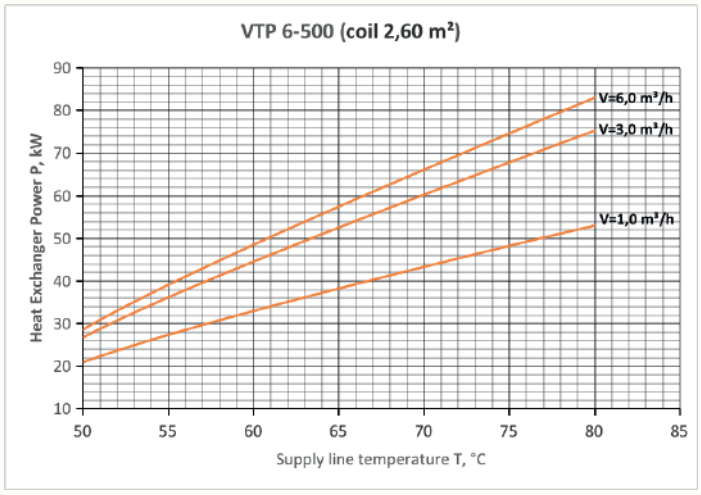
H	Hot water supply
h1	Cold water supply
h2	Supply and return lines of the lower heat exchanger (Coil 1)
h5,h6	Supply and return lines of the lower heat exchanger (Coil 2)
h7	Recirculation
h8	Drainage
h9	Connection for electric heat element
h10-h13	Connections for control, regulation, and measuring equipment
h14,h15	Connections for magnesium anode
h16	Flange

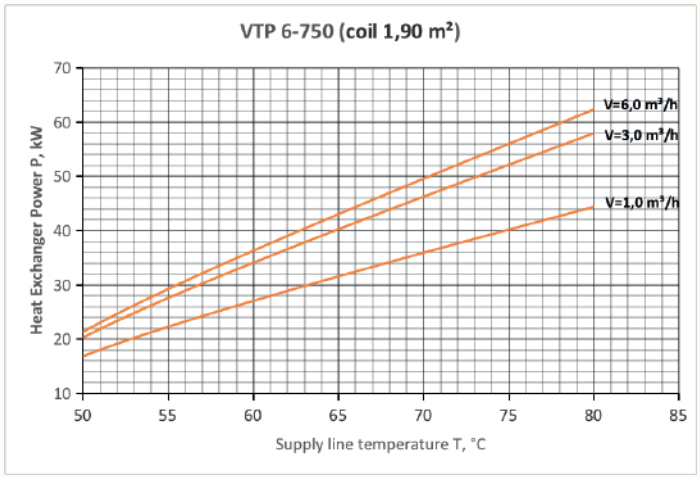
Model	Heat exchangers		Dimensions, mm			Connection sizes, mm															
	S coil 1, m²	S coil 2, m²	ØD1	ØD	Ød	H	h1	h3	h4	h5	h6	h7	h8	h9	h10	h11	h12	h13	h14	h15	h16
400	1,95	1,00	800	600	450	1730	331	991	331	1449	1141	1241	75	1116	331	916	1216	1481	1066	-	456
						1 1/4"		1"				3/4"		1 1/2"	1/2"				1"		
500	1,95	1,25	800	600	450	1980	331	991	331	1687	1291	1391	75	1116	331	916	1366	1731	1066	-	456
	2,60	1,00						1211		1719	1411	1511		1336		1136	1486		1286		
						1 1/4"		1"				3/4"		1 1/2"	1/2"				1"		
750	1,90	1,05	950	750	600	2035	357	885	357	1449	1185	1285	75	1010	357	810	1260	1757	960	-	482
	2,95	1,40						1149		1701	1349	1449		1274		1074*	1424		1224		
						1 1/4"		1"				3/4"		1 1/2"	1/2"				1"		
1000	2,50	1,25	1050	850	700	2085	390	890	390	1440	1190	1290	75	1015	390	815	1265	1790	965	-	515
	3,50	2,00						1090		1690	1290	1390		1215		1015	1365		1165		
						1 1/2"		1 1/4"				3/4"		1 1/2"	1/2"				1"		
1500	2,80	1,55	1200	1000	850	2170	430	880	430	1430	1180	1280	75	1005	430	805	1255	1830	955	1830	555
	4,40	2,50						1130		1730	1330	1430		1255		1055	1405		1205		
						1 1/2"		1 1/4"				3/4"		1 1/2"	1/2"				1"		
2000	5,55	3,15	1400	1200	1000	2260	472	1171	471	1871	1471	1571	75	1296	471	1096	1546	1871	1246	1871	596
						2"		1 1/4"				3/4"		1 1/2"	1/2"				1"		

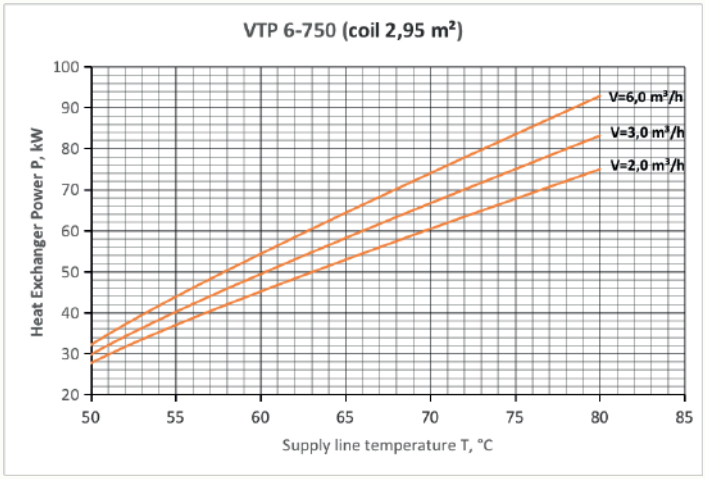
LOWER HEAT EXCHANGER POWER

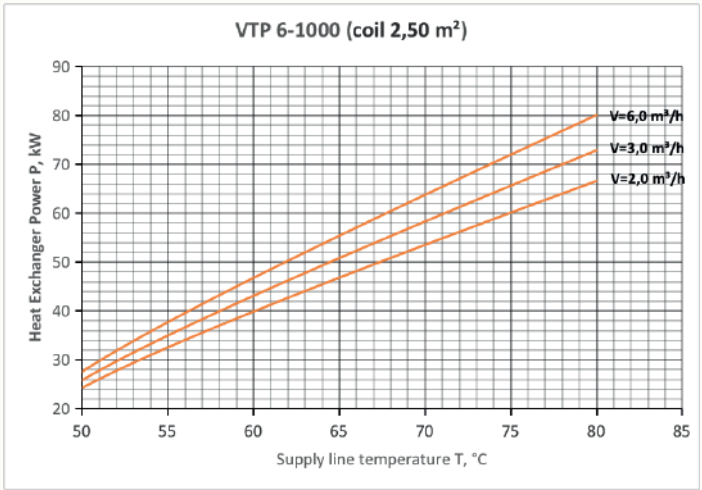
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

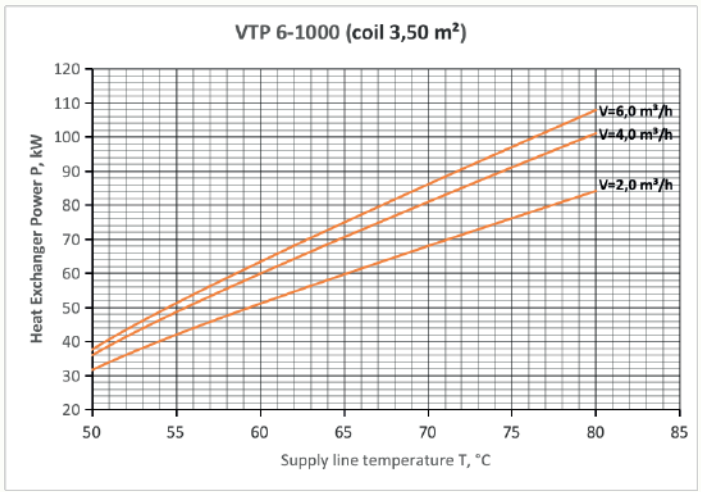


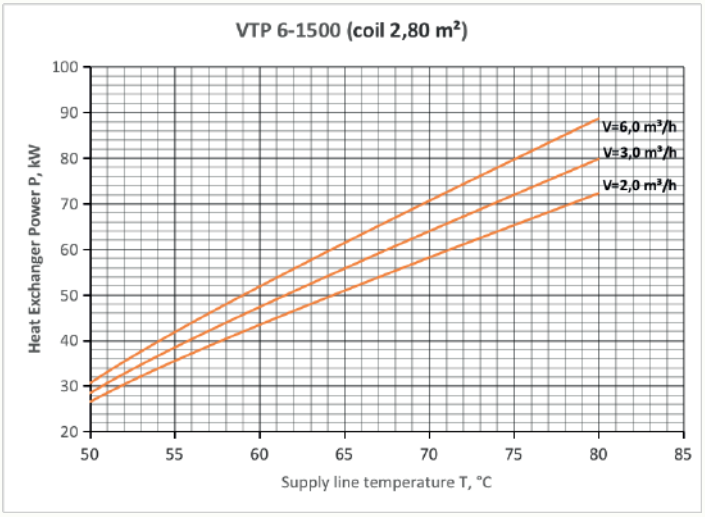


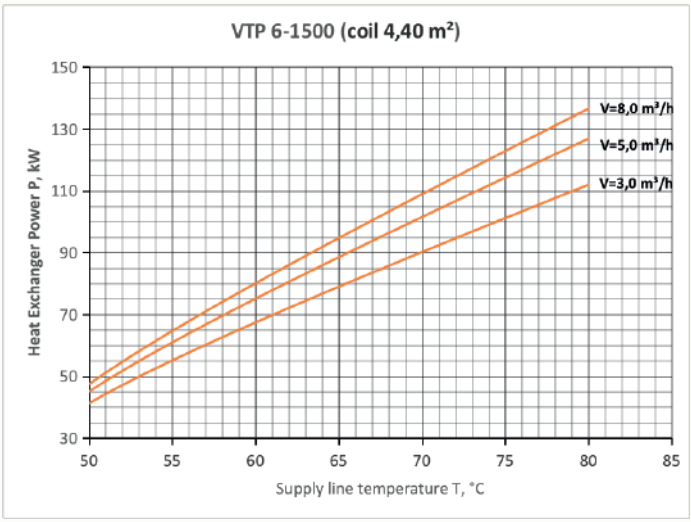


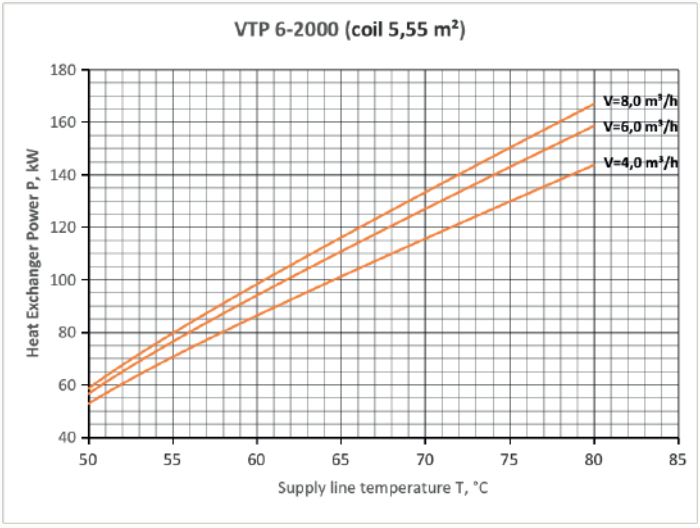




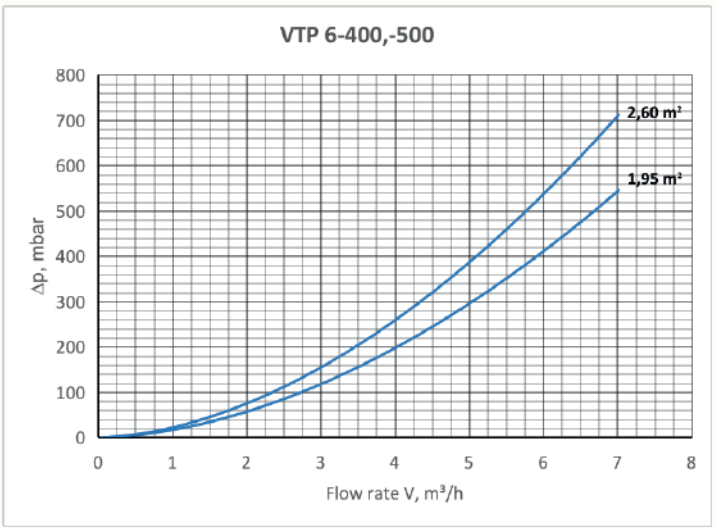


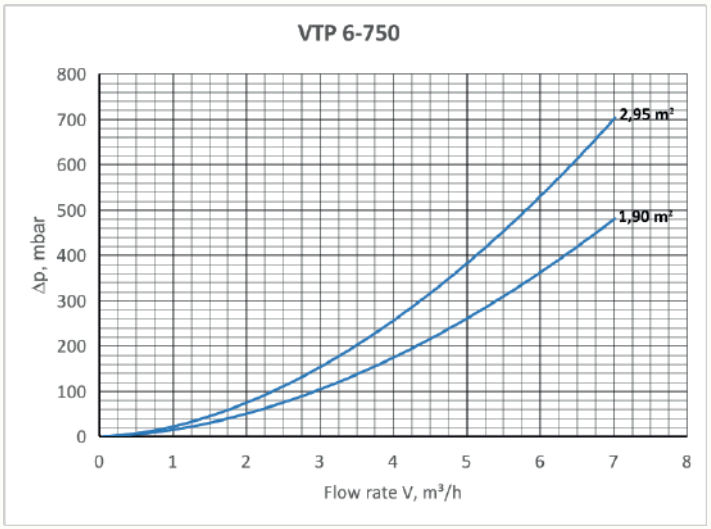


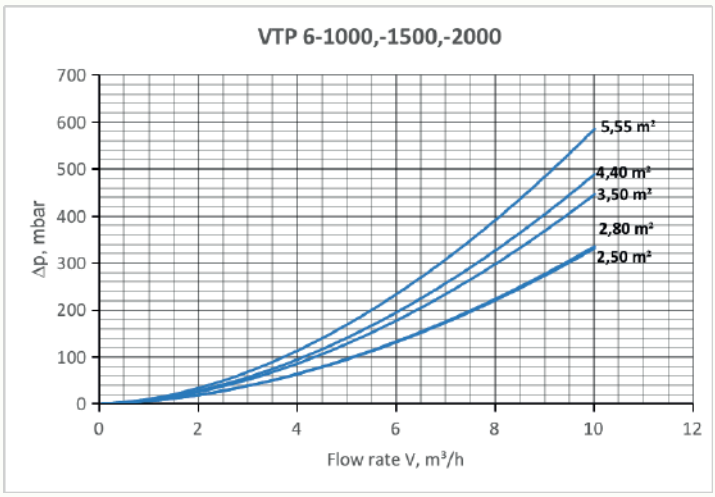




PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER





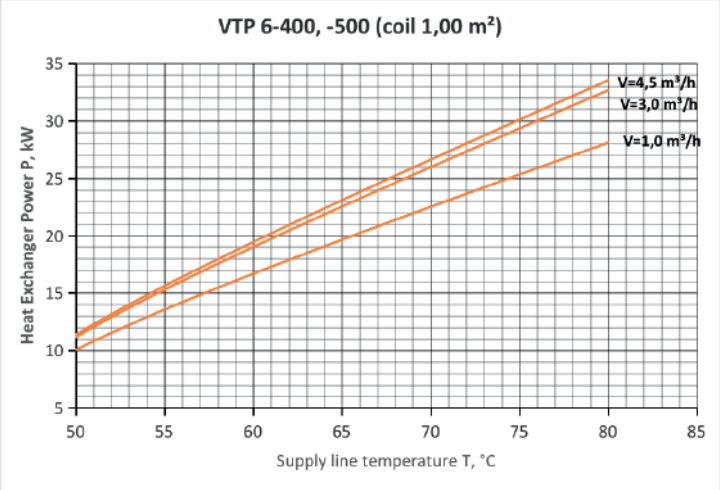


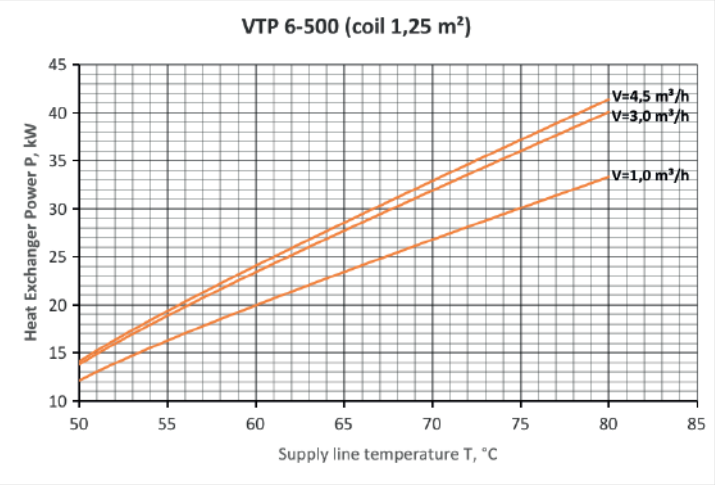
DHW OUTPUT (LOWER HEAT EXCHANGER)

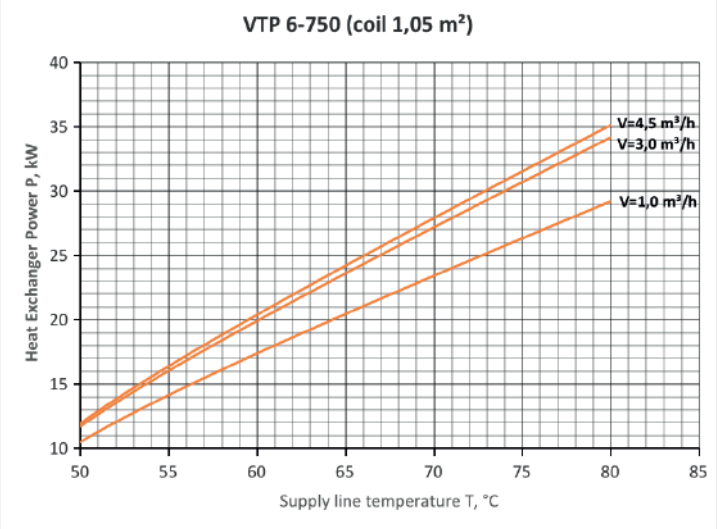
Model	Area of the lower heat exchanger	Usable volume of the tank	Circulation of the heat transfer fluid in the lower heat exchanger	Power of the lower heat exchanger at the supply heat transfer fluid temperature **T**, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower heat exchanger, with the heating source activated (lower heat exchanger only)				Maximum DHW output at 45°C with the tank heated to t, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,95	359	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	462	513	565	616
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	1,95	427	1,0	22,6	32,0	36,4	45,0	557	788	897	1108	549	610	671	732
			3,0	28,1	41,1	47,2	59,2	692	1012	1163	1458				
500	2,60	424	1,0	27,3	38,2	43,2	52,9	672	941	1064	1303	545	605	666	726
			3,0	36,1	52,4	60,1	75,2	889	1291	1480	1852				
750	1,90	693	1,0	22,2	31,5	35,8	44,3	547	776	882	1091	891	990	1089	1188
			3,0	27,5	40,2	46,2	57,9	677	990	1138	1426				
750	2,95	682	2,0	36,9	52,8	60,3	74,9	909	1300	1485	1845	876	974	1071	1168
			3,0	40,1	58,1	66,6	83,1	988	1431	1640	2048				
1000	2,50	889	2,0	32,5	46,7	53,5	66,5	800	1150	1318	1638	1143	1270	1397	1524
			3,0	34,9	50,7	58,2	72,8	860	1249	1433	1793				
1000	3,50	870	2,0	41,8	59,6	67,9	84,1	1030	1468	1672	2071	1119	1243	1368	1492
			4,0	48,5	70,5	80,8	101,0	1195	1736	1990	2488				
1500	2,80	1267	2,0	35,4	50,9	58,1	72,2	872	1254	1431	1778	1629	1810	1991	2172
			3,0	38,4	55,7	63,9	79,8	946	1372	1574	1966				
1500	4,40	1239	3,0	55,1	78,9	90,2	111,9	1357	1943	2222	2756	1593	1770	1947	2125
			5,0	60,9	88,5	101,5	126,8	1500	2180	2500	3123				
2000	5,55	1834	4,0	70,4	101,1	115,5	143,5	1734	2490	2845	3534	2357	2619	2881	3143
			6,0	76,2	110,6	126,8	158,4	1877	2724	3123	3901				

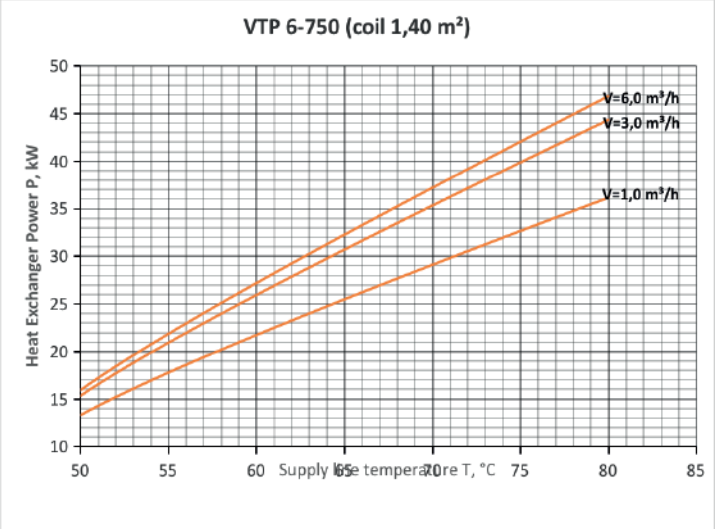
POWER OF THE UPPER HEAT EXCHANGER

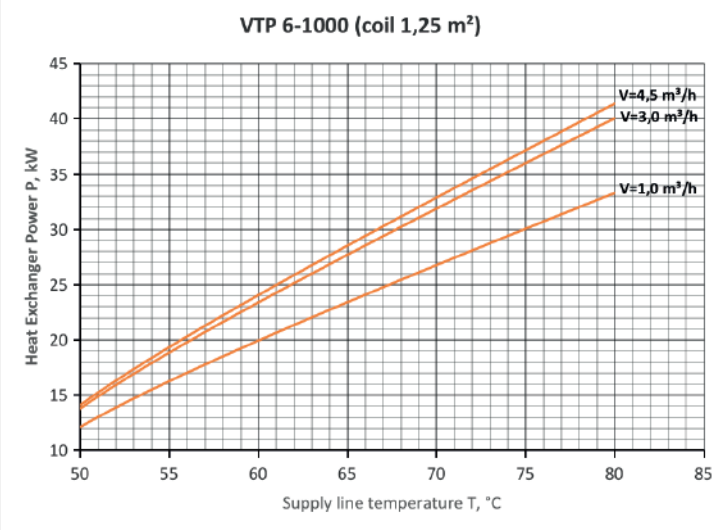
The power of the upper heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

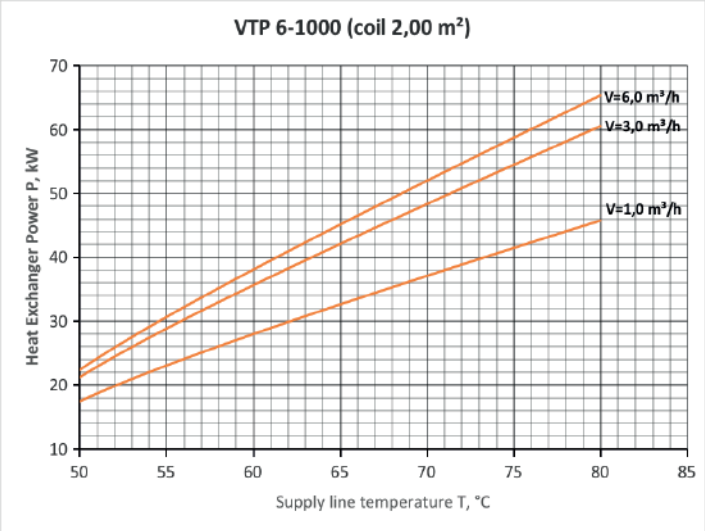


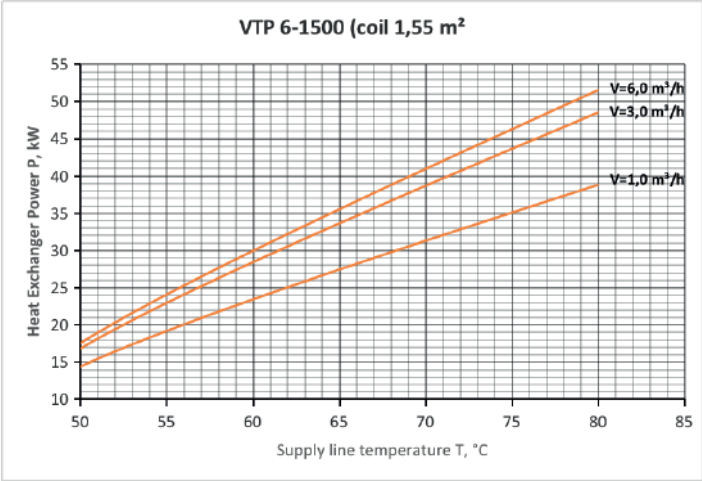


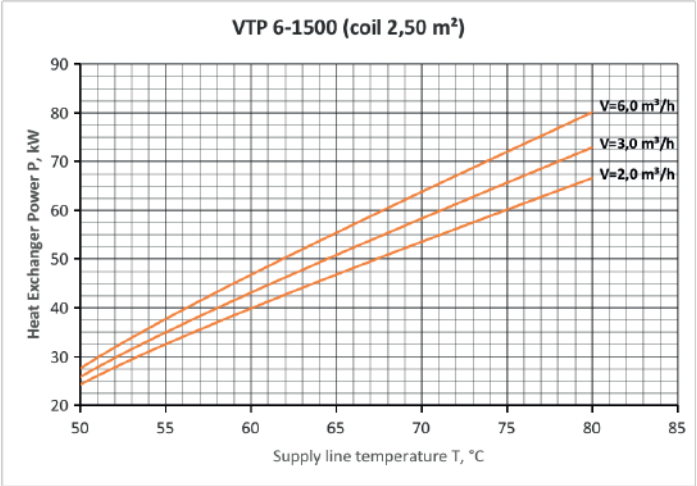


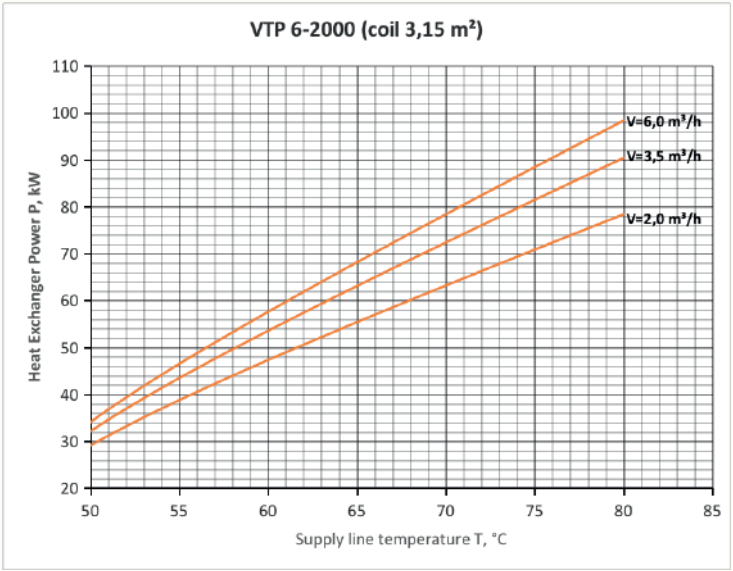




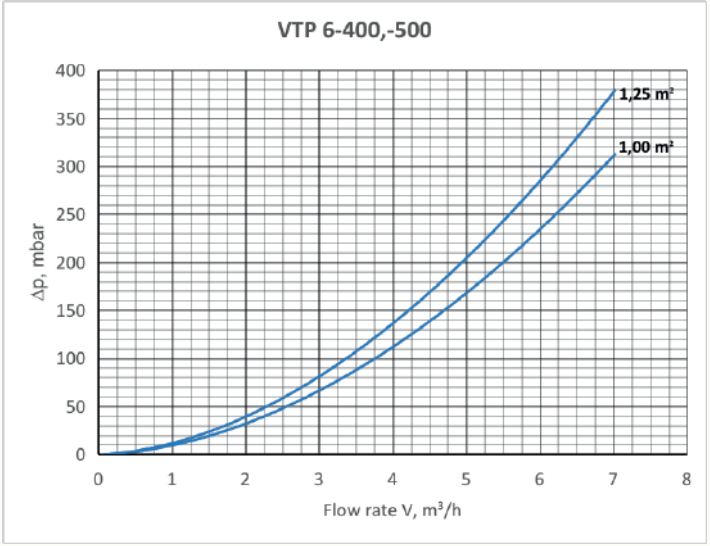


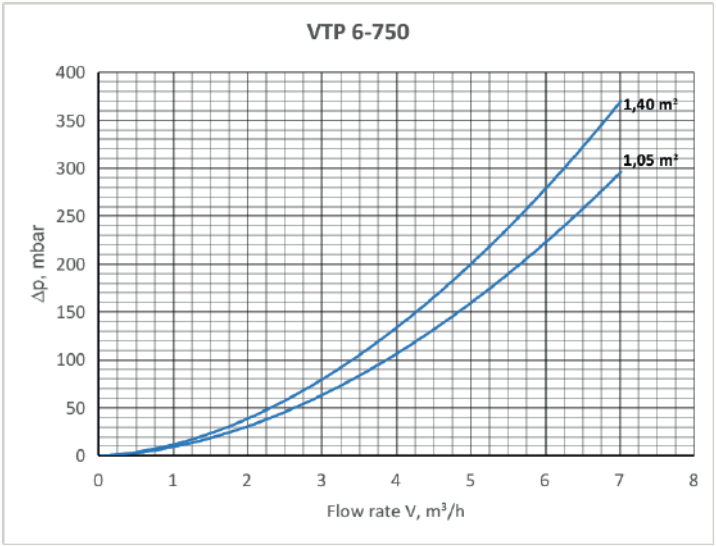






PRESSURE LOSSES OF THE UPPER HEAT EXCHANGER



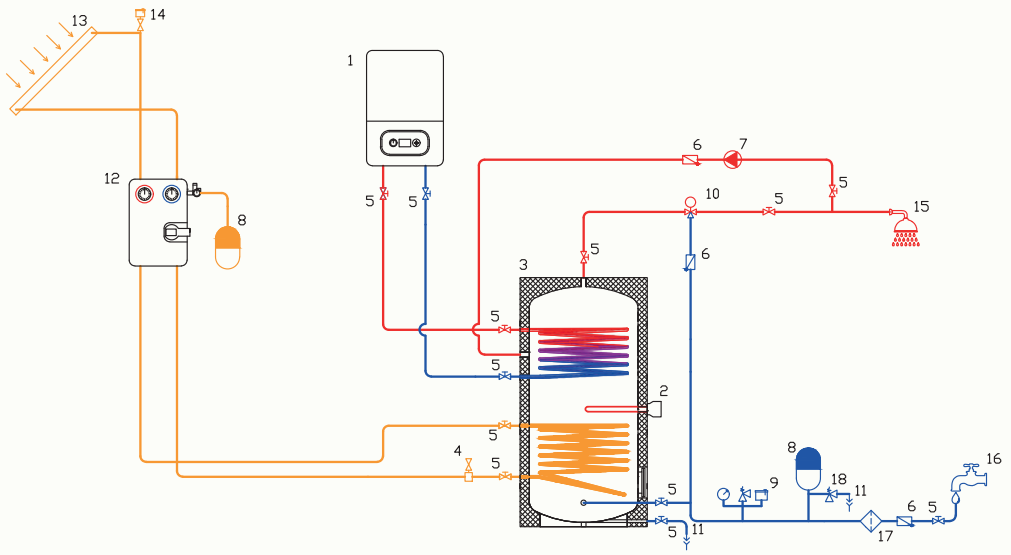


DHW OUTPUT (UPPER HEAT EXCHANGER)

Model	Area of the lower heat exchanger	Usable volume of the tank	Circulation of the heat transfer fluid in the heat exchanger	Heat exchanger power at the supply heat transfer fluid temperature exchanger, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the heat exchanger, with the heating source activated.				Maximum DHW output at 45°C with the tank heated to **T**, with the heating source turned off			
	m²	l	m³/h	kW T, °C				l/h T, °C				l t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,00	132	1,0	13,6	19,6	22,5	28,1	335	483	554	692	170	189	207	226
			3,0	15,3	22,5	25,9	32,6	377	554	638	803	170	189	207	226
500	1,25	158	1,0	16,2	23,4	26,7	33,3	399	576	658	820	203	225	248	271
			3,0	18,8	27,7	31,8	40,0	463	682	783	985	203	225	248	271
500	1,00	126	1,0	13,6	19,6	22,5	28,1	335	483	554	692	162	180	198	216
			3,0	15,3	22,5	25,9	32,6	377	554	638	803	162	180	198	216
750	1,05	321	1,0	14,1	20,4	23,4	29,2	347	502	576	719	413	459	505	551
			3,0	16,0	23,6	27,1	34,1	394	581	667	840	413	459	505	551
750	1,40	245	1,0	17,7	25,4	29,1	36,1	436	626	717	889	316	351	386	421
			3,0	20,9	30,7	35,3	44,3	515	756	869	1091	316	351	386	421
1000	1,25	434	1,0	16,2	23,4	26,7	33,0	399	576	658	813	557	619	681	743
			3,0	18,8	27,7	31,8	40,0	463	682	783	985	557	619	681	743
1000	2,00	369	1,0	23,0	32,5	37,0	45,7	567	800	911	1126	474	526	579	632
			3,0	28,8	42,0	48,3	60,5	709	1034	1190	1490	474	526	579	632
1500	1,55	668	1,0	19,1	27,4	31,2	38,8	470	675	768	956	859	955	1050	1146
			3,0	22,9	33,6	38,6	48,6	564	828	951	1197	859	955	1050	1146
1500	2,50	541	2,0	32,5	46,7	53,5	66,5	800	1150	1318	1638	696	773	850	928
			3,0	34,9	50,7	58,2	72,8	860	1249	1433	1793	696	773	850	928
2000	3,15	706	2,0	38,7	55,4	63,2	78,4	953	1365	1557	1931	908	1009	1110	1210
			3,5	43,4	63,1	72,4	90,4	1069	1554	1783	2227	908	1009	1110	1210

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Gas/electric boiler	7	Circulation pump	13	Solar collector (solar circuit)
2	Electric heat element	8	Expansion tank	14	Solar circuit air vent
3	VTP 6 water heate	9	Safety group	15	Domestic hot water system
4	Automatic solar circuit air vent	10	Three-way mixing valve	16	Water supply system
5	Ball valve	11	Drainage	17	Mesh filte
6	Check valve	12	Circulation pump	18	Safety valve

HEATING AND ACCUMULATION OF WATER FOR DHW

TECHNICAL DESCRIPTION

The water heater is designed for heating water in bivalent systems, as well as for its accumulation and storage for DHW. The lower heat exchanger is intended for connectionto low-temperature heat sources (e.g., solar collectors, heat pumps). The upper heat exchanger is designed for connection to high-temperature sources (primarily used for additional heating). The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the lower heat exchanger, a fitting is provided for installing a tubular electric heater.

Tank	
P	T
8 bar	95 °C
Coils	
P	T
10 bar	95 °C

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/ABS – 50 mm polyester insulation in an ABS plastic casing with plastic latches

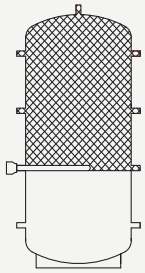
PS/ABS – high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

Model	Tank volume, l	Lower coil		Upper coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	S coil 2, m²	V voil 2, l	
170	169	0,51	2,7	0,51	2,7	A**/B
200	214	1,03	5,5	0,51	2,7	A**/C
300	305	1,54	8,2	0,77	4,1	A**/C

*Energy efficiency class specified for PS/ABS insulation

** For insulation thickness of 100 mm.

ACCESSORIES

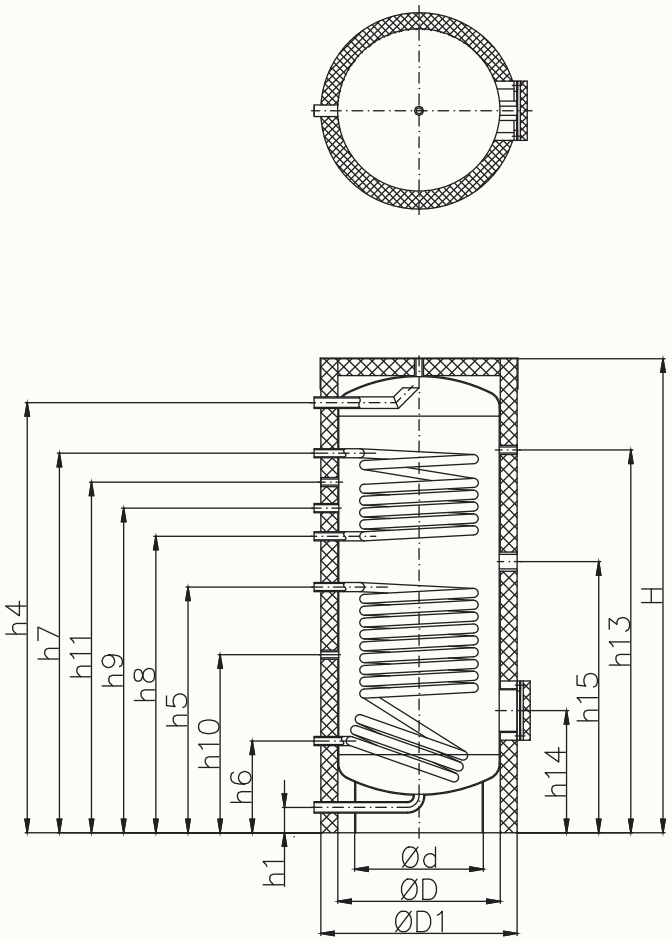


Electric heat elements

Model	Heating zone volume, liters	2 Kw	3 kW	4,5 kW
		1~220		3~400
		Heating time for ΔT=20°, minutes		
170	91	111	74	49
200	99	121	80	54
300	151	184	123	82

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



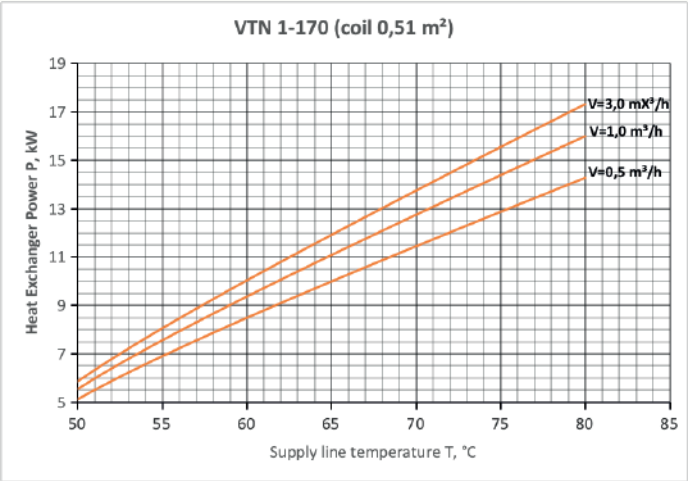
DESIGNATION

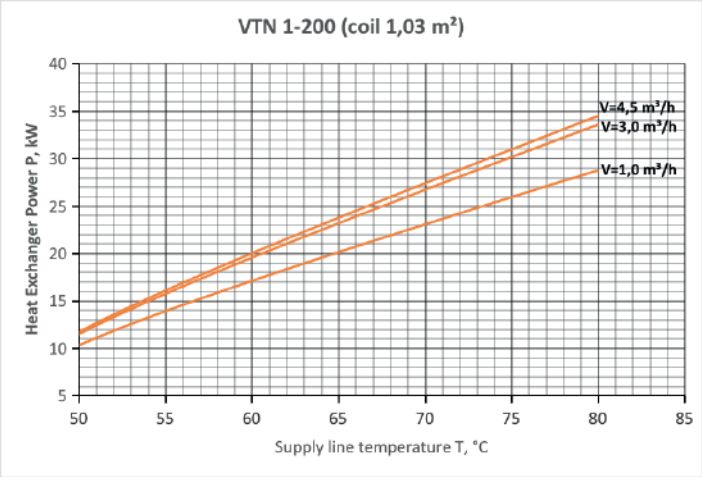
H	Air vent
h1	Cold water supply, drainage
h4	Hot water outlet
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h7-h8	Supply and return mains of the upper heat exchanger (Coil 2)
h9	Recirculation
h10,h11,h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм
h15	Connection for electric heat element

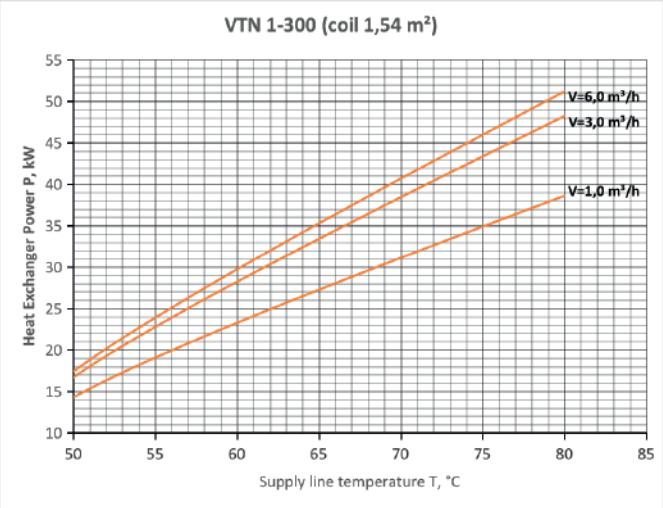
Model	Dimensions, mm				Connection sizes, mm											
	ØD1	ØD	Ød	H	h1	h4	h5	h6	h7	h8	h9	h10	h11	h13	h14	h15
170	580	480	380	1150	75	1011	506	261	901	656	736	356	816	871	321	581
				1/2"	3/4"							1/2"				1 1/2"
200	580	480	380	1410	75	1271	726	271	1121	876	956	526	1036	1131	361	801
				1/2"	1"		3/4"				1"	1/2"				1 1/2"
300	580	480	380	1910	75	1771	936	271	1501	1086	1186	636	1286	1631	361	1011
				1/2"	1"		3/4"				1"	1/2"				1 1/2"

LOWER HEAT EXCHANGER POWER

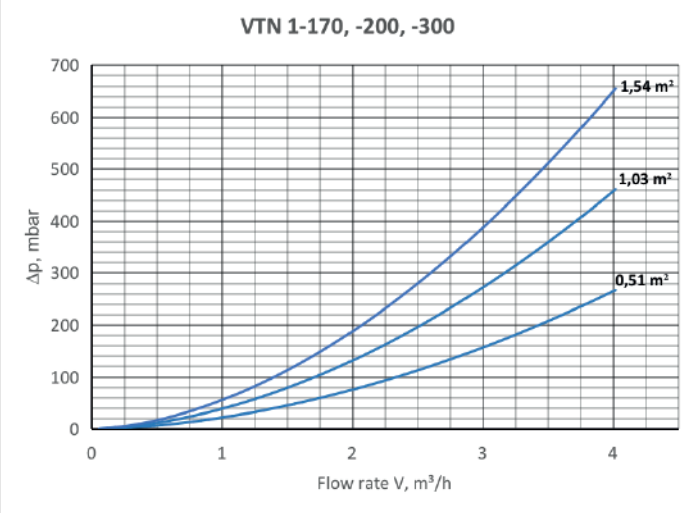
he power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.







PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

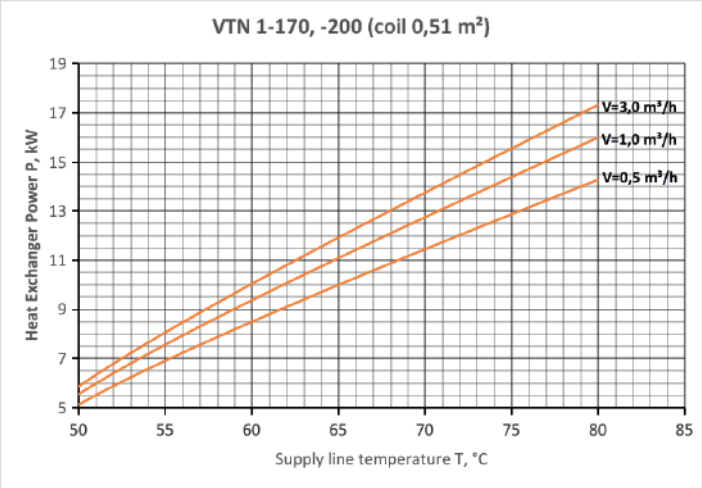


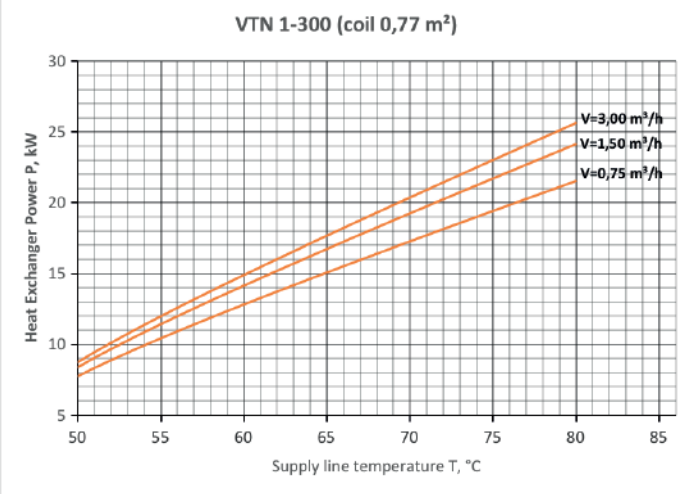
DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
170	0,51	145	0,5	6,9	10,0	11,4	14,3	170	246	281	352	187	207	228	249
			1,0	7,5	11,1	12,7	16,0	185	273	313	394				
200	1,03	187	1,0	13,9	20,1	23,0	28,7	342	495	567	707	240	267	294	320
			3,0	15,7	23,1	26,7	33,5	387	569	658	825				
300	1,54	273	1,0	19,0	27,3	31,1	38,6	468	672	766	951	350	389	428	467
			3,0	22,8	33,4	38,4	48,2	562	823	946	1187				

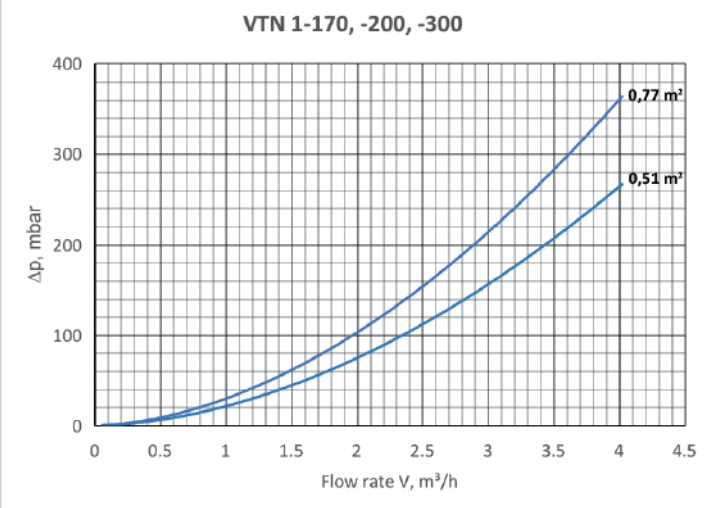
POWER OF THE UPPER HEAT EXCHANGER

The power of the upper heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.





PRESSURE LOSSES OF THE UPPER HEAT EXCHANGER

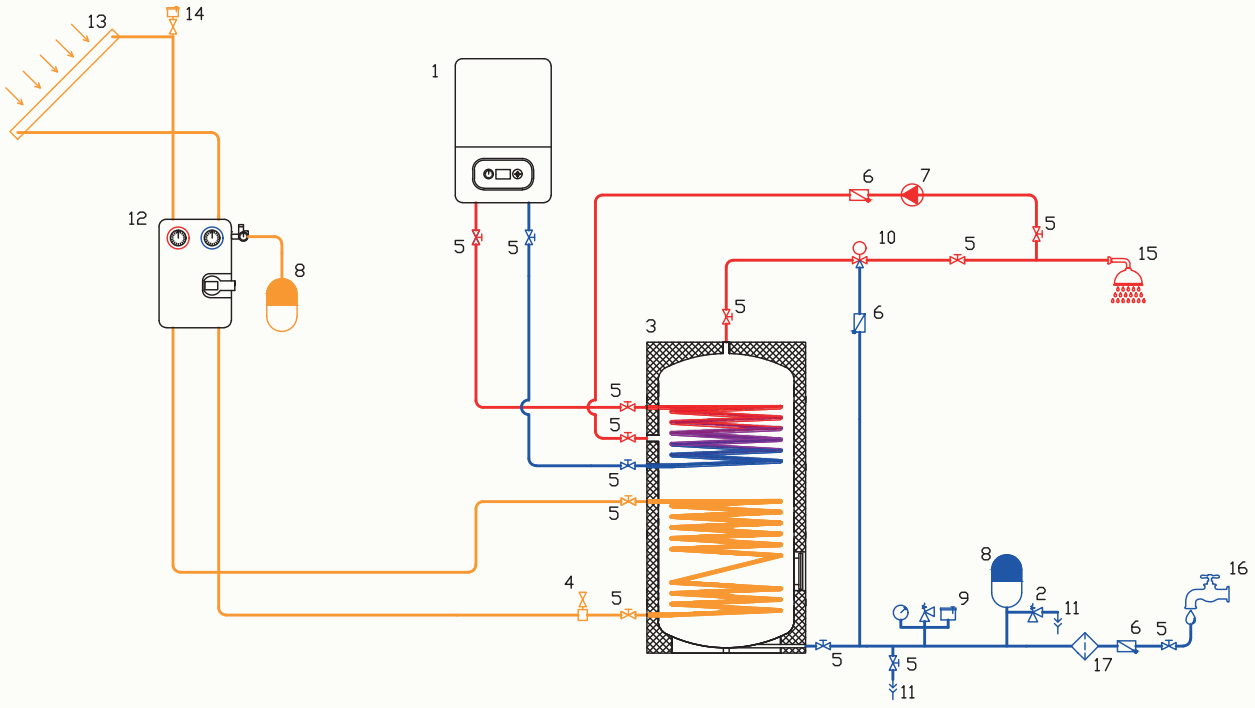


DHW OUTPUT (UPPER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
170	0,51	71	0,5	6,9	10,0	11,4	14,3	170	246	281	352	91	101	111	121
			1,0	7,5	11,1	12,7	16,0	185	273	313	394				
200	0,51	78	0,5	6,9	10,0	11,4	14,3	170	246	281	352	100	111	122	133
			1,0	7,5	11,1	12,7	16,0	185	273	313	394				
300	0,77	129	0,8	10,4	15,0	17,2	21,5	256	369	424	530	166	184	202	221
			1,5	11,4	16,7	19,2	24,1	281	411	473	594				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Gas/electric boiler
2 Safety valve
3 VTN 1 water heater
4 Automatic solar circuit air vent
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Drainage
12 Circulation pump
13 Solar collector
14 Solar circuit air vent
15 Domestic hot water system
16 Water supply system
17 Mesh filter

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed for heating water in bivalent systems, as well as for its accumulation and storage for DHW. The lower heat exchanger is intended for connection to low-temperature heat sources (e.g., solar collectors, heat pumps). The upper heat exchanger is designed for connection to high-temperature sources (primarily used for additional heating). The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank.

Tank	
P	T
6 bar	95 °C
Coils	
P	T
10 bar	95 °C

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm thick polyester thermal insulation in a PVC fabric casing with a zipper

PU/PVC – 90 mm thick elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm thick polyester thermal insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm thick high-efficiency rigid thermal insulation made of graphitized polystyrene in an ABS plastic casing. Premium-class insulation - complies with all requirements of the **ErP 2009/125/EC Directive**

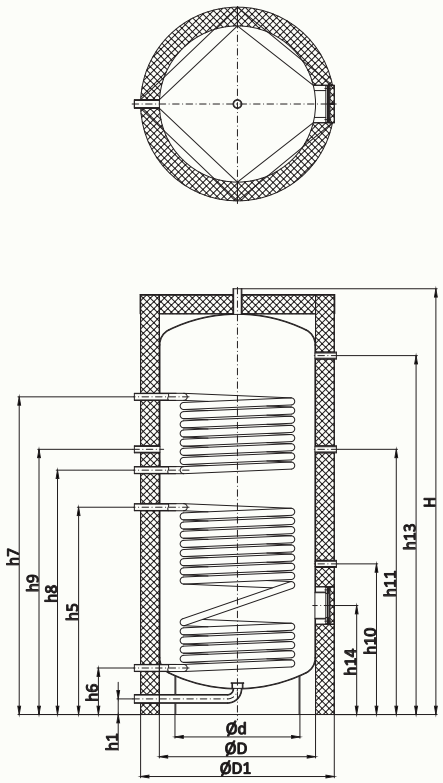
Model	Tank volume, l	Lower coil		Upper coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	S coil 2, m²	V voil 2, l	
400	413	1,48	11,0	1,00	8,0	B
500	483	1,84	14,0	1,00	8,0	B
750	773	2,24	18,0	1,40	10,0	C
1000	1008	3,0	29,0	2,00	19,0	C
1500	1449	4,10	37,0	2,62	26,0	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION

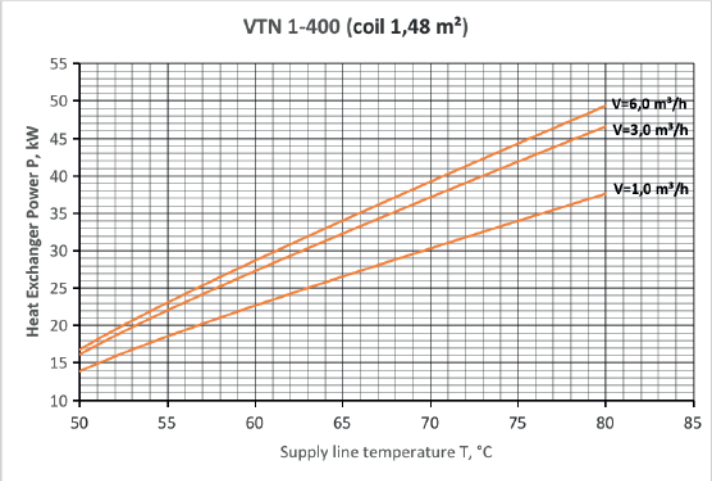


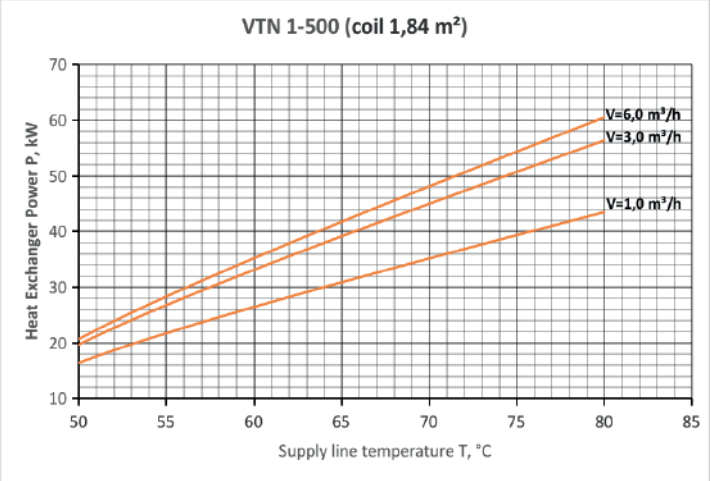
DESIGNATION	
H	Air vent
h1	Cold water supply, drainage
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h7-h8	Supply and return mains of the upper heat exchanger (Coil 2)
h9	Recirculation
h10,h11,h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм

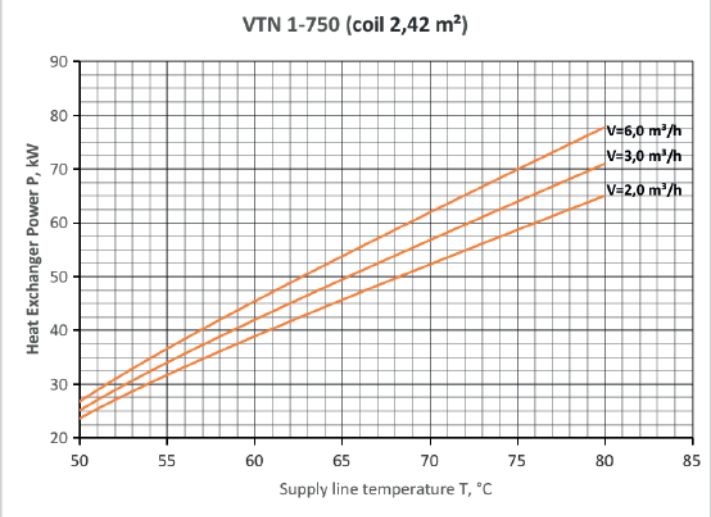
Model	Dimensions, mm				Connection sizes, mm									
	ØD1	ØD	Ød	H	h1	h5	h6	h7	h8	h9	h10	h11	h13	h14
400	800	600	450	1725	75	821	181	1283	931	1031	631	1031	1431	481
					1"					3/4"				
500	800	600	450	1975	75	953	181	1483	1131	1231	681	1231	1681	481
					1"					3/4"				
750	950	750	600	2045	75	995	223	1525	1173	1273	723	1273	1723	523
					1 1/4"		1"				3/4"			
1000	1050	850	700	2080	75	990	240	1590	1190	1290	740	1290	1740	540
					1 1/4"					3/4"				
1500	1200	1000	850	2200	75	1121	321	1721	1271	1371	821	1371	1821	621
					1 1/2"		1 1/4"				3/4"			

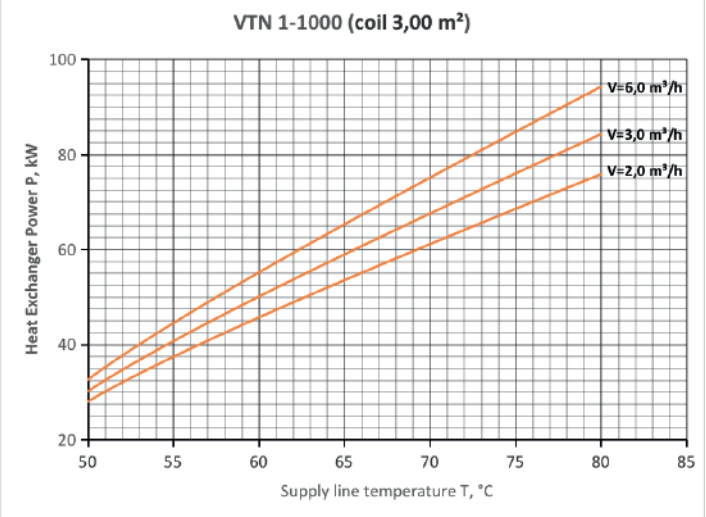
LOWER HEAT EXCHANGER POWER

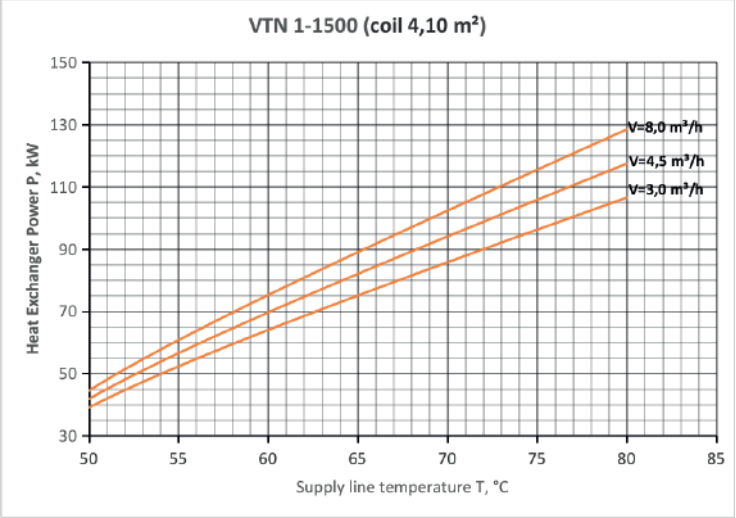
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.



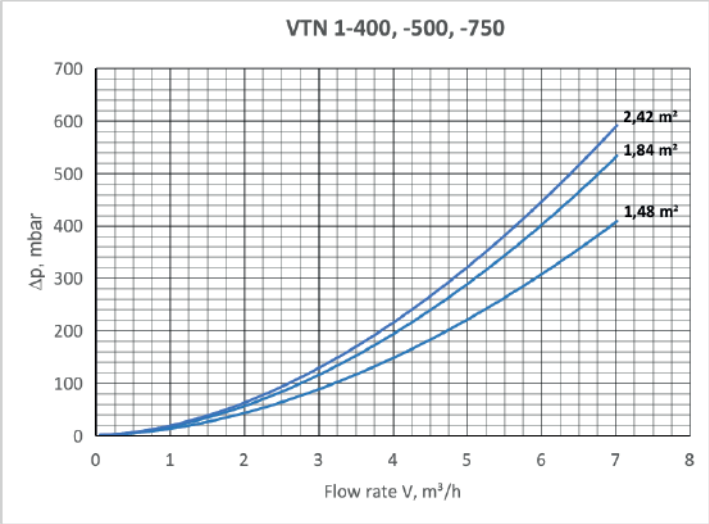


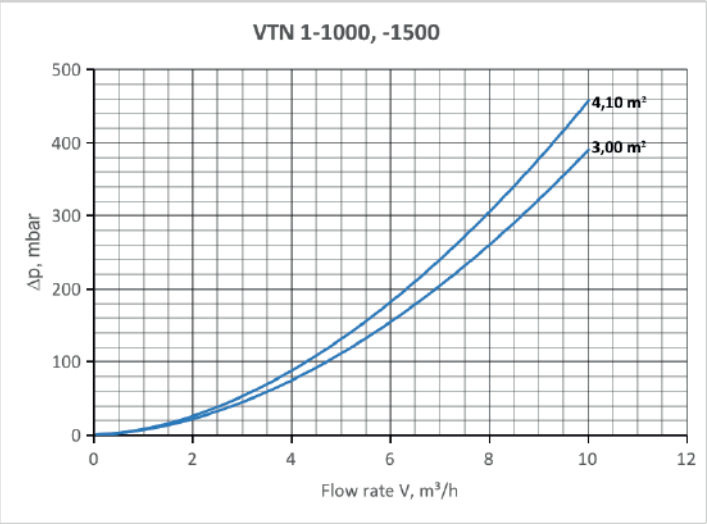






PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER



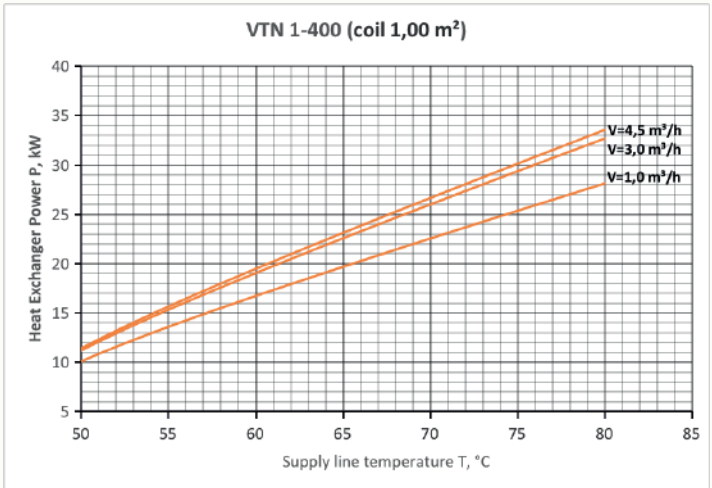


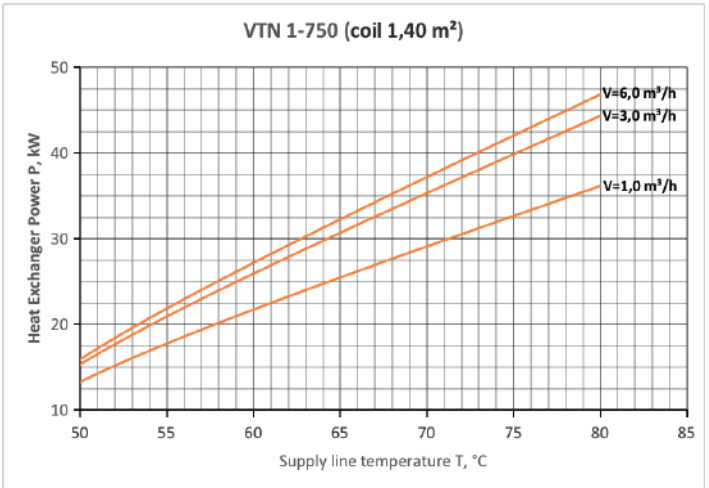
DHW OUTPUT (LOWER HEAT EXCHANGER)

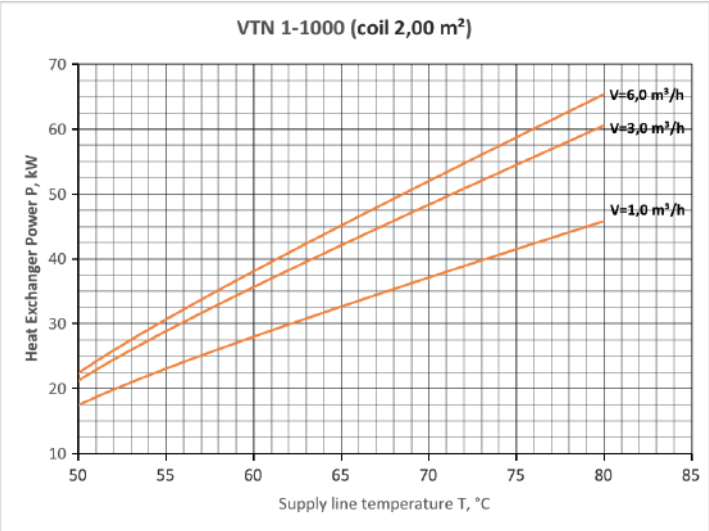
Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,48	362	1,0	18,5	26,5	30,2	37,5	456	653	744	924	466	518	569	621
			3,0	22,0	32,2	37,1	46,5	542	793	914	1145				
500	1,84	430	1,0	21,7	30,8	35,1	43,4	534	759	865	1069	552	614	675	736
			3,0	26,7	39,1	44,9	56,3	658	963	1106	1387				
750	2,42	686	2,0	31,6	45,6	52,2	65,0	778	1123	1286	1601	882	980	1078	1176
			3,0	33,9	49,4	56,7	70,9	835	1217	1397	1746				
1000	3,00	876	2,0	37,4	53,5	61,1	75,8	921	1318	1505	1867	1126	1251	1376	1501
			3,0	40,7	58,9	67,5	84,2	1002	1451	1663	2074				
1500	4,10	1239	3,0	52,2	75,0	85,7	106,5	1286	1847	2111	2623	1594	1771	1948	2125
			4,5	56,4	81,9	94,0	117,4	1389	2017	2315	2892				

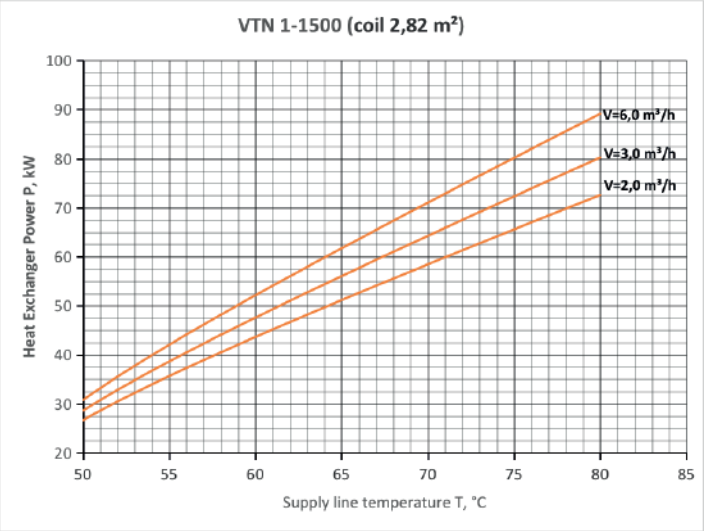
POWER OF THE UPPER HEAT EXCHANGER

The power of the upper heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

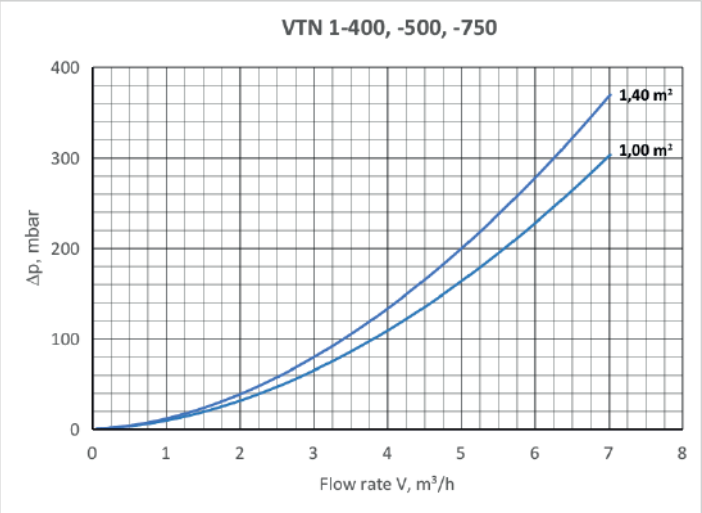


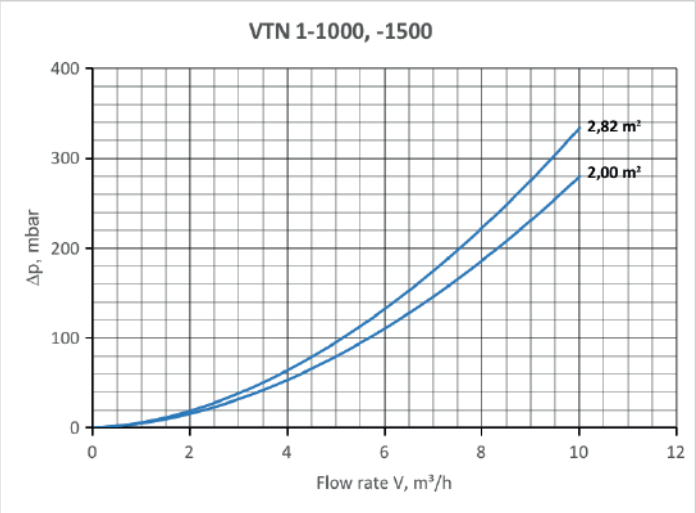






PRESSURE LOSSES OF THE UPPER HEAT EXCHANGER



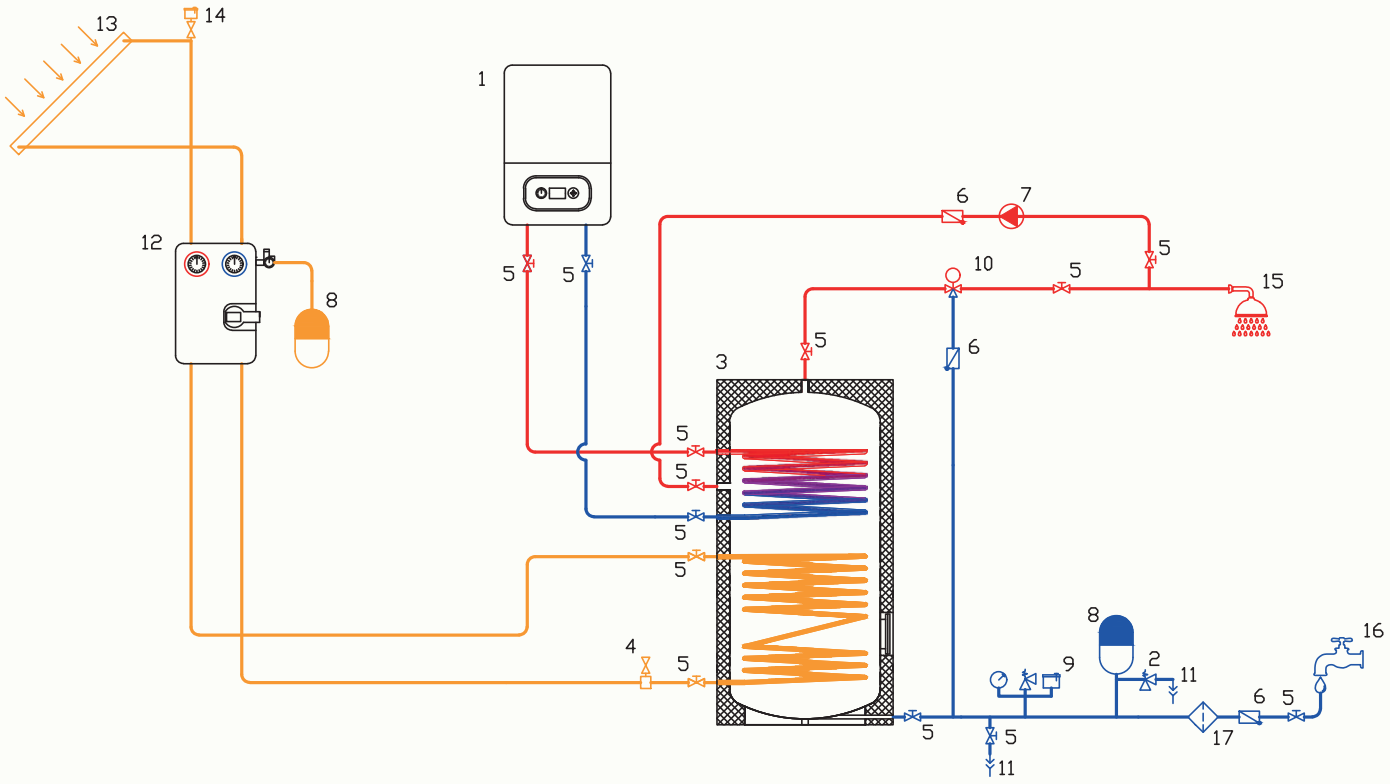


DHW OUTPUT (UPPER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW T, °C				l/h T, °C				l t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,00	177	1,0	13,6	19,6	22,5	28,1	335	483	554	692	227	252	278	303
			3,0	15,3	22,5	25,9	32,6	377	554	638	803				
500	1,00	191	1,0	13,6	19,6	22,5	28,1	335	483	554	692	245	272	300	327
			3,0	15,3	22,5	25,9	32,6	377	554	638	803				
750	1,40	308	1,0	17,7	25,4	29,1	36,1	436	626	717	889	397	441	485	529
			3,0	20,9	30,7	35,3	44,3	515	756	869	1091				
1000	2,00	398	1,0	23,0	32,5	37,0	45,7	567	800	911	1126	511	568	625	681
			3,0	28,8	42,0	48,3	60,5	709	1034	1190	1490				
1500	2,82	891	2,0	35,6	51,1	58,4	72,6	877	1259	1438	1788	1145	1273	1400	1527
			3,0	38,6	56,0	64,2	80,2	951	1379	1581	1975				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Gas/electric boiler	7	Circulation pump	13	Solar collector
2	Safety valve	8	Expansion tank	14	Solar circuit air vent
3	VTN 1 water heater	9	Safety group	15	Domestic hot water system
4	Automatic solar circuit air vent	10	Three-way mixing valve	16	Water supply system
5	Ball valve	11	Drainage	17	Mesh filter
6	Check valve	12	Circulation pump		

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed to heat water using a lower coiled heat exchanger from various sources, as well as to accumulate and store it for domestic hot water needs. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the heat exchanger, a fitting is provided for installing a tubular electric heater (TEN) .

Tank	
P	T
8 bar	95 °C
Coils	
P	T
10 bar	95 °C

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/ABS – 50 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

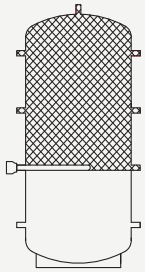
Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
120	124	0,51	2,7	A**/B
170	169	1,03	5,5	A**/C
200	214	1,03	5,5	A**/C
300	305	1,54	8,2	A**/C

*Energy efficiency class specified for PS/ABS insulation
** For insulation thickness of 100 mm.

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES

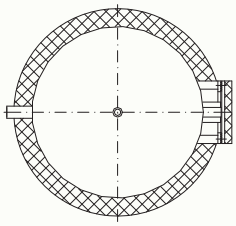


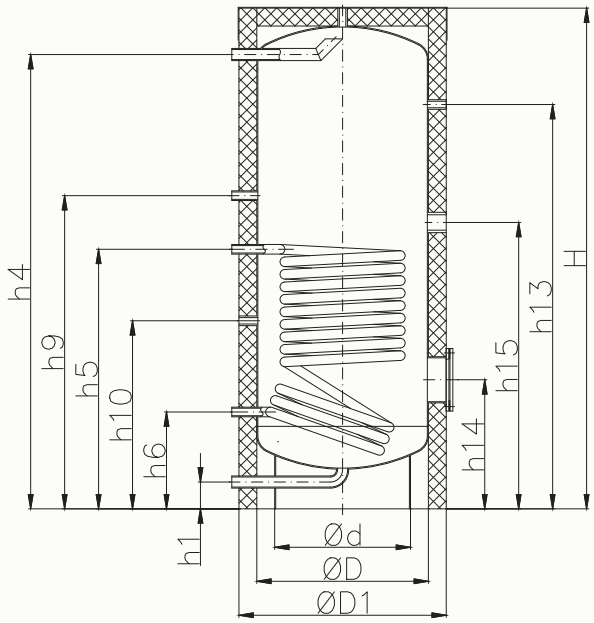
Electric heat elements

Model	Heating zone volume, liters	2 Kw	3 kW	4,5 kW
		1~220		3~400
		Heating time for ΔT=20°, minutes		
120	46	56	37	25
170	53	65	43	29
200	99	121	80	54
300	151	184	123	82

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



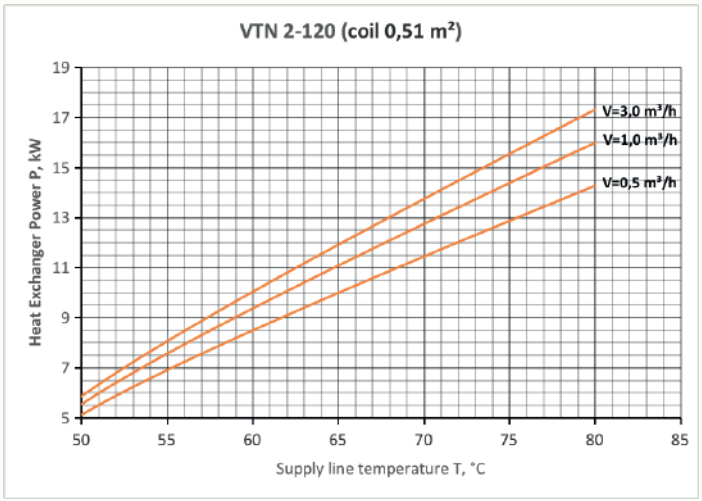


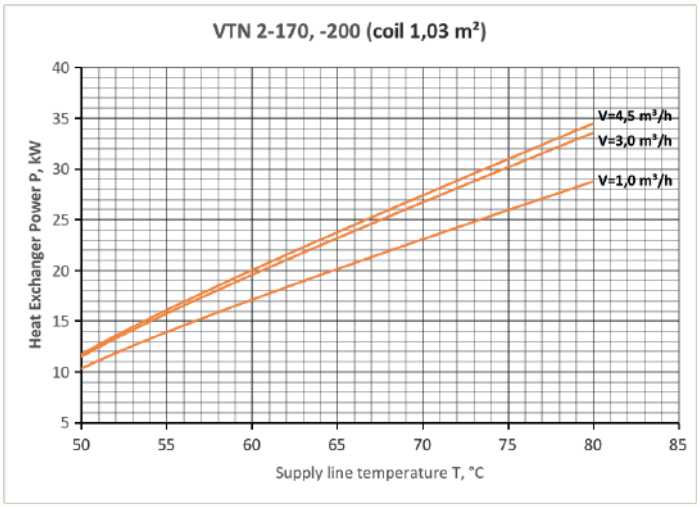
DESIGNATION	
H	Air vent
h1	Cold water supply, drainage
h4	Hot water outlet
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h9	Recirculation
h10-h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм
h15	Connection for electric heat element

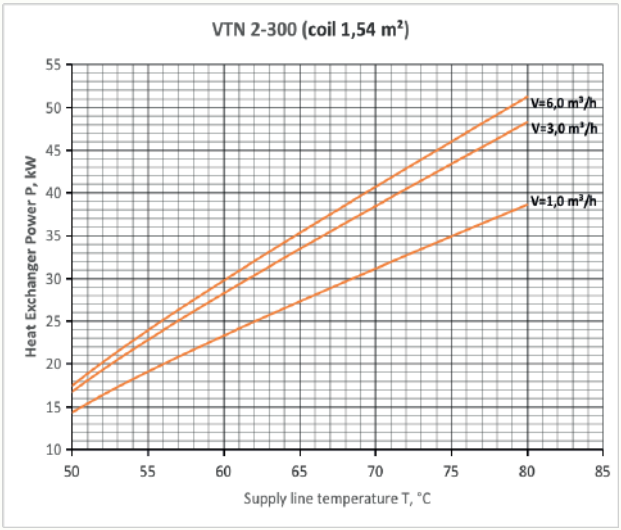
Model	Dimensions, mm				Connection sizes, mm								
	ØD1	ØD	Ød	H	h1	h4	h5	h6	h9	h10	h13	h14	h15
120	580	480	380	900	75	761	506	261	606	356	621	351	581
				1/2"	3/4"					1/2"			1 1/2"
170	580	480	380	1150	75	1011	716	261	816	566	871	351	791
				1/2"	3/4"					1/2"			1 1/2"
200	580	480	380	1410	75	1271	726	271	876	526	1131	361	801
				1/2"	1"		3/4"			1/2"			1 1/2"
300	580	480	380	1910	75	1771	936	271	1186	636	1631	361	1011
				1/2"	1"		3/4"			1/2"			1 1/2"

LOWER HEAT EXCHANGER POWER

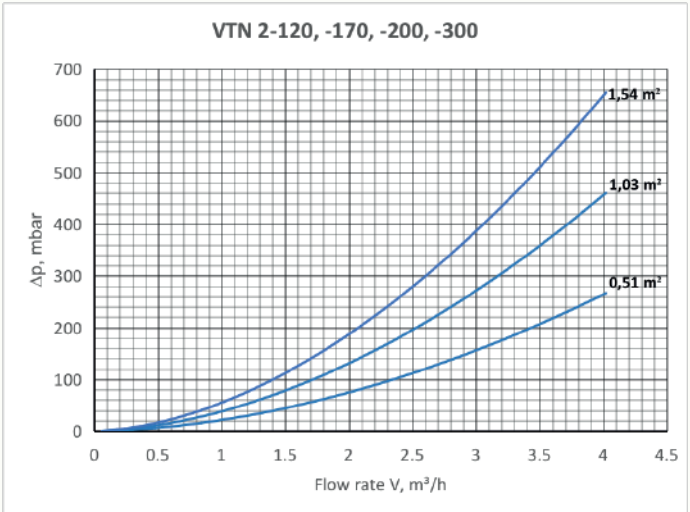
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.







PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

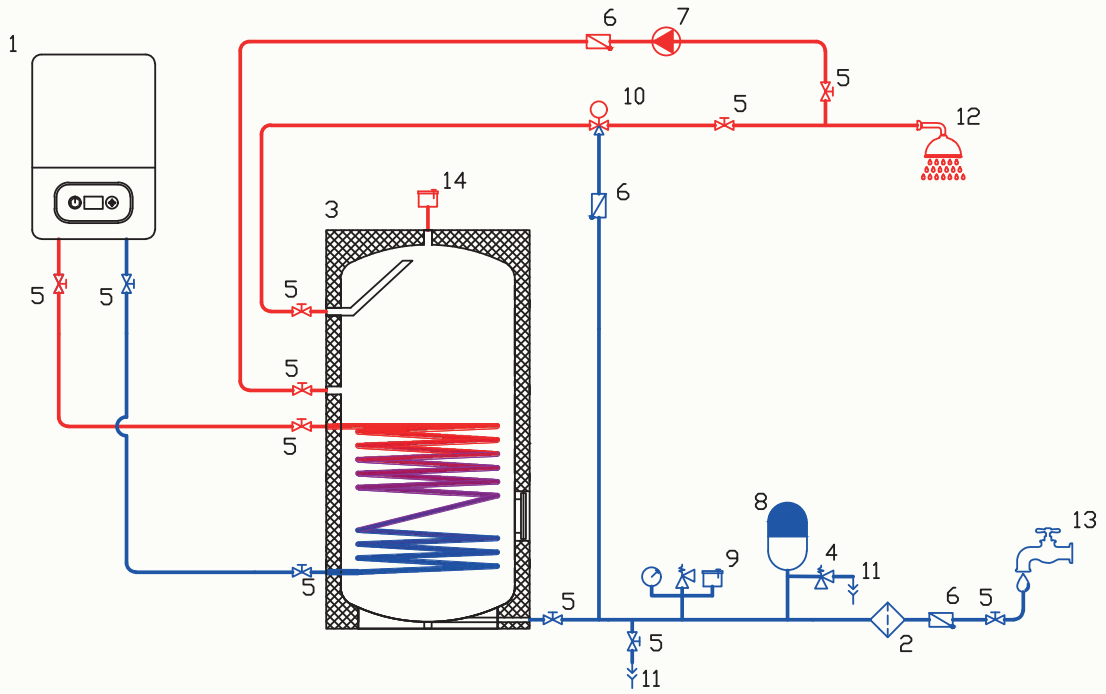


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature T into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to t, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
120	0,51	104	0,5	6,9	10,0	11,4	14,3	170	246	281	352	133	148	163	178
			1,0	7,5	11,1	12,7	16,0	185	273	313	394				
170	1,03	145	1,0	13,9	20,1	23,0	28,7	342	495	567	707	187	208	228	249
			3,0	15,7	23,1	26,7	33,5	387	569	658	825				
200	1,03	190	1,0	13,9	20,1	23,0	28,7	342	495	567	707	245	272	299	326
			3,0	15,7	23,1	26,7	33,5	387	569	658	825				
300	1,54	278	1,0	19,0	27,3	31,1	38,6	468	672	766	951	357	397	437	476
			3,0	22,8	33,4	38,4	48,2	562	823	946	1187				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Gas/electric boiler
2 Mesh filter
3 VTN 2 water heater
4 Safety valve
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Drainage
12 Domestic hot water system
13 Water supply system
14 Air vent

HEATING AND ACCUMULATION OF WATER FOR DHW NEEDS

TECHNICAL DESCRIPTION

The water heater is designed to heat water using a lower coiled heat exchanger from various sources, as well as to accumulate and store it for DHW. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank.

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation in a zippered PVC fabric casing

PU/PVC – 90 mm elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

Tank	
P	T
6 bar	95 °C
Coils	
P	T
10 bar	95 °C

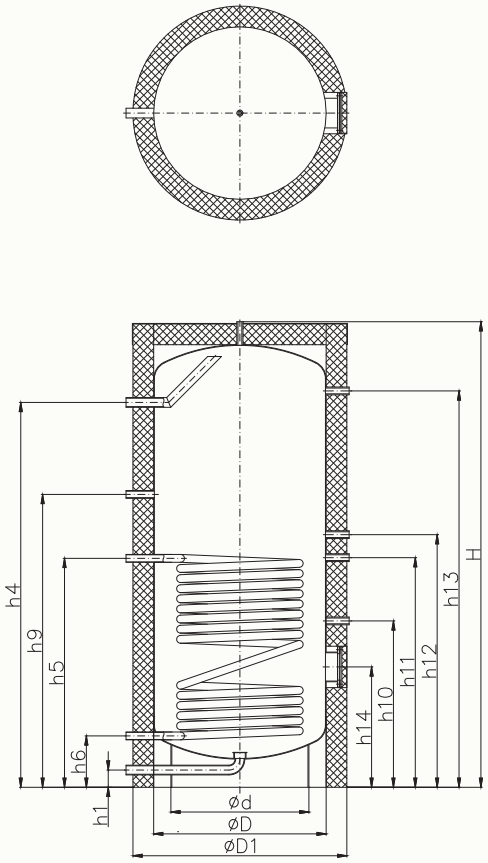
Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
400	413	1,48	11,0	B
500	483	1,84	14,0	B
750	773	2,42	18,0	C
1000	1008	3,00	29,0	C
1500	1449	4,10	37,0	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION



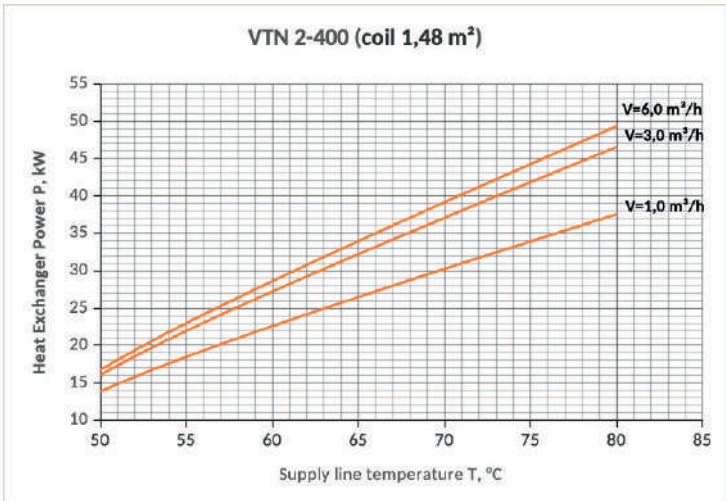
DESIGNATION

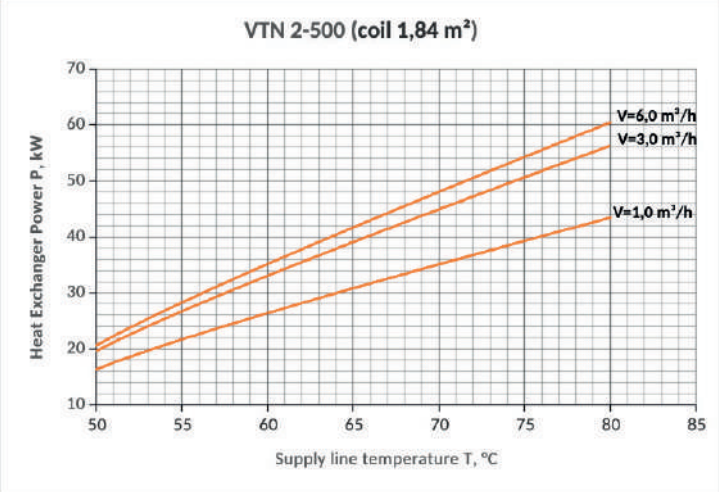
H	Air vent
h1	Cold water supply, drainage
h4	Hot water outlet
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h9	Recirculation
h10,h11,h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм

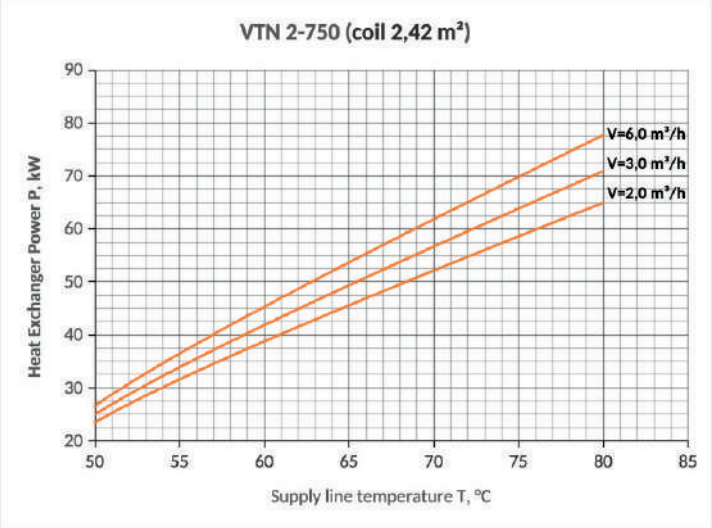
Model	Dimensions, mm				Connection sizes, mm									
	ØD1	ØD	Ød	H	h1	h4	h5	h6	h9	h10	h11	h12	h13	h14
400	800	600	450	1705	75	1381	821	181	1031	631	831	931	1431	481
				1/2"	1"				3/4"					
500	800	600	450	1955	75	1631	953	181	1231	681	956	1056	1681	481
				1/2"	1"				3/4"					
750	950	750	600	2025	75	1673	995	223	1273	723	998	1098	1723	523
				1/2"	1 1/4"		1"			3/4"				
1000	1050	850	700	2060	75	1690	990	240	1290	740	1015	1115	1740	540
				1/2"	1 1/4"				1"	3/4"				
1500	1200	1000	850	2200	75	1771	1121	321	1371	821	1096	1196	1821	621
				1/2"	1 1/2"		1 1/4"			3/4"				

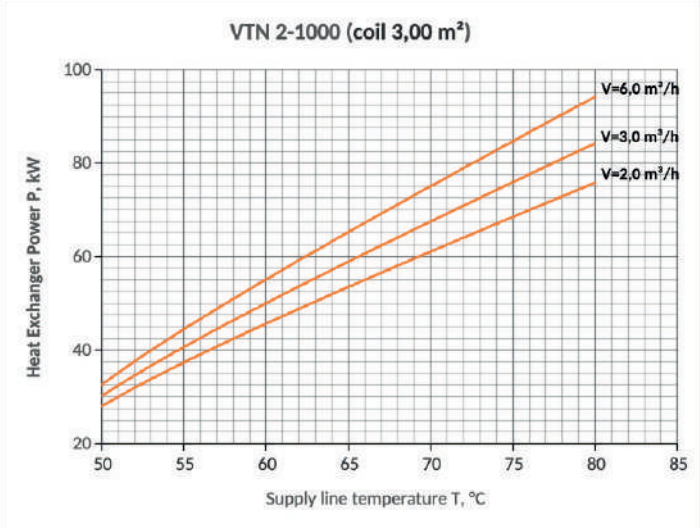
LOWER HEAT EXCHANGER POWER

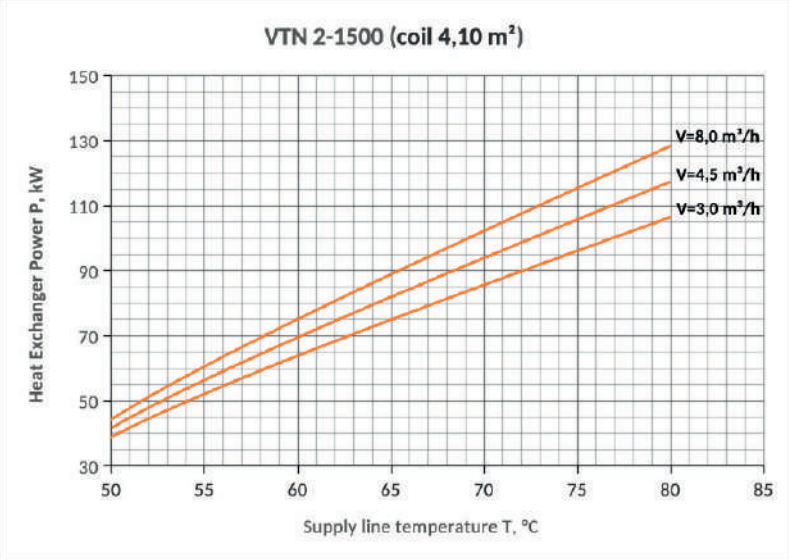
he power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.



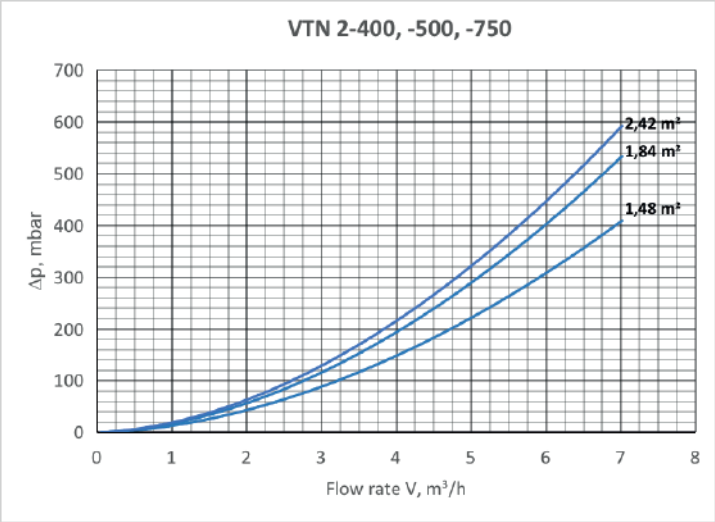


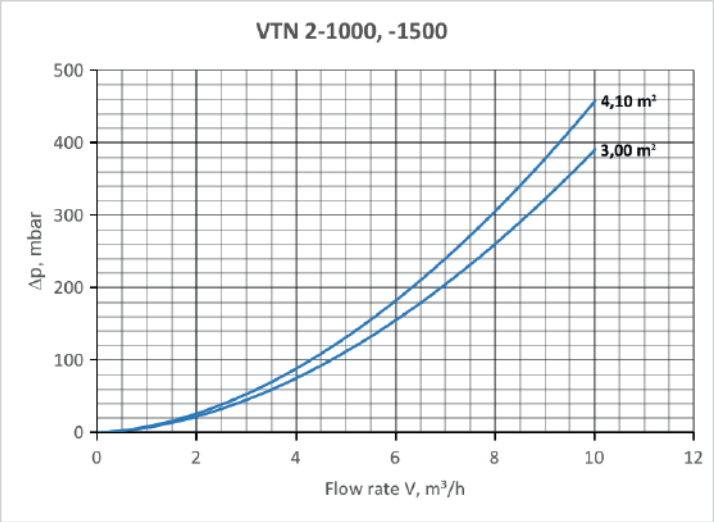






PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER



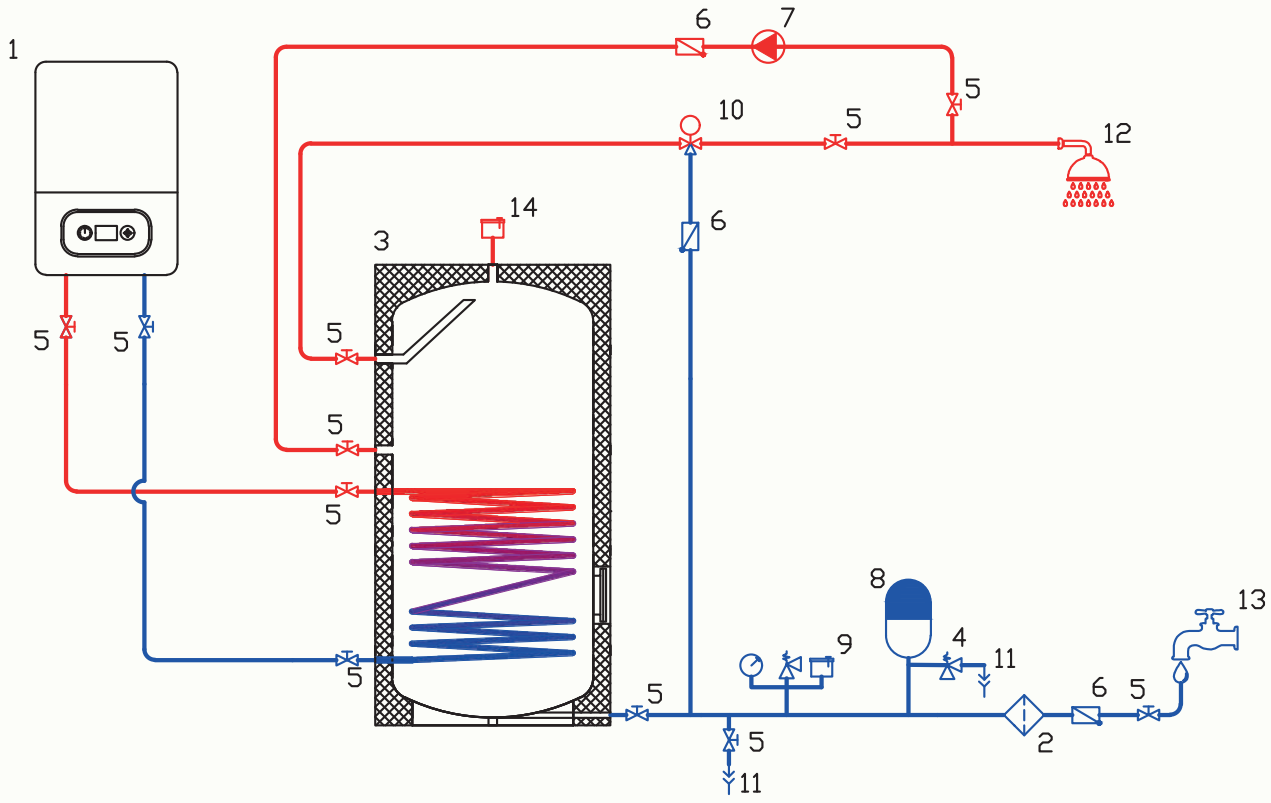


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	1,48	371	1,0	18,5	26,5	30,2	37,5	456	653	744	924	477	530	583	636
			3,0	22,0	32,2	37,1	46,5	542	793	914	1145				
500	1,84	438	1,0	21,7	30,8	35,1	43,4	534	759	865	1069	563	626	688	751
			3,0	26,7	39,1	44,9	56,3	658	963	1106	1387				
750	2,42	698	2,0	31,6	45,6	52,2	65,0	778	1123	1286	1601	897	997	1096	1196
			3,0	33,9	49,4	56,7	70,9	835	1217	1397	1746				
1000	3,00	897	2,0	37,4	53,5	61,1	75,8	921	1318	1505	1867	1154	1282	1410	1538
			3,0	40,7	58,9	67,5	84,2	1002	1451	1663	2074				
1500	4,10	1270	3,0	52,2	75,0	85,7	106,5	1286	1847	2111	2623	1632	1814	1995	2176
			4,5	56,4	81,9	94,0	117,4	1389	2017	2315	2892				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Gas/electric boiler	6	Check valve	11	Drainage
2	Mesh filter	7	Circulation pump	12	Domestic hot water system
3	VTN 2 water heater	8	Expansion tank	13	Water supply system
4	Safety valve	9	Safety group	14	Air vent
5	Ball valve	10	Three-way mixing valve		

HEATING WATER FROM A HEAT PUMP AND ACCUMULATION FOR DHW

TECHNICAL DESCRIPTION

Due to the increased heat exchanger area, the water heater is ideally suited for operation with a heat pump. The enlarged heat exchanger area also allows connection to high-power sources, ensuring high DHW output with relatively small tank volumes. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank. Above the heat exchanger, a fitting is provided for installing an electric heat element.

Tank	
P	T
8 bar	95 °C
Coil	
P	T
10 bar	95 °C

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/ABS – 50 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
120	124	0.73	4.0	A**/B
170	169	1.46	7.9	A**/C
200	214	2.20	11.8	A**/C
300	305	2.90	15.6	A**/C

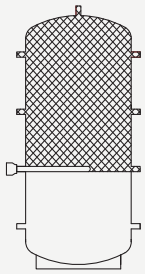
*Energy efficiency class specified for PS/ABS insulation

** For insulation thickness of 100 mm.

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

ACCESSORIES

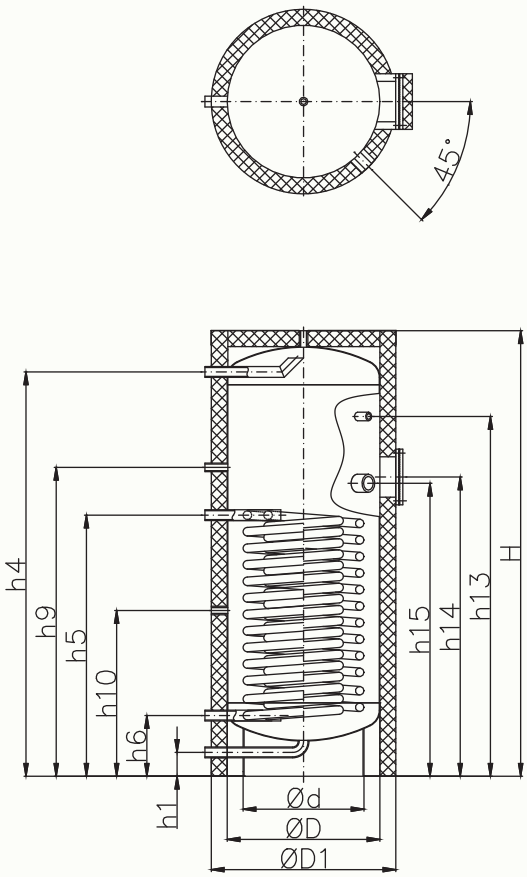


Electric heat elements

Model	Heating zone volume, liters	2 Kw	3 kW	4,5 kW
		1~220		3~400
		Heating time for ΔT=20°, minutes		
120	62	76	50	34
170	70	85	57	38
200	77	94	63	42
300	129	157	105	70

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION

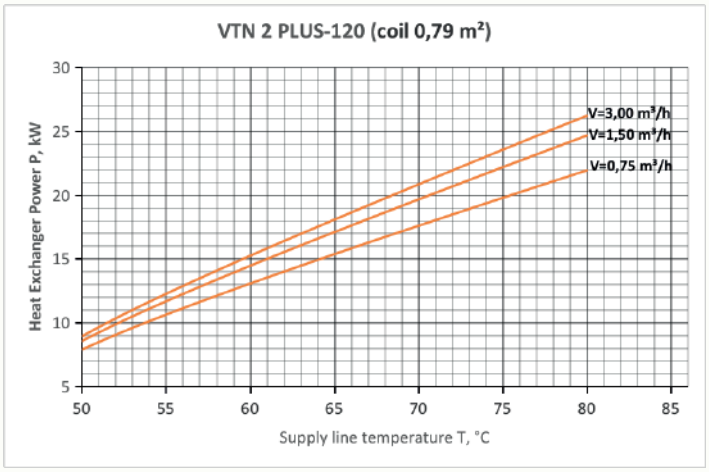


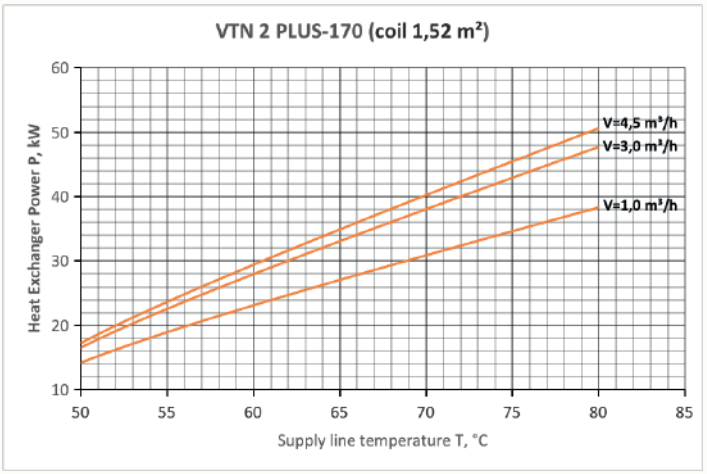
DESIGNATION	
H	Air vent
h1	Cold water supply, drainage
h4	Hot water outlet
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h9	Recirculation
h10-h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм
h15	Connection for electric heat element

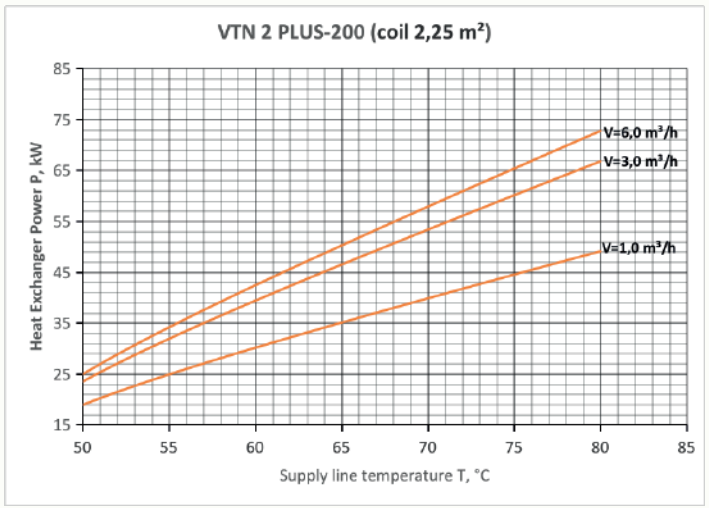
Model	Dimensions, mm				Connection sizes, mm								
	ØD1	ØD	Ød	H	h1	h4	h5	h6	h9	h10	h13	h14	h15
120	580	480	380	900	75	761	391	181	491	291	621	511	491
				1/2"	3/4"	1"			3/4"	1/2"	1/2"		1 1/2"
170	580	480	380	1150	75	1011	601	181	701	401	871	721	721
				1/2"	3/4"	1"			3/4"	1/2"	1/2"		1 1/2"
200	580	480	380	1410	75	1271	821	191	971	521	1131	941	921
				1/2"	1"				3/4"	1/2"	1/2"		1 1/2"
300	580	480	380	1910	75	1771	1031	191	1281	631	1631	1151	1131
				1/2"	1"				3/4"	1/2"	1/2"		1 1/2"

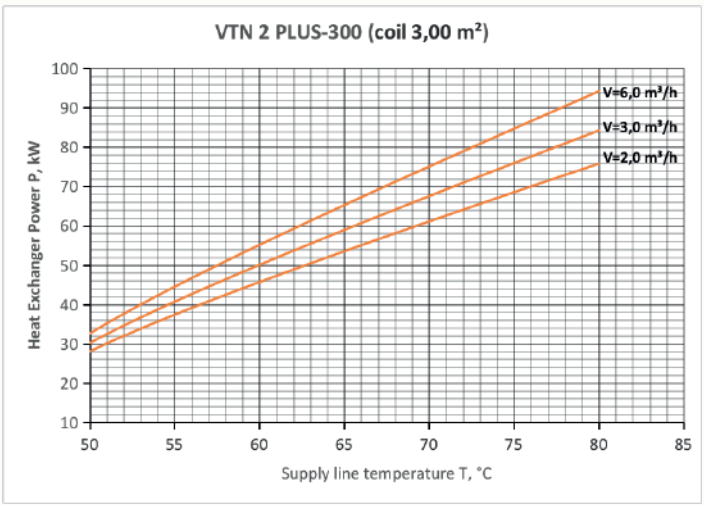
LOWER HEAT EXCHANGER POWER

The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.

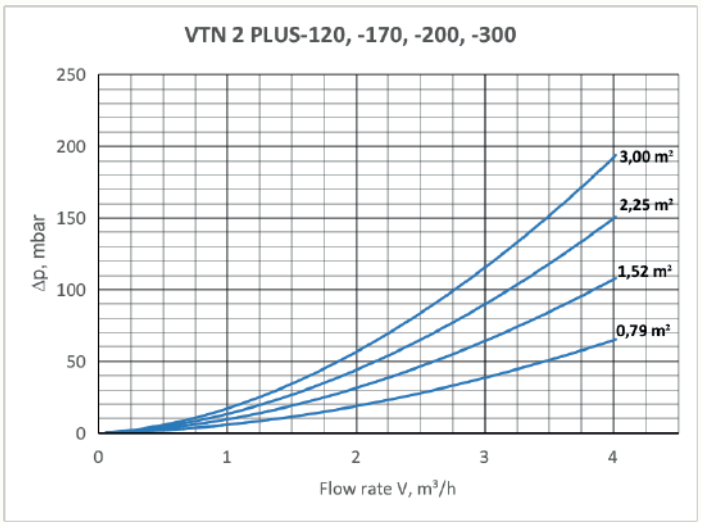








PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

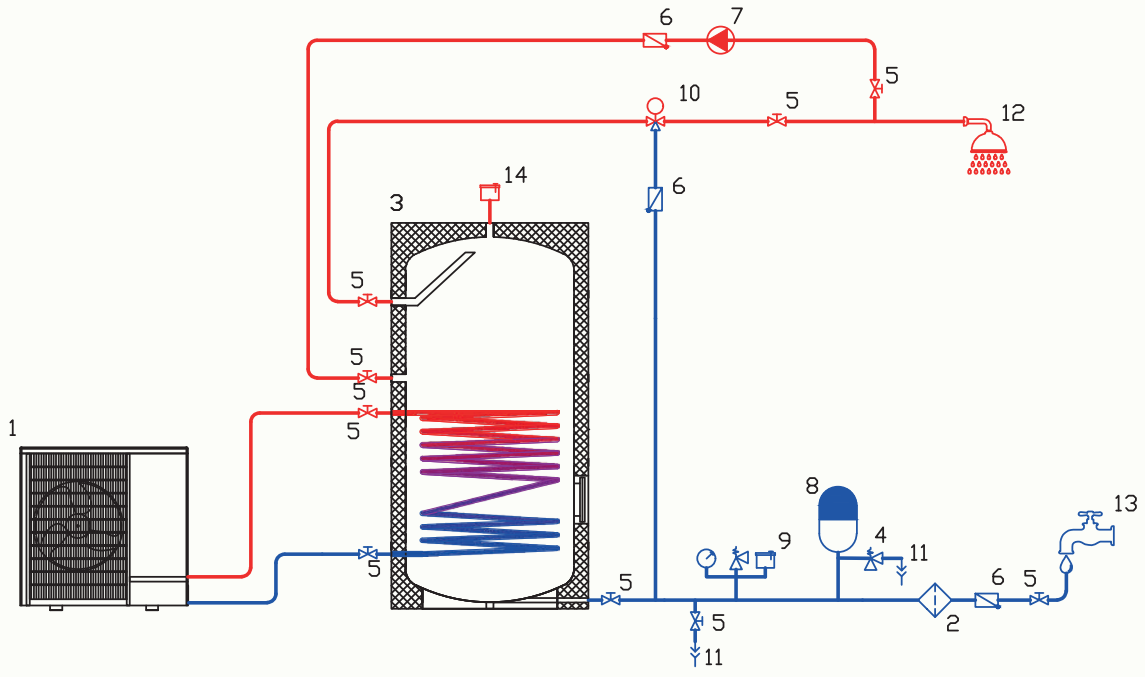


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
120	0,79	102	0,8	10,6	15,3	17,6	21,9	261	377	433	539	131	145	160	175
			1,5	11,6	17,1	19,6	24,7	286	421	483	608				
170	1,52	142	1,0	18,9	27,0	30,8	38,2	466	665	759	941	182	203	223	243
			3,0	22,5	33,0	38,0	47,7	554	813	936	1175				
200	2,25	182	1,0	24,9	35,0	39,8	49,1	613	862	980	1209	234	260	286	312
			3,0	31,9	46,5	53,3	66,8	786	1145	1313	1645				
300	3,00	268	2,0	37,4	53,5	61,1	75,8	921	1318	1505	1867	345	383	421	460
			3,0	40,7	58,9	67,5	84,2	1002	1451	1663	2074				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Heat pump
2 Mesh filter
3 VTN 2 Plus water heater
4 Safety valve
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Drainage
12 Domestic hot water system
13 Water supply system

HEATING WATER FROM A HEAT PUMP AND ACCUMULATION FOR DHW NEEDS

TECHNICAL DESCRIPTION

Due to the increased heat exchanger area, the water heater is ideally suited for operation with a heat pump. The enlarged heat exchanger area also allows connection to high-power sources, ensuring high DHW output with relatively small tank volumes. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank.

Tank	
P	T
6 bar	95 °C
Coil	
P	T
10 bar	95 °C

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

HEAT EXCHANGERS

The heat exchangers are made of AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation in a zippered PVC fabric casing

PU/PVC – 90 mm elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

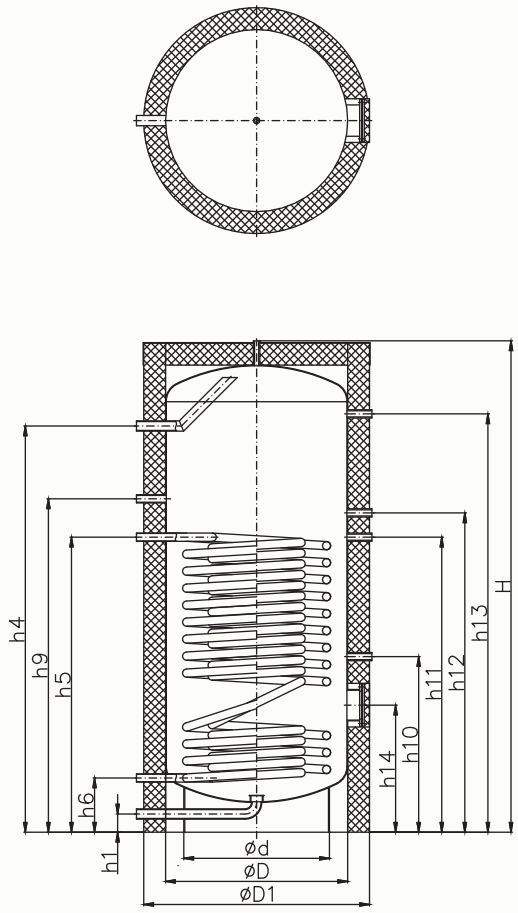
Model	Tank volume, l	Lower coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
400	413	3.85	28	A**/B
500	483	4.10	30	A**/C
750	773	4.94	33	A**/C
1000	1008	5.1	47	A**/C
1500	1449	6.35	59	A**/C

*Energy efficiency class specified for PS/ABS insulation
** For insulation thickness of 100 mm.

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION



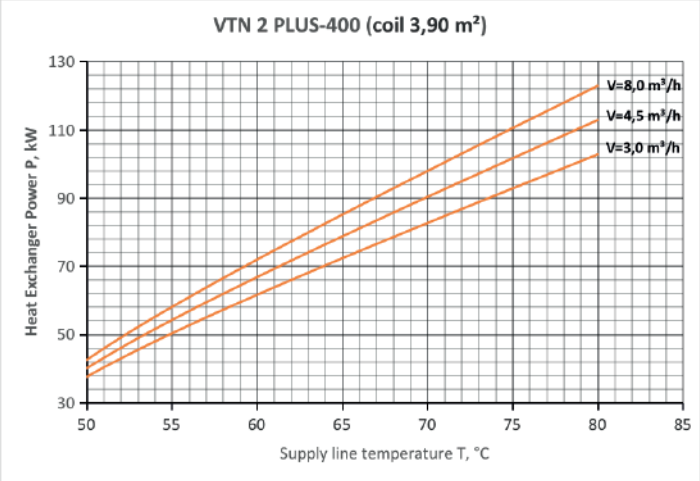
DESIGNATION

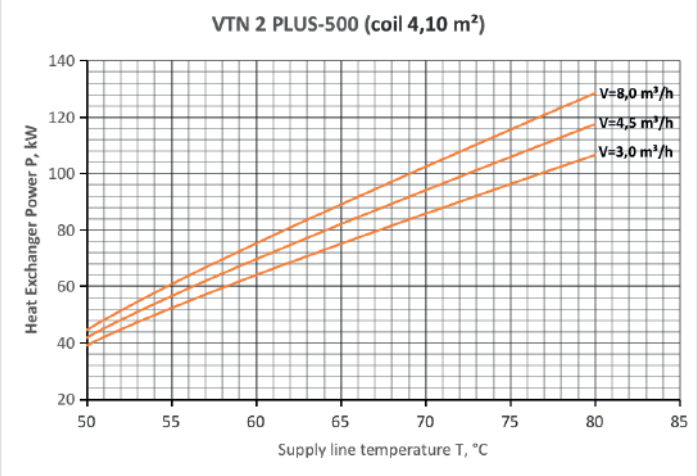
H	Air vent
h1	Cold water supply, drainage
h4	Hot water outlet
h5-h6	Supply and return mains of the lower heat exchanger (Coil 1)
h9	Recirculation
h10-h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм

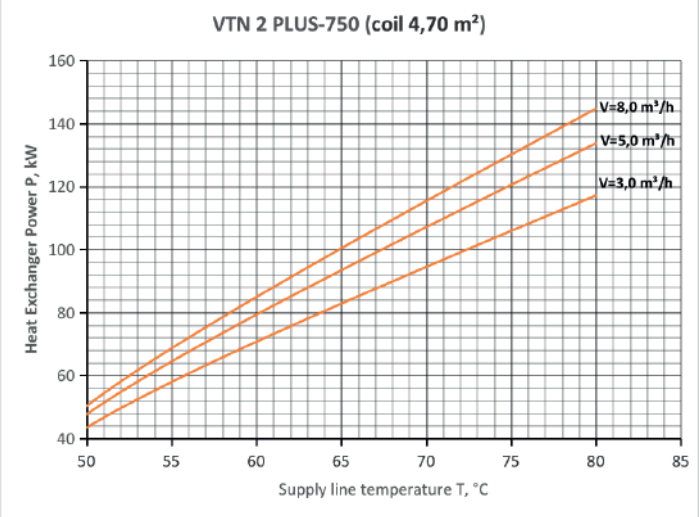
Model	Dimensions, mm				Connection sizes, mm									
	ØD1	ØD	Ød	H	h1	h4	h5	h6	h9	h10	h11	h12	h13	h14
400	800	600	450	1705	75	1381	1173	181	1281	631	1156	-	1431	481
				1/2"	1"				3/4"					
500	800	600	450	1955	75	1631	1217	181	1331	681	1217	1317	1681	481
				1/2"	1"				3/4"					
750	950	750	600	2025	75	1673	1215	223	1373	723	1215	1315	1723	523
				1/2"	1 1/4"		1"		3/4"					
1000	1050	850	700	2060	75	1690	1140	240	1390	740	1140	1240	1740	540
				1/2"	1 1/4"				1"	3/4"				
1500	1200	1000	850	2200	75	1771	1171	321	1471	821	1171	1271	1821	621
				1/2"	1 1/2"		1 1/4"			3/4"				

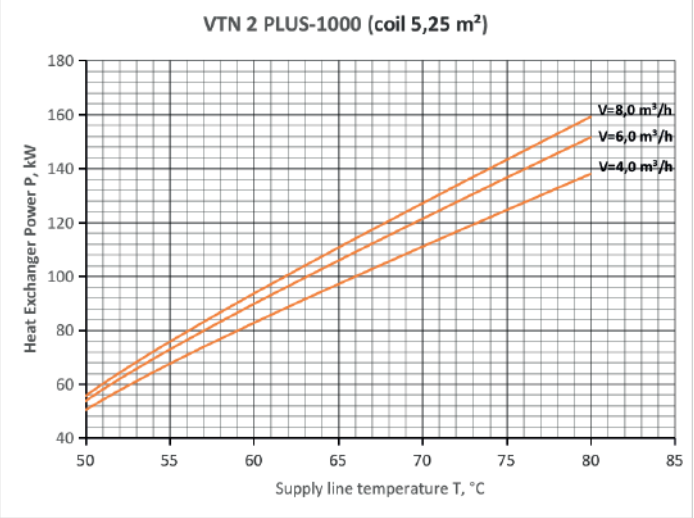
LOWER HEAT EXCHANGER POWER

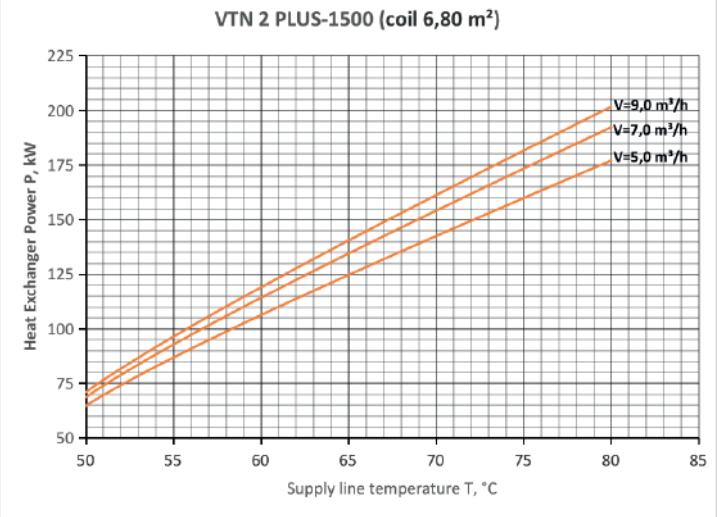
The power of the lower heat exchanger P, kW, is presented as dependent on the heat transfer fluid temperature T, °C, of the supply line to the heat exchanger at a specific circulation rate of the heat transfer fluid V, m³/h, in the latter.



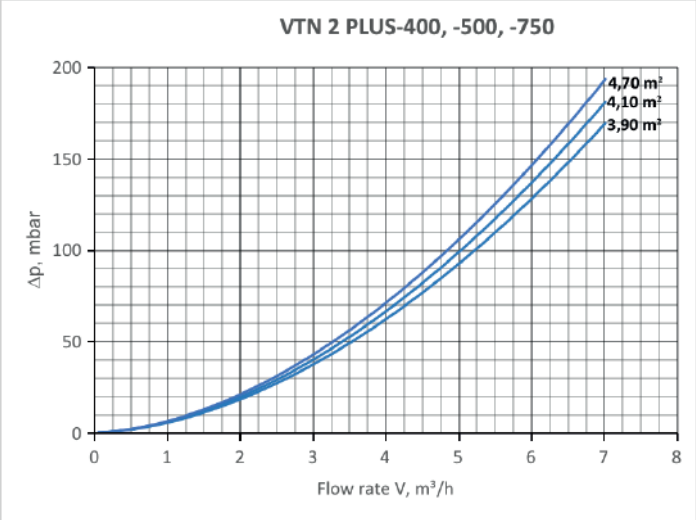


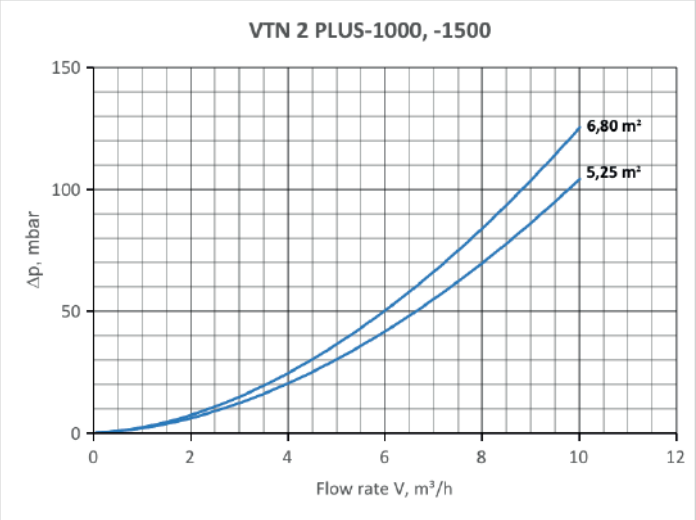






PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER



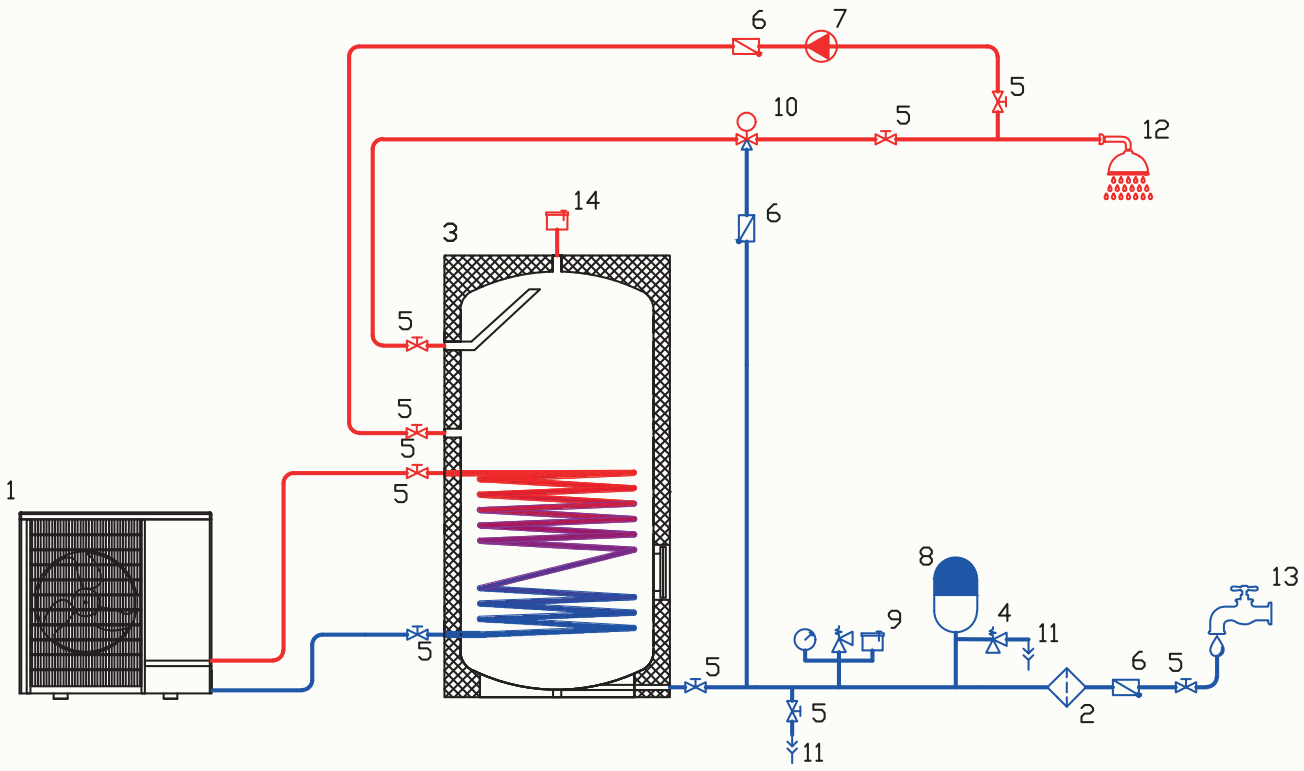


DHW OUTPUT (LOWER HEAT EXCHANGER)

Model	Area of the lower coil	Usable volume of the tank	Circulation of the heat transfer fluid in the lower coil	Power of the lower coil at the supply heat transfer fluid temperature T, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption				Maximum DHW output at constant continuous load (heating DHW from 10 to 45°C) at the supply heat transfer fluid temperature **T** into the lower coil, with the heating source activated (lower coil only)				Maximum DHW output at 45°C with the tank heated to **t**, with the heating sources turned off			
	m²	l	m³/h	kW				l/h				l			
				T, °C				T, °C				t, °C			
				55	65	70	80	55	65	70	80	55	60	65	70
400	3,90	350	3,0	50,2	72,2	82,6	102,7	1236	1778	2034	2530	451	501	551	601
			4,5	54,1	78,6	90,2	112,7	1333	1936	2222	2776				
500	4,10	418	3,0	52,2	75,0	85,7	106,5	1286	1847	2111	2623	538	598	657	717
			4,5	56,4	81,9	94,0	117,4	1389	2017	2315	2892				
750	4,70	678	3,0	57,9	82,8	94,4	117,1	1426	2039	2325	2884	871	968	1065	1162
			5,0	64,4	93,4	107,1	133,1	1586	2300	2638	3278				
1000	5,25	873	4,0	67,4	97,0	110,9	137,9	1660	2389	2732	3397	1123	1247	1372	1497
			6,0	72,7	105,7	121,5	151,5	1791	2603	2993	3732				
1500	6,80	1241	5,0	86,7	124,5	142,3	176,8	2135	3067	3505	4355	1595	1772	1950	2127
			7,0	92,6	134,3	153,9	192,1	2281	3308	3791	4732				

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Heat pump	6	Check valve	11	Drainage
2	Mesh filter	7	Circulation pump	12	Domestic hot water system
3	VTN 2 Plus water heater	8	Expansion tank	13	Water supply system
4	Safety valve	9	Safety group		
5	Ball valve	10	Three-way mixing valve		

ACCUMULATION OF PREHEATED WATER FOR DHW

TECHNICAL DESCRIPTION

The DHW thermal storage tank is designed for the accumulation and storage of water preheated in an external heat exchanger for DHW. The tank's design includes a flanged inspection hatch with a cover, intended for periodic service maintenance of the tank.

MATERIAL

The tank is made of AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

WARRANTY

5 years

Tank	
P	T
6 bar	95 °C

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation in a zippered PVC fabric casing

PU/PVC – 90 mm elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm polyester insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite polystyrene insulation in an ABS plastic casing. Premium-class insulation – complies with all requirements of the **ErP 2009/125/EC Directive**

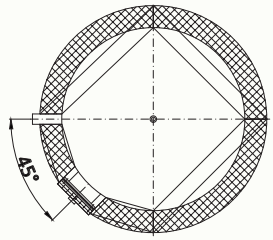
Model	Tank volume, l	Energy efficiency class of insulation*
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

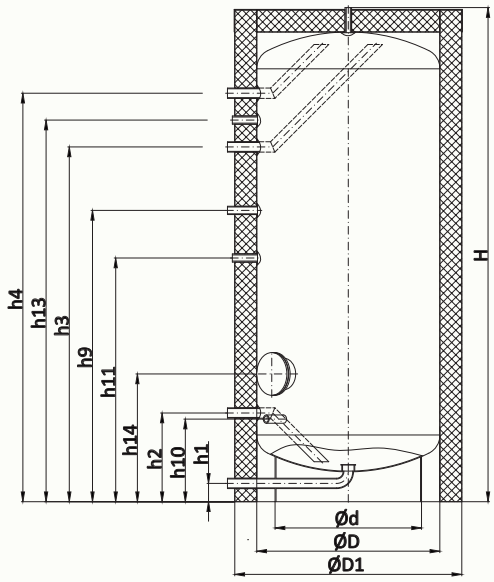
*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION





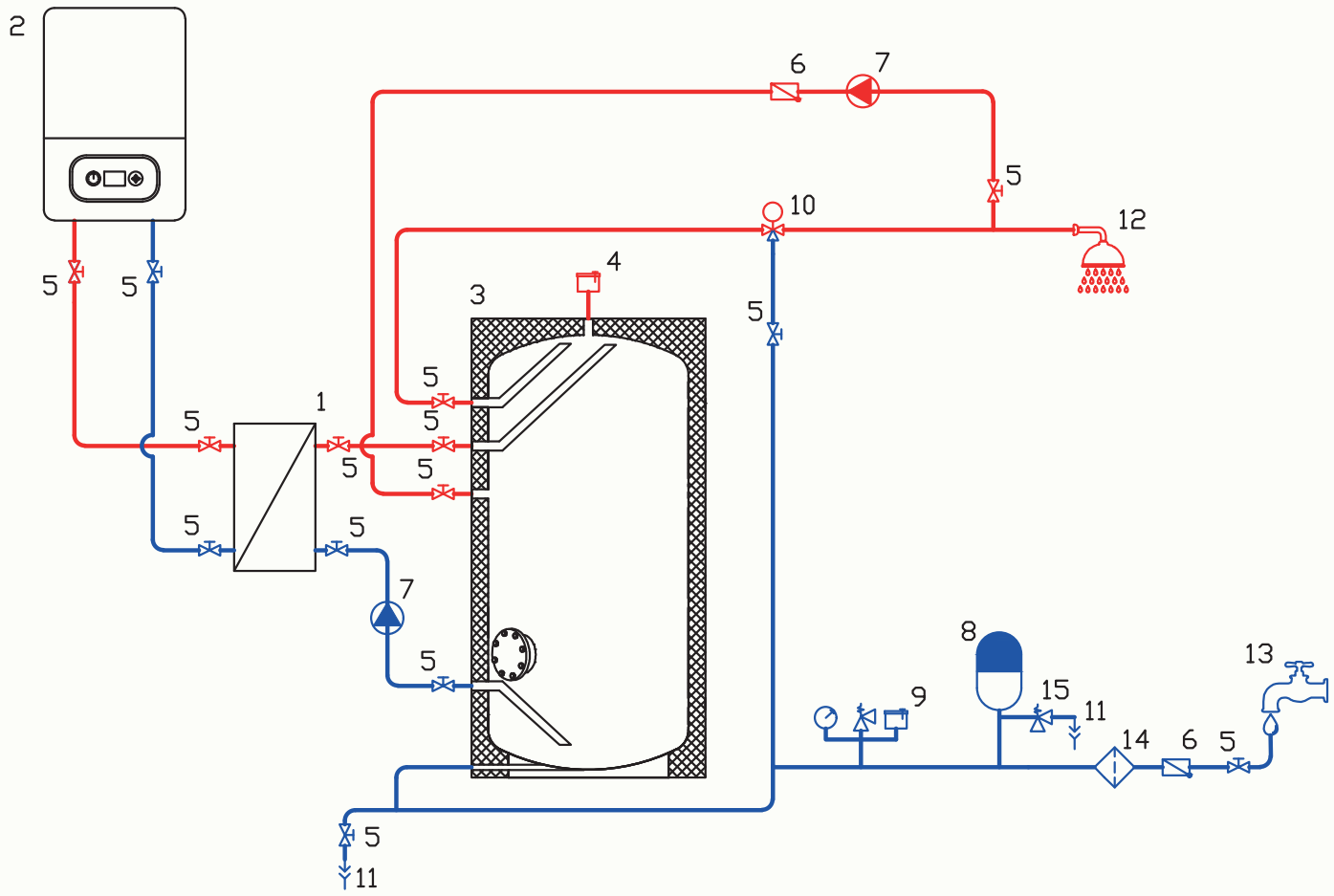
DESIGNATION

H	Air vent
h1	Cold water supply, drainage
h2	Return line of the external heat exchanger
h3	Supply line of the external heat exchanger
h4	Hot water outlet
h9	Recirculation
h10-h13	Connections for control, regulation, and measuring equipment
h14	Flange, Ø115 мм

Model	Dimensions, mm				Connection sizes, mm								
	ØD1	ØD	Ød	H	h1	h2	h3	h4	h9	h10	h11	h13	h14
400	800	600	450	1705	75	321	1161	1381	1001	296	856	1271	481
				1/2''	1''				3/4''				
500	800	600	450	1955	75	321	1411	1631	1131	296	956	1521	481
				1/2''	1''				3/4''				
750	950	750	600	2025	75	363	1453	1673	1173	338	998	1563	523
				1/2''	1 1/4''				1''	3/4''			
1000	1050	850	700	2060	75	380	1470	1690	1190	355	1015	1580	540
				1/2''	1 1/4''				1''	3/4''			
1500	1200	1000	850	2200	75	461	1551	1771	1271	436	1096	1661	621
				1/2''	1 1/2''				1 1/4''	3/4''			
2000	1400	1200	1000	2300	75	511	1601	1821	1321	486	1146	1711	671
				1/2''	1 1/2''				1 1/4''	3/4''			
3000	1600	1400	1150	2410	75	566	1656	1876	1376	541	1201	1766	726
				1/2''	1 1/2''				1 1/4''	3/4''			

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	External plate heat exchanger	6	Check valve	11	Safety valve
2	Gas/electric boiler	7	Circulation pump	12	Domestic hot water system
3	VTN 3 water heater	8	розширювальний бак	13	Water supply system
4	Boiler safety group	9	Water supply system safety group	14	Mesh filter
5	Ball valve	10	Three-way mixing valve	15	Drainage

HEATING AND ACCUMULATION OF WATER FOR DHW

TECHNICAL DESCRIPTION

The calorifier is designed to heat water via a lower coiled heat exchanger from various sources, while providing accumulation and storage for DHW. The tank features a flanged inspection port with a sealed cover for periodic maintenance access. A fitting above the heat exchanger is provided to install an electric heating element. Two magnesium anodes ensure corrosion protection.

Tank	
P	T
10 bar	95 °C
Coil	
P	T
6 bar	95 °C

MATERIALS

Tank and heat exchanger are constructed from cold-rolled carbon steel with an internal double-layer enamel coating, baked at 860°C by DIN 4753 standards.

WARRANTY

2 years

THERMAL INSULATION

Rigid polyurethane foam insulation, 50 mm thick, encased in a zippered "sky" finish casing, compliant with all requirements of the **ErP 2009/125/EC Directive.**

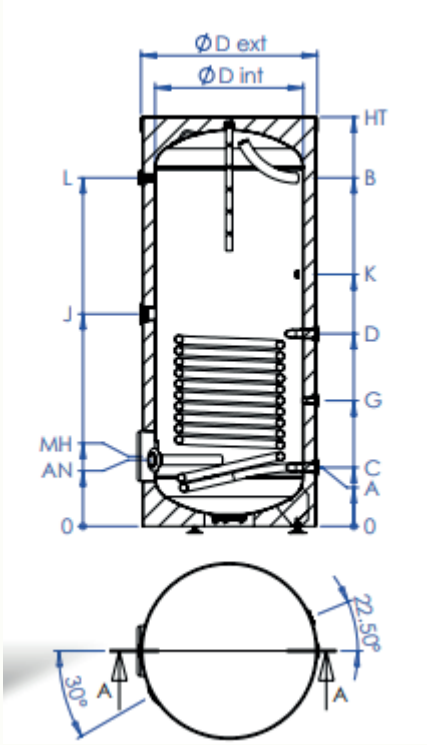
Model	Tank volume, l	Coil		Energy efficiency class of insulation*
		S coil, m²	V coil, l	
160	155	0,85	5,10	B
200	191	0,95	5,74	B
300	289	1,48	8,93	B
400	386	1,65	10,21	C
500	452	2,06	12,44	C

ACCESSORIES

Electric heat elements

Model	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW
	1~220		3~400			
160	✓	✓	✓	✓	✓	-
200	✓	✓	✓	✓	✓	-
300	✓	✓	✓	✓	✓	-
400	✓	✓	✓	✓	✓	✓
500	✓	✓	✓	✓	✓	✓

DIMENSIONS AND CONNECTION



DESIGNATION

HT	Height
MH	Manhole
AN	Magnesium anode
A	Cold water inlet
B	Hot water outlet
C	Lower heat exchanger outlet
D	Lower heat exchanger inlet
G	Sensor pocket 1
J	Heating element
K	Recirculation
L	Thermometer

Model	Dimensions, mm			Connection sizes, mm									
	ØD ext	ØD int	HT	A	B	C	D	G	J	K	L	MH	AN
160	600	500	1035	242	787	242	602	422	652	605	787	287	272
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
200	600	500	1230	242	982	242	647	445	694	735	982	287	272
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
300	600	500	1760	242	1512	242	872	557	1012	1088	1512	287	272
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
400	700	600	1655	238	1408	238	778	508	858	1018	1408	283	268
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
500	700	600	1900	238	1658	238	913	576	993	1184	1658	283	268
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	

DHW OUTPUT

Model	Area of the lower coi	Usable volume of the tank	Coil power at a supply heat transfer fluid temperature of 80°C (Δ20°C) into the coil, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption	Maximum DHW output under continuous steady load (heating DHW from 10°C to 45°C) with a heat transfer fluid supply temperature of 80°C (ΔT 20°C) to the coil, heating source activated	Pressure loss of the heat transfer fluid
	m²	l	kW	l/h	mbar
160	0,85	155	28	639	18
200	0,95	191	32	786	19
300	1,48	289	41	885	24
400	1,65	386	48	1106	28
500	2,06	452	60	1278	62

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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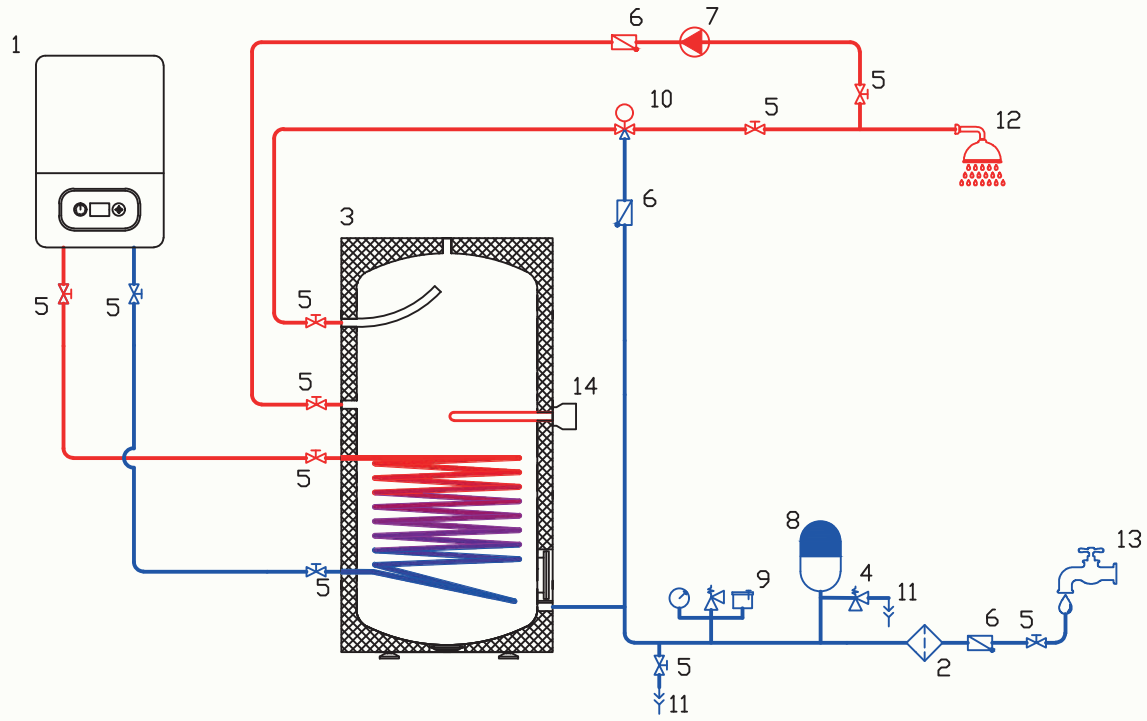


DESIGNATION

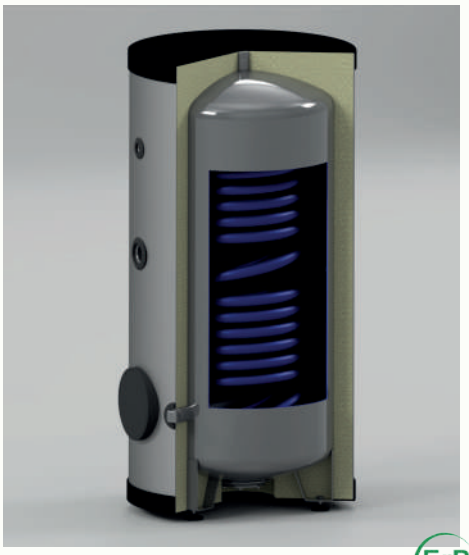
1	Heat pump	6	Check valve	11	Drainage
2	Mesh filter	7	Circulation pump	12	Domestic hot water system
3	VTE 1 water heater	8	Expansion tank	13	Water supply system
4	Safety valve	9	Safety group	14	Electric heat element
5	Ball valve	10	Three-way mixing valve		

HEATING WATER VIA HEAT PUMP AND ACCUMULATION OF WATER FOR DHW

TECHNICAL DESCRIPTION

The calorifier's enlarged heat exchanger surface area makes it ideally suited for integration with heat pumps. Additionally, the increased heat exchanger area enables connection to high-capacity heat sources, delivering exceptional DHW output despite the relatively compact tank volume. The tank features a flanged inspection port with a sealed cover for periodic maintenance access. A fitting above the heat exchanger is provided to install an electric heating element. Two magnesium anodes ensure corrosion protection.

Tank	
P	T
10 bar	95 °C
Coil	
P	T
6 bar	95 °C



MATERIALS

Tank and heat exchanger are constructed from cold-rolled carbon steel with an internal double-layer enamel coating, baked at 860°C by DIN 4753 standards.

WARRANTY

2 years

THERMAL INSULATION

Rigid polyurethane foam insulation, 50 mm thick, encased in a zippered "sky" finish casing, compliant with all requirements of the **ErP 2009/125/EC Directive.**

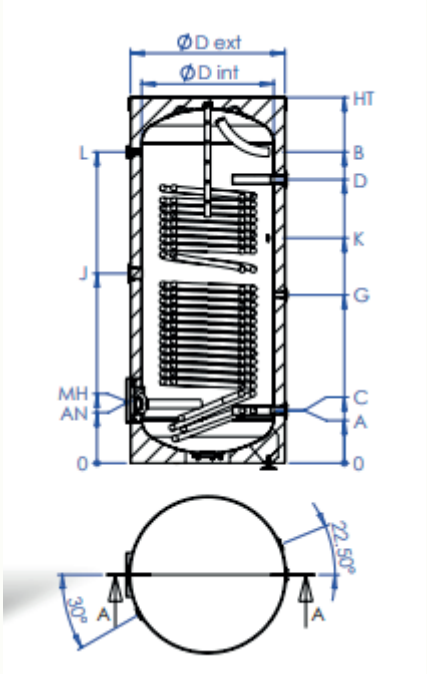
Model	Tank volume, l	Coil		Energy efficiency class of insulation*
		S coil, m²	V coil, l	
200	181	2,62	13,0	B
300	276	3,77	18,0	B
500	429	6,0	29,0	C

ACCESSORIES

Electric heat elements

Model	2 Kw	3 kW	4,5 kW	6 kW	7,5 kW
	1~220		3~400		
	Heating time for ΔT=20°, minutes				
200	✓	✓	✓	-	-
300	✓	✓	✓	-	-
500	✓	✓	✓	✓	✓

DIMENSIONS AND CONNECTION



DESIGNATION

HT	Height	D	Lower heat exchanger inlet
MH	Manhole	G	Sensor pocket 1
AN	Magnesium anode	J	Heating element
A	Cold water inlet	K	Recirculation
B	Hot water outlet	L	Thermometer
C	Lower heat exchanger outlet		

Model	Dimensions, mm			Connection sizes, mm									
	ØD ext	ØD int	HT	A	B	C	D	G	J	K	L	MH	AN
200	600	500	1230	242	982	242	982	612	694	735	982	287	272
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
300	600	500	1760	242	1512	242	1222	732	1012	1088	1512	287	272
				1"				1/2"	1 1/2"	3/4"	1/2"	Ø180	
500	700	600	1900	238	1658	238	1488	863	993	1184	1658	283	268
				1"	3/4"	1"		1/2"	1 1/2"	1/2"		Ø180	

DHW OUTPUT

Model	Area of the lower coil	Usable volume of the tank	Coil power at a supply heat transfer fluid temperature of 80°C (Δ20°C) into the coil, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption	Maximum DHW output under continuous steady load (heating DHW from 10°C to 45°C) with a heat transfer fluid supply temperature of 80°C (ΔT 20°C) to the coil, heating source activated	Pressure loss of the heat transfer fluid
	m²	l	kW	l/h	mbar
200	2,62	181	63	1545	56
300	3,77	276	90	2223	117
500	6,00	429	144	3538	332

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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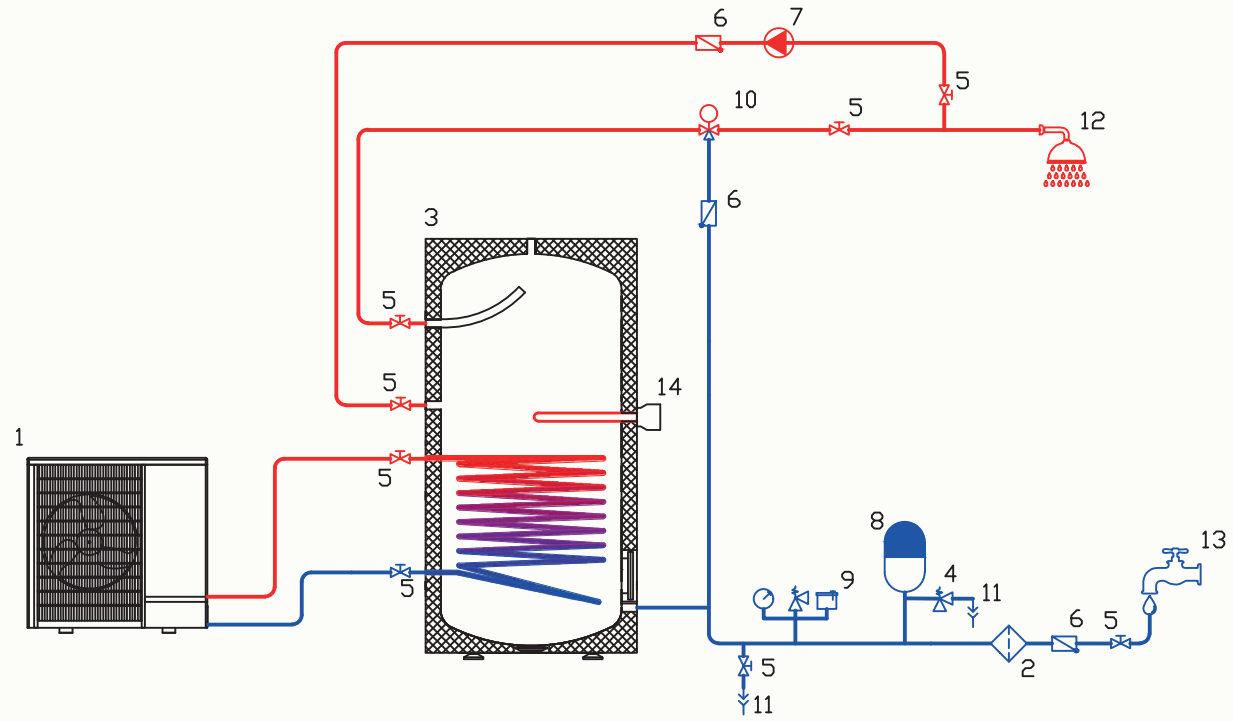


DESIGNATION

1	Heat pump	6	Check valve	11	Drainage
2	Mesh filter	7	Circulation pump	12	Domestic hot water system
3	VTE 1 PLUS water heater	8	Expansion tank	13	Water supply system
4	Safety valve	9	Safety group	14	Electric heat element
5	Ball valve	10	Three-way mixing valve		

HEATING AND ACCUMULATION OF WATER FOR DHW

TECHNICAL DESCRIPTION

The calorifier is designed for heating water in bivalent systems, as well as for its accumulation and storage for DHW. The lower heat exchanger is intended for connection to low-temperature heat sources (e.g., solar collectors, heat pumps). The upper heat exchanger is optimized for integration with high-temperature sources, primarily used for supplementary heating
The tank features a flanged inspection port with a sealed cover for periodic maintenance access. A fitting above the heat exchanger is provided to install an electric heating element. Two magnesium anodes ensure corrosion protection.

Tank	
P	T
10 bar	95 °C
Coil	
P	T
6 bar	95 °C

MATERIALS

Tank and heat exchanger are constructed from cold-rolled carbon steel with an internal double-layer enamel coating, baked at 860°C by DIN 4753 standards.

WARRANTY

2 years

THERMAL INSULATION

Rigid polyurethane foam insulation, 50 mm thick, encased in a zippered “sky” finish casing, compliant with all requirements of the **ErP 2009/125/EC Directive.**

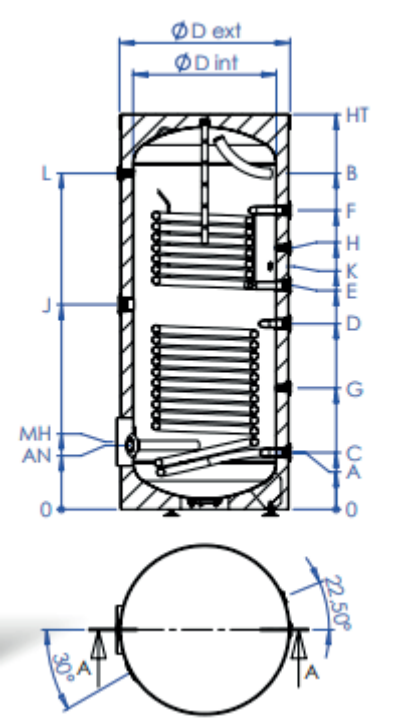
Model	Tank volume, l	Lower coil		Upper coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	S coil 2, m²	V coil 2, l	
160	153	0,64	3,83	0,42	2,55	B
200	187	0,85	5,10	0,62	3,83	B
300	283	1,27	7,66	0,85	5,10	B
400	378	1,65	10,21	0,97	5,87	C
500	443	2,06	12,44	0,96	6,06	C

ACCESSORIES

Electric heat elements

Model	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW
	1~220		3~400			
160	✓	✓	✓	✓	✓	-
200	✓	✓	✓	✓	✓	-
300	✓	✓	✓	✓	✓	-
400	✓	✓	✓	✓	✓	✓
500	✓	✓	✓	✓	✓	✓

DIMENSIONS AND CONNECTION



DESIGNATION

HT	Height
MH	Manhole
AN	Magnesium anode
A	Cold water inlet
B	Hot water outlet
C	Lower heat exchanger outlet
D	Lower heat exchanger inlet
E	Upper heat exchanger outlet
F	Upper heat exchanger inlet
G	Sensor pocket 1
H	Sensor pocket 2
J	Heating element
K	Recirculation
L	Thermometer

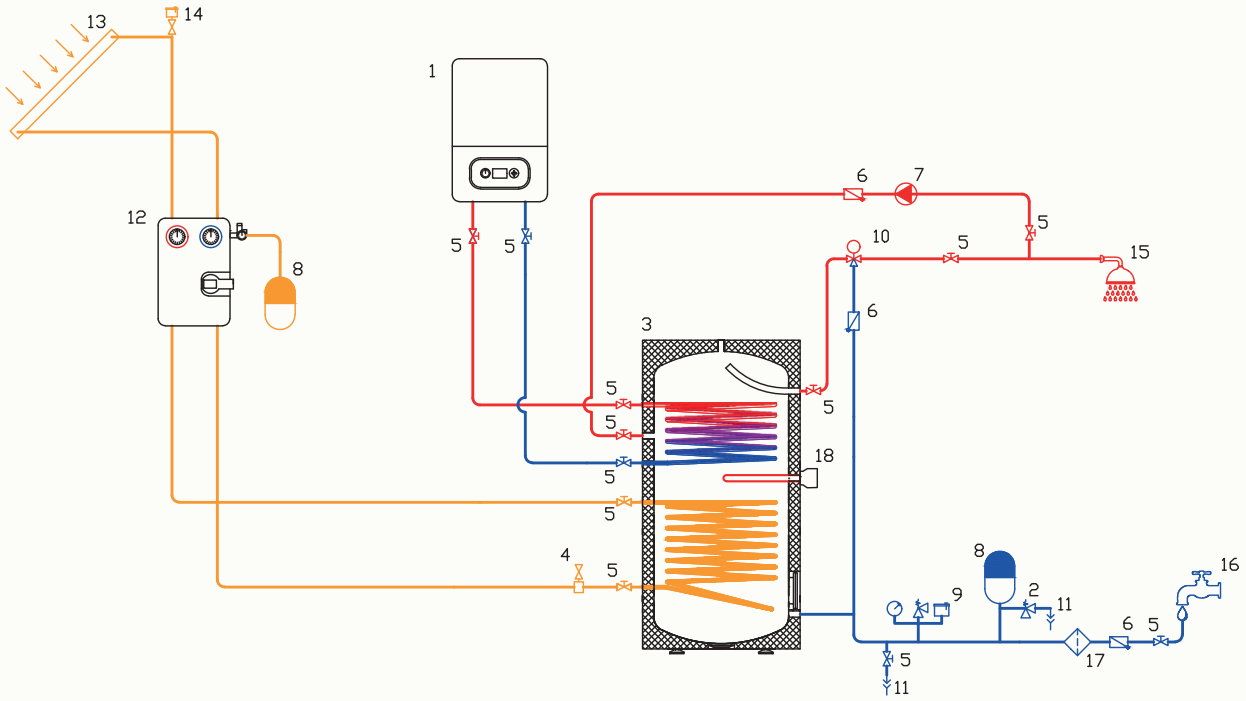
Model	Dimensions, mm			Connection sizes, mm												
	ØD ext	ØD int	HT	A	B	C	D	E	F	G	H	J	K	L	MH	AN
160	600	500	1035	242	787	242	507	607	787	375	697	557	605	787	287	272
				1"						1/2"		1 1/2"	3/4"	1/2"	Ø180	
200	600	500	1230	242	982	242	602	712	982	422	847	657	735	982	287	272
				1"						1/2"		1 1/2"	3/4"	1/2"	Ø180	
300	600	500	1760	242	1512	242	782	942	1302	512	1122	862	1088	1512	287	272
				1"						1/2"		1 1/2"	3/4"	1/2"	Ø180	
400	700	600	1655	238	1408	238	778	938	1253	508	1096	858	1018	1408	283	268
				1"						1/2"		1 1/2"	3/4"	1/2"	Ø180	
500	700	600	1900	238	1658	238	913	1073	1388	576	1231	993	1184	1658	283	268
				1"						1/2"		1 1/2"	3/4"	1/2"	Ø180	

DHW OUTPUT

Model	Area of the coil		Usable volume of the tank	Coil power at a supply heat transfer fluid temperature of 80°C (Δ20°C) into the coil, under the condition of heating water in the tank from 10 to 45°C with its continuous consumption		Maximum DHW output under continuous steady load (heating DHW from 10°C to 45°C) with a heat transfer fluid supply temperature of 80°C (ΔT 20°C) to the coil, heating source activated		Pressure loss of the heat transfer fluid	
	Lower coil	Upper coil		Lower coil	Upper coil	Lower coil	Upper coil	Lower coil	Upper coil
	m²	m²	l	kW	kW	l/h	l/h	mbar	mbar
200	0,85	0,62	187	26	19	639	393	18	9
300	1,27	0,85	283	36	26	835	639	27	19
400	1,65	0,97	378	48	25	1106	614	28	26
500	2,06	0,96	443	60	31	1278	762	60	26

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Gas/electric boiler
2 Safety valve
3 VTE 2 water heater
4 Automatic solar circuit air vent
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Drainage
12 Circulation pump
13 Solar collector (solar circuit)
14 Solar circuit air vent
15 Domestic hot water system
16 Water supply system
17 Mesh filter
18 Electric heat element

HEAT ACCUMULATION FOR HEATING SYSTEM, PREPARATION, AND STORAGE OF DOMESTIC HOT WATER (DHW)

TECHNICAL DESCRIPTION

The storage tank is designed to accumulate thermal energy from various sources, including solar collectors, via a lower heat exchanger.
The internal DHW tank is located in the upper part of the tank, allowing the use of the highest-temperature heat carrier for rapid and efficient heating of DHW, as well as storing it in the required volume.
The DHW reserve ensures coverage of peak hot water consumption. Thanks to its corrugated wall design, the internal tank offers sufficient resistance to external pressure fluctuations.

Tank		Heat exchanger of the external heating circuit	
P	T	P	T
3 bar	95°C	6 bar	95°C
DHW tank			
P		T	
6 bar		95°C	

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

INTERNAL TANK

The internal DHW tank with a corrugated/wavy wall is made of AISI316L (DIN 1.4404) stainless steel.

HEAT EXCHANGER

The lower heat exchanger (external heating circuit) is made of C22 (DIN 1.0402) carbon steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm thick polyester thermal insulation in a PVC fabric casing with a zipper

PU/PVC – 90 mm thick elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm thick polyester thermal insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm thick high-efficiency rigid thermal insulation made of graphitized polystyrene in an ABS plastic casing. Premium-class insulation - complies with all requirements of the **ErP 2009/125/EC Directive**

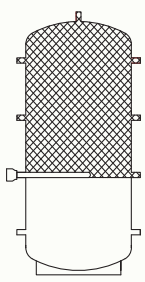
Model	Tank volume, l	Heat exchanger of the external heating circuit		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
400/80	413	1,5	10,0	B
500/80	483	1,5	10,0	B
500/115				
500/185				
750/115	773	1,5	10,0	C
750/270				
1000/115	1008	1,8	15,5	C
1000/270				
1500/115	1449	2,3	19,5	C
1500/270				
2000/115	2158	2,3	19,5	C
2000/270				

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions, connection configurations, the volume of the DHW inner tank and heat exchanger parameters.

ACCESSORIES



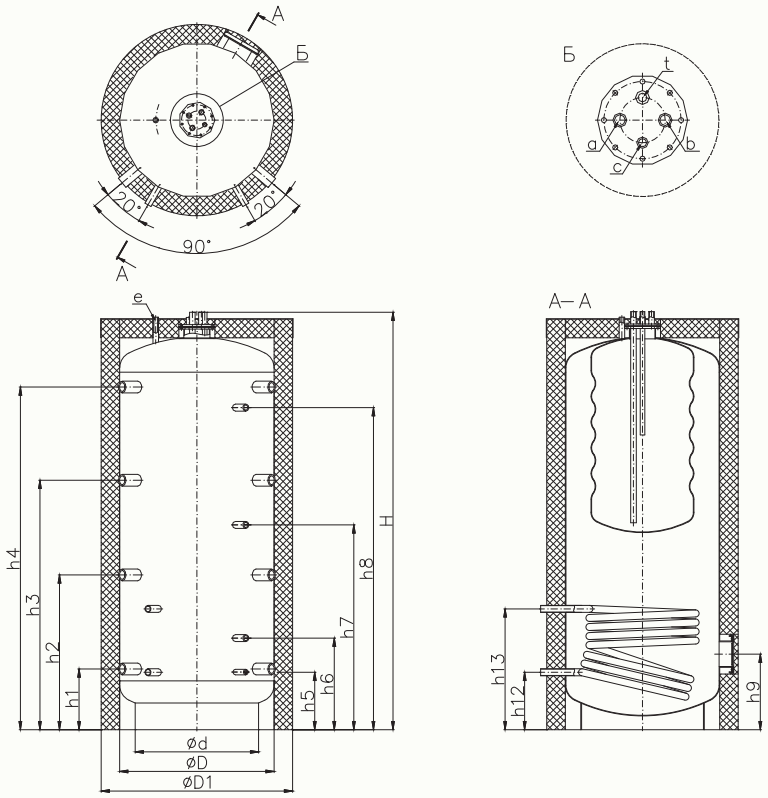
Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400/80	212	148	98	66	49	39	33	-	-
500/80	309	215	144	96	72	57	48	-	-
500/115	309	215	144	96	72	57	48	-	-
500/185	309	215	144	96	72	57	48	-	-
750/115	500	348	232	155	116	93	77	58	-
750/270	500	348	232	155	116	93	77	58	-
1000/115	650	453	302	201	151	121	101	75	60
1000/270	650	453	302	201	151	121	101	75	60
1500/115	926	645	430	287	215	172	143	108	86
1500/270	926	645	430	287	215	172	143	108	86
2000/115	1370	954	636	424	318	255	212	159	127
2000/270	1370	954	636	424	318	255	212	159	127

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

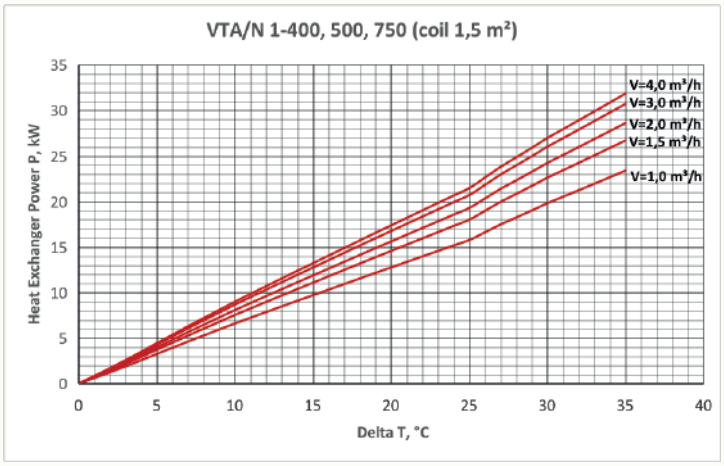
H,h1-h4	Connections of supply and return lines of heating circuits
h5	Technological connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 мм
h12-h13	Connections of supply and return lines of the external heating circuit (Coil 1 - lower heat exchanger)
e	Air vent
a	Cold water supply
b	Hot water supply
c	Recirculation
t	Temperature sensor connection

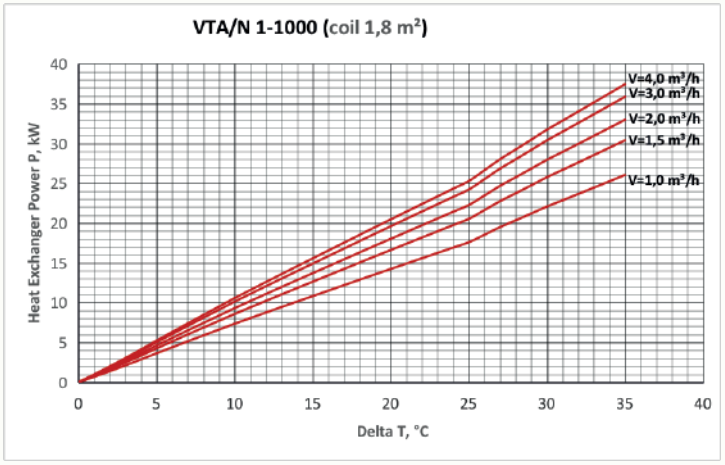
Model	Dimensions, mm				Connection sizes, mm														
	⌀D1	⌀D	⌀d	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h12	h13	e	a,b	c	t
400/80	800	600	450	1720	264	834	-	1406	249	414	-	1256	336	248	668	1/2"	3/4"	1/2"	1/2"
					1 1/2"			1 1/2"	1/2"	3/4"		3/4"		1"					
500/80 500/115 500/185	800	600	450	1970	264	721	1181	1634	249	414	964	1534	336	248	668	1/2"	3/4"	1/2"	1/2"
					1 1/2"				1/2"	3/4"				1"					
750/115 750/270	950	750	600	2030	295	752	1212	1665	280	445	995	1565	367	279	631	1/2"	3/4" 1"	1/2" 3/4"	1/2"
					1 1/2"				1/2"	3/4"				1"					
1000/115 1000/270	1050	850	700	2080	323	780	1240	1693	308	473	1023	1593	395	311	661	1/2"	3/4" 1"	1/2" 3/4"	1/2"
					1 1/2"				1/2"	3/4"				1 1/4"					
1500/115 1500/270	1200	1000	850	2170	368	825	1285	1738	353	518	1068	1638	440	356	706	1/2"	3/4" 1"	1/2" 3/4"	1/2"
					1 1/2"				1/2"	3/4"				1 1/4"					
2000/115 2000/270	1400	1200	1000	2270	419	876	1336	1789	404	569	1119	1689	491	407	707	1/2"	3/4" 1"	1/2" 3/4"	1/2"
					1 1/2"				1/2"	3/4"				1 1/4"					

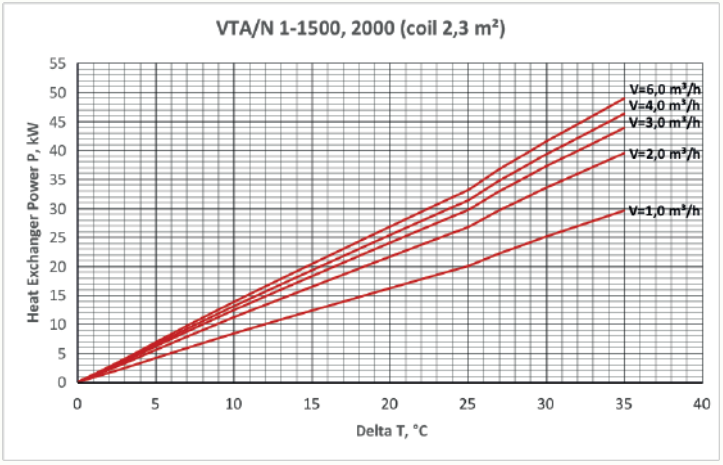
LOWER HEAT EXCHANGER CAPACITY

The capacity of the lower heat exchanger, P (kW), is shown as a function of the temperature difference, ΔT (°C), between the heat carrier supply to the heat exchanger and the average tank temperature in the lower heat exchanger zone, at a specific heat carrier circulation rate, V (m³/h), in t he heat exchanger.

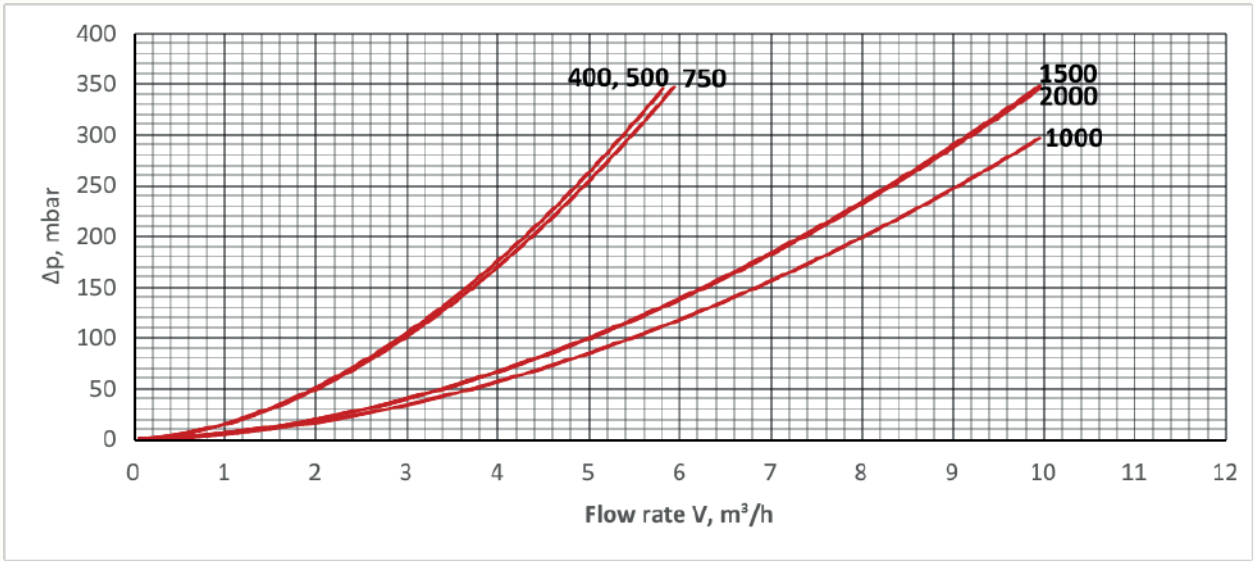
For example, consider a VTA/N 1-750 water heater tank where the average temperature in the lower heat exchanger zone is 40°C, and the heat carrier flowing through the heat exchanger has a temperature of 70°C with a circulation rate of 2 m³/h. In this case, the temperature difference ΔT = 70 - 40 = 30°C, and the capacity of the lower heat exchanger is approximately 24 kW..







PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

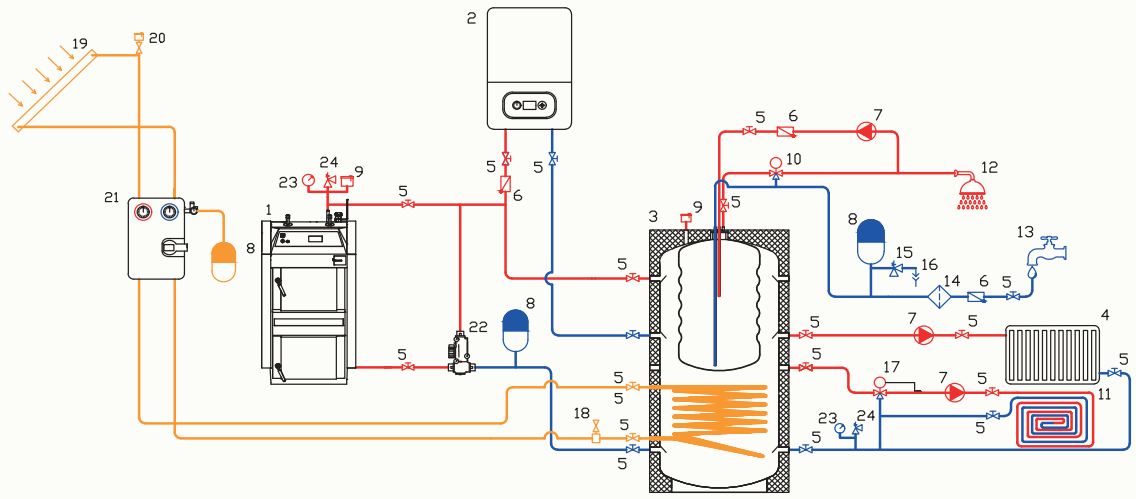


PERFORMANCE OF THE INTERNAL DHW TANK

Model	Volume of the Internal Tank	Surface Area of the Internal Tank	Maximum DHW Performance at Continuous Constant Load (Heating DHW from 10°C to 45°C), Heat Source Active		Maximum DHW Output (Heating DHW from 10°C to 45°C), Heat Source Off, Tank Not Cooled by Other Loads (e.g., Heating System)		
			Tank Temperature 80°C	Tank Temperature 65 °C	Tank Heated to 80°C	Tank Heated to 65°C	Tank Heated to 50°C
	l	m²	l/min	l/min	l	l	l
400/80	82	0,87	9,0	5,7	354	224	113
500/80	82	0,87	9,0	5,7	394	244	117
500/115	114	1,18	12,3	7,8	439	284	151
500/185	185	1,62	16,8	10,7	541	376	229
750/115	114	1,18	12,3	7,8	604	367	168
750/270	271	2,08	21,5	13,7	829	570	339
1000/115	114	1,18	12,3	7,8	739	434	181
1000/270	271	2,08	21,5	13,7	964	637	352
1500/115	114	1,18	12,3	7,8	991	560	206
1500/270	271	2,08	21,5	13,7	1216	763	377
2000/115	114	1,18	12,3	7,8	1396	763	247
2000/270	271	2,08	21,5	13,7	1621	965	418

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Solid fuel boiler
2 Gas/electric boiler
3 VTA/N 1 water heater
4 Radiator heating circuit
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Underfloor heating circuit
12 Hot water supply system
13 Water supply system
14 Mesh filter
15 Safety valve
16 Drainage
17 Three-way valve with remote sensor for the underfloor heating system
18 Automatic air vent for the solar circuit
19 Solar collector (solar circuit)
20 Air vent for the solar circuit
21 Circulation pump
22 Laddomat thermomixing device
23 Pressure gauge
24 Safety valve

HEAT ACCUMULATION FOR HEATING SYSTEM, PREPARATION, AND STORAGE OF DOMESTIC HOT WATER (DHW) WITH INTENSIVE HEAT EXTRACTION FROM SOLAR COLLECTORS

TECHNICAL DESCRIPTION

The storage tank is designed to accumulate thermal energy from various sources, including solar collectors, via a lower heat exchanger.
The internal DHW tank, partially located in the lower heat exchanger zone, enhances heat transfer from the solar system, enabling greater energy extraction from the sun. The DHW reserve ensures coverage of peak hot water consumption. Thanks to its corrugated wall design, the internal tank offers sufficient resistance to external pressure fluctuations.

Tank		Heat exchanger of the external heating circuit	
P	T	P	T
3 bar	95℃	6 bar	95℃

DHW tank	
P	T
6 bar	95℃

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

INTERNAL TANK

The internal DHW tank with a corrugated/wavy wall is made of AISI316L (DIN 1.4404) stainless steel.

HEAT EXCHANGER

The lower heat exchanger (external heating circuit) is made of C22 (DIN 1.0402) carbon steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm thick polyester thermal insulation in a PVC fabric casing with a zipper

PU/PVC – 90 mm thick elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm thick polyester thermal insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm thick high-efficiency rigid thermal insulation made of graphitized polystyrene in an ABS plastic casing. Premium-class insulation - complies with all requirements of the **ErP 2009/125/EC Directive**

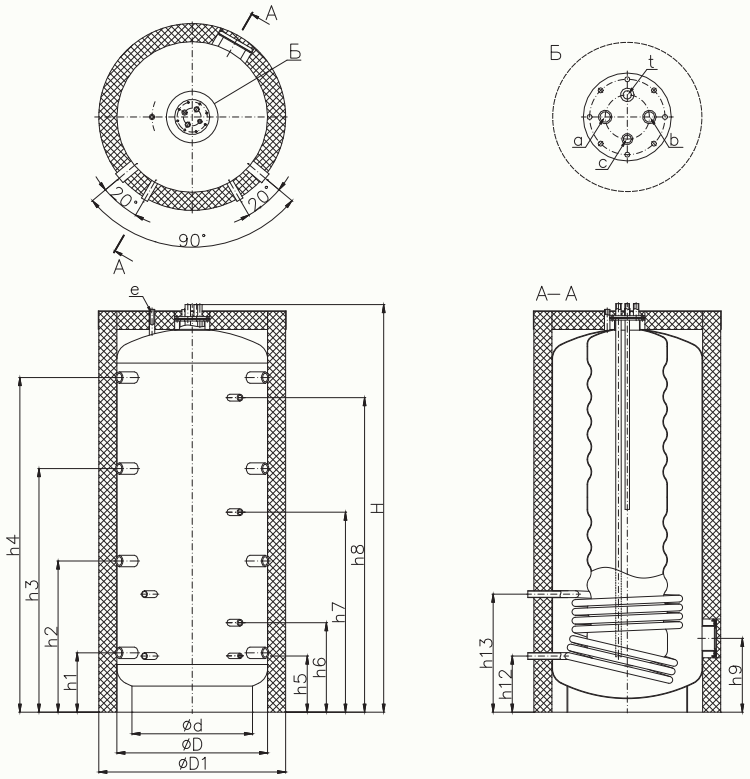
Model	Tank volume, l	Heat exchanger of the external heating circuit		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
750/200	773	1,5	10,0	C
1000/200	1008	1,8	15,5	C
1000/300				
1500/200	1449	2,3	19,5	C
1500/330				
1500/480				
2000/200	2158	2,3	19,5	C
2000/330				
2000/480				

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

DIMENSIONS AND CONNECTION



DESIGNATION

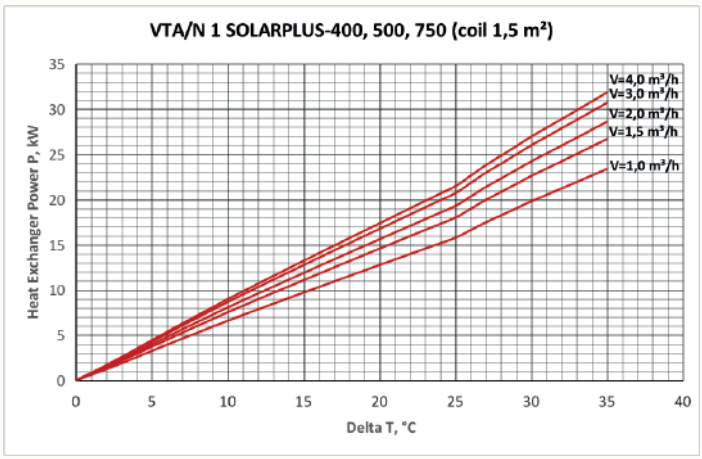
H,h1-h4	Connections of supply and return lines of heating circuits
h5	Technological connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 мм
h12-h13	Connections of supply and return lines of the external heating circuit (Coil 1 - lower heat exchanger)
e	Air vent
a	Cold water supply
b	Hot water supply
c	Recirculation
t	Temperature sensor connection

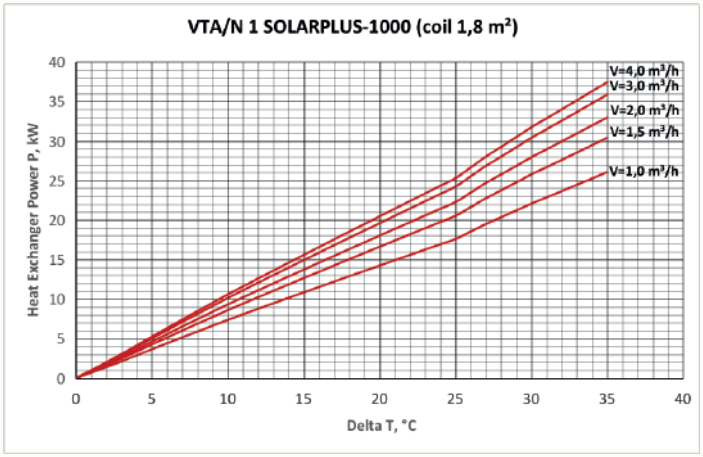
Model	Dimensions, mm				Connection sizes, mm														
	ø D1	ø D	ø d	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h12	h13	e	a,b	c	t
750/200	950	750	600	2030	295	752	1212	1665	280	445	995	1565	367	279	631	1/2"	3/4"	1/2"	1/2"
					1 1/2"				1/2"	3/4"				1"					
1000/200	1050	850	700	2080	323	780	1240	1693	308	473	1023	1593	395	311	661	1/2"	3/4"	1/2"	1/2"
1000/330																	1"	3/4"	
					1 1/2"				1/2"	3/4"				1 1/4"					
1500/200	1200	1000	850	2170	368	825	1285	1738	353	518	1068	1638	440	356	706	1/2"	3/4"	1/2"	1/2"
1500/330																	1"	3/4"	
1500/480																			
					1 1/2"				1/2"	3/4"				1 1/4"					
2000/200	1400	1200	1000	2270	419	876	1336	1789	404	569	1119	1689	491	407	707	1/2"	3/4"	1/2"	1/2"
2000/330																	1"	3/4"	
2000/480																			
					1 1/2"				1/2"	3/4"				1 1/4"					

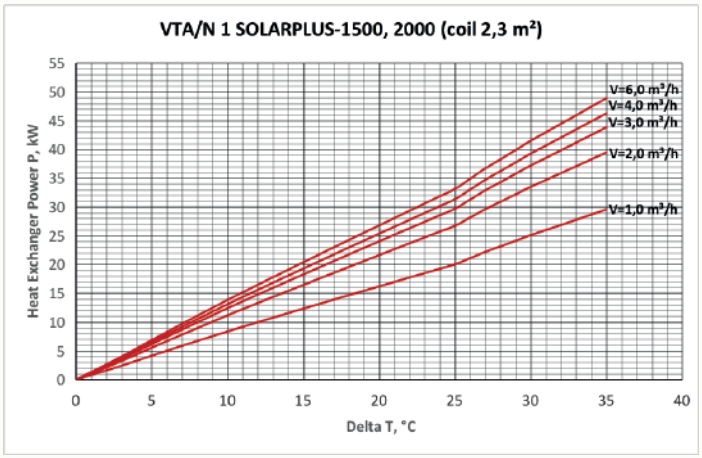
LOWER HEAT EXCHANGER CAPACITY

The capacity of the lower heat exchanger, P (kW), is presented as a function of the temperature difference, ΔT (°C), between the heat carrier supply to the heat exchanger and the average tank temperature in the lower heat exchanger zone, at a specific heat carrier circulation rate, V (m³/h), through the heat exchanger.

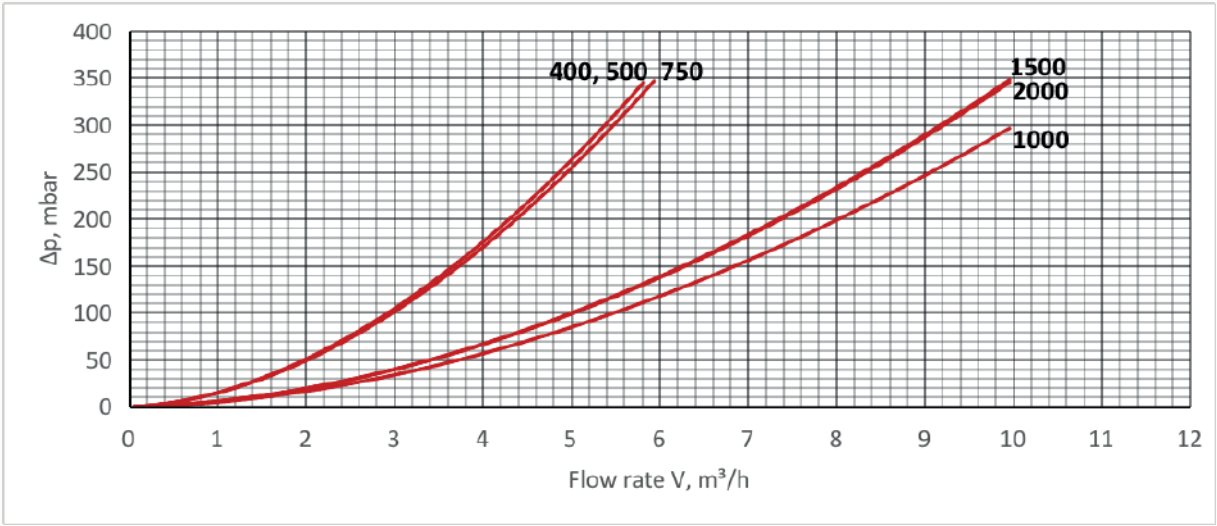
For example, consider a VTA/N 1 SOLARPLUS-750 water heater tank where the average temperature in the lower heat exchanger zone is 40°C, and the heat carrier flowing through the heat exchanger has a temperature of 70°C with a circulation rate of 2 m³/h. In this case, the temperature difference ΔT = 70 - 40 = 30°C, and the capacity of the lower heat exchanger is approximately 24 kW.







PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

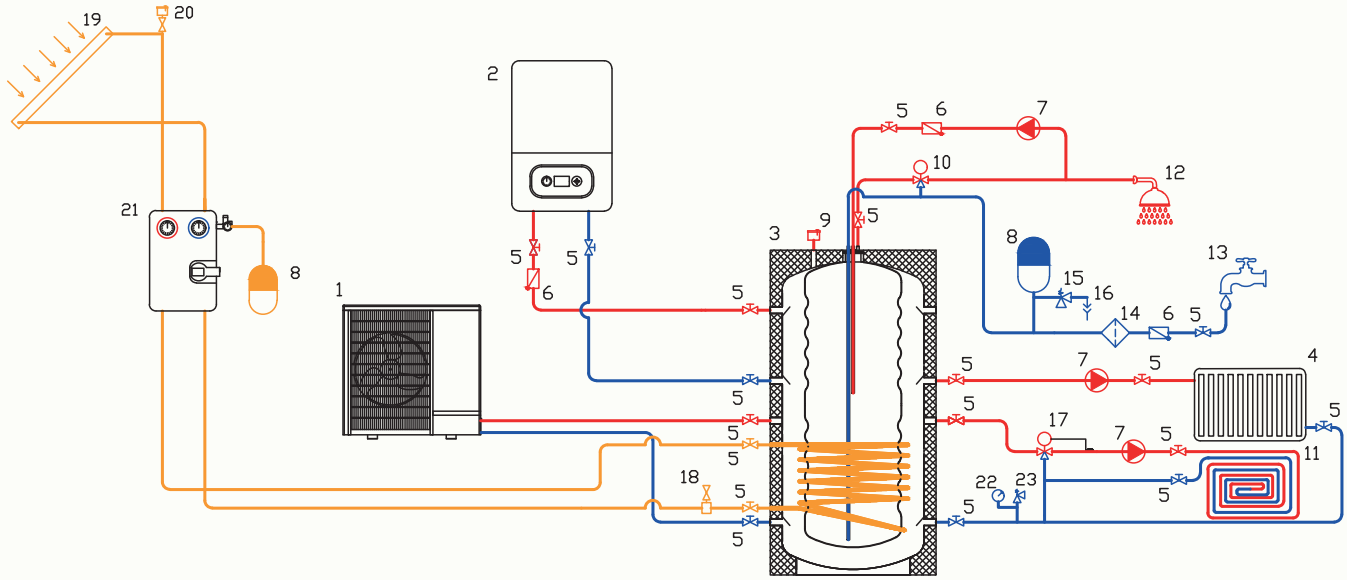


PERFORMANCE OF THE INTERNAL DHW TANK

Model	Volume of the Internal Tank	Surface Area of the Internal Tank	Maximum DHW Performance at Continuous Constant Load (Heating DHW from 10°C to 45°C), Heat Source Active		Maximum DHW Output (Heating DHW from 10°C to 45°C), Heat Source Off, Tank Not Cooled by Other Loads (e.g., Heating System)		
			Tank Temperature 80°C	Tank Temperature 65°C	Tank Heated to 80°C	Tank Heated to 65°C	Tank Heated to 50°C
	l	m²	l/min	l/min	l	l	l
750/200	208	2,13	22,0	14,0	737	487	270
1000/200	208	2,13	22,0	14,0	873	555	283
1000/330	332	2,80	29,0	18,5	1051	715	418
1500/200	208	2,13	22,0	14,0	1125	681	309
1500/330	332	2,80	29,0	18,5	1303	841	444
1500/480	483	3,49	36,1	23,0	1518	1035	608
2000/200	208	2,13	22,0	14,0	1530	884	349
2000/330	332	2,80	29,0	18,5	1708	1044	484
2000/480	483	3,49	36,1	23,0	1924	1238	648

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Heat pump
2 Gas/electric boiler
3 VTA-N 1 Solar Plus water heater
4 Radiator heating circuit
5 Ball valve
6 Check valve
7 Circulation pump
8 Expansion tank
9 Safety group
10 Three-way mixing valve
11 Underfloor heating circuit
12 Hot water supply system
13 Water supply system
14 Mesh filter
15 Safety valve
16 Drainage
17 Three-way valve with remote sensor for the underfloor heating system
18 Automatic air vent for the solar circuit
19 Solar collector (solar circuit)
20 Air vent for the solar circuit
21 Circulation pump
22 Pressure gauge
23 Safety valve

HEAT ACCUMULATION FOR HEATING SYSTEM, PREPARATION, AND STORAGE OF DOMESTIC HOT WATER (DHW)

TECHNICAL DESCRIPTION

The storage tank is designed to accumulate thermal energy from various heat sources. The internal DHW tank is positioned in the upper part of the tank, enabling the use of the highest-temperature heat carrier for rapid and efficient heating of DHW, as well as storing it in the required volume. Models with an internal tank occupying nearly the entire space of the outer tank are suitable for operation with heat pumps. The DHW reserve ensures coverage of peak hot water consumption. Thanks to its corrugated wall design, the internal tank offers sufficient resistance to external pressure fluctuations.

MATERIAL

The tank is made of S235JR (DIN 1.0038) carbon s tructural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

INTERNAL TANK

The internal DHW tank with a corrugated/wavy wall is made of AISI316L (DIN 1.4404) stainless steel.

INTERNAL TANK

The internal DHW tank with a corrugated/wavy wall is made of AISI316L (DIN 1.4404) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm thick polyester thermal insulation in a PVC fabric casing with a zipper

PU/PVC – 90 mm thick elastic polyurethane foam insulation in a PVC fabric casing secured with straps

PL/ABS – 100 mm thick polyester thermal insulation in an ABS plastic casing with plastic latches

PS/ABS – 100 mm thick high-efficiency rigid thermal insulation made of graphitized polystyrene in an ABS plastic casing. Premium-class insulation - complies with all requirements of the **ErP 2009/125/EC Directive**

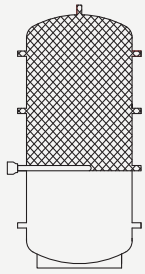
Tank		Heat exchanger of the external heating circuit	
P	T	P	T
3 bar	95 °C	6 bar	95 °C
DHW tank			
P		T	
6 bar		95 °C	

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions, connection configurations and the volume of the DHW inner tank.

Model	Tank volume, l	Energy efficiency class of insulation*
200/80	214	A
200/115		
300/80	305	A
300/115		
300/150		
300/200		
400/80	413	B
400/115		
400/185		
400/230		
500/80	483	B
500/115		
500/185		
500/330		
750/115	773	C
750/185		
750/330		
750/480		
1000/115	1008	C
1000/185		
1000/330		
1000/770		
1500/115	1449	C
1500/200		
1500/330		
1500/580		
1500/770		
2000/115	2158	C
2000/200		
2000/330		
2000/580		
2000/770		

ACCESSORIES



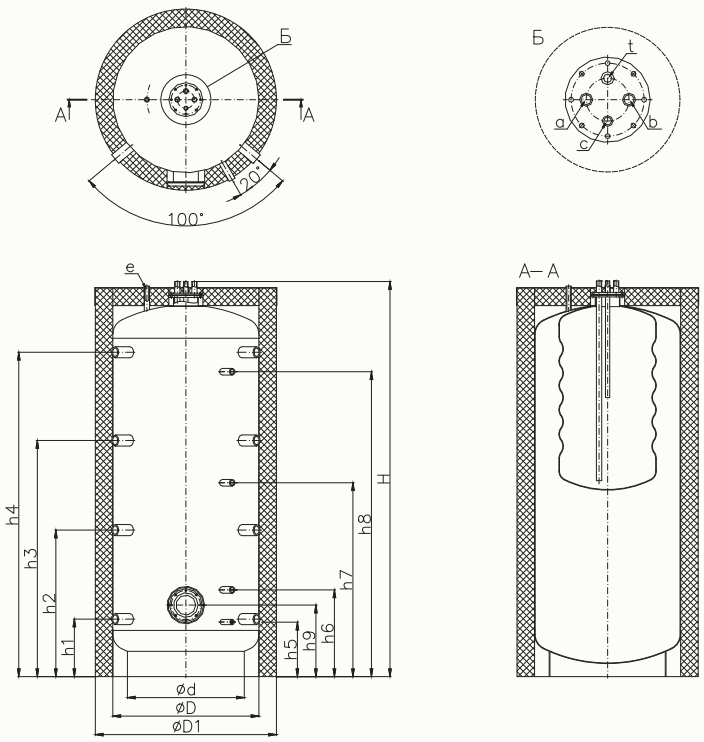
Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400/80	212	148	98	66	49	39	33		
500/80	314	219	146	97	73	58	49	-	-
500/115	314	219	146	97	73	58	49		
500/185	314	219	146	97	73	58	49		
750/115	500	348	232	155	116	93	77	58	
750/185	500	348	232	155	116	93	77	58	
1000/115	650	453	302	201	151	121	101	75	60
1000/185	650	453	302	201	151	121	101	75	60
1000/330	650	453	302	201	151	121	101	75	60
1500/115	926	645	430	287	215	172	143	108	86
1500/200	926	645	430	287	215	172	143	108	86
1500/330	926	645	430	287	215	172	143	108	86
1500/580	926	645	430	287	215	172	143	108	86
2000/115	1370	954	636	424	318	255	212	159	127
2000/200	1370	954	636	424	318	255	212	159	127
2000/330	1370	954	636	424	318	255	212	159	127
2000/580	1370	954	636	424	318	255	212	159	127

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element.

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

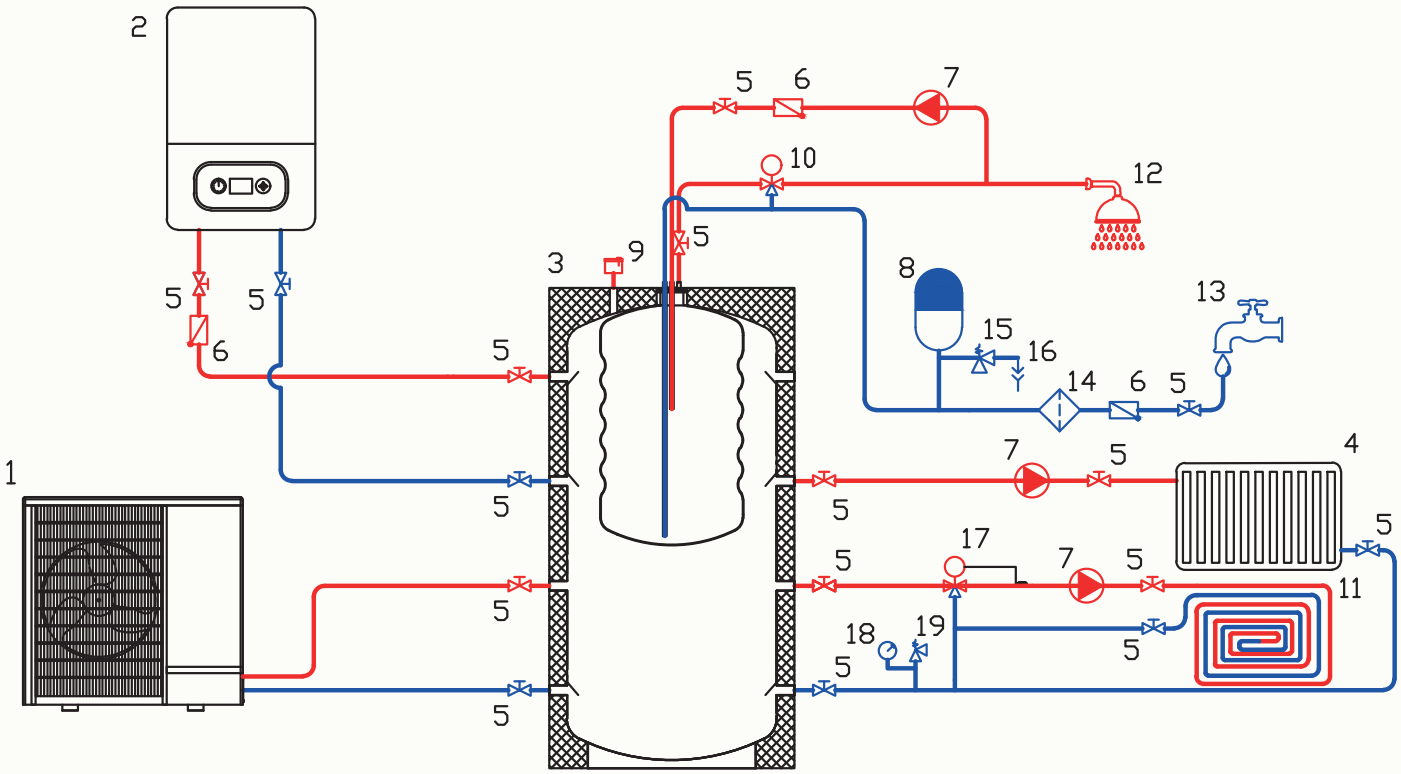
H,h1-h4	Connections of supply and return lines of heating circuits
h5	Technological connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 мм
e	Air vent
a	Cold water supply
b	Hot water supply
c	Recirculation
t	Temperature sensor connection

Model	Dimensions, mm				Connection sizes, mm												
	ø D1	ø D	ø d	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	e	a,b	c	t
200/80	700	500	400	1330	251	647	-	1043	236	401	-	921	323	1/2"	3/4"	1/2"	1/2"
200/115					1 1/2"			1 1/2"	1/2"	3/4"		3/4"					
300/80	700	500	400	1940	251	647	1168	1621	236	401	951	1521	323	1/2"	3/4"	1/2"	1/2"
300/115																	
300/150																	
300/200					1 1/2"				1/2"	3/4"							
400/80	800	600	450	1720	264	834	-	1406	249	414	-	1256	336	1/2"	3/4"	1/2"	1/2"
400/115																	
400/185																3/4"	
400/230					1 1/2"			1 1/2"	1/2"	3/4"		3/4"					
500/80	800	600	450	1970	264	721	1118	1634	249	414	964	1534	336	1/2"	3/4"	1/2"	1/2"
500/115																	
500/185															1"	3/4"	
500/330					1 1/2"				1/2"	3/4"							
750/115	950	750	600	2030	295	752	1212	1665	280	445	995	1565	367	1/2"	3/4"	1/2"	1/2"
750/185																	
750/330															1"	3/4"	
750/480					1 1/2"				1/2"	3/4"							
1000/115	1050	850	700	2080	323	780	1240	1693	308	473	1023	1593	395	1/2"	3/4"	1/2"	1/2"
1000/185																	
1000/330															1"	3/4"	
1000/770															1 1/4"	1"	
					1 1/2"				1/2"	3/4"							
1500/115	1200	1000	850	2170	368	825	1285	1738	353	518	1068	1638	440	1/2"	3/4"	1/2"	1/2"
1500/200																	
1500/330															1"	3/4"	
1500/580																	
1500/700															1 1/4"	1"	
					1 1/2"				1/2"	3/4"							
2000/115	1400	1200	1000	2270	419	876	1336	1789	404	569	1119	1669	491	1/2"	3/4"	1/2"	1/2"
2000/200																	
2000/330															1"	3/4"	
2000/580																	
2000/700															1 1/4"	1"	
					1 1/2"				1/2"	3/4"							

Model	Volume of the Internal Tank	Surface Area of the Internal Tank	Maximum DHW Performance at Continuous Constant Load (Heating DHW from 10°C to 45°C), Heat Source Active		Maximum DHW Output (Heating DHW from 10°C to 45°C), Heat Source Off, Tank Not Cooled by Other Loads (e.g., Heating System)		
			Tank Temperature 80°C	Tank Temperature 65°C	Tank Heated to 80°C	Tank Heated to 65°C	Tank Heated to 50°C
	l	m²	l/min	l/min	l	l	l
200/80	82	0,87	9,0	5,7	240	167	102
200/115	114	1,18	12,3	7,8	285	207	136
300/80	82	0,87	9,0	5,7	292	193	107
300/115	114	1,18	12,3	7,8	337	233	141
300/150	145	1,50	15,5	9,9	382	274	175
300/200	208	2,13	22,0	14,0	471	355	243
400/80	82	0,87	9,0	5,7	354	224	113
400/115	114	1,18	12,3	7,8	399	264	147
400/185	185	1,62	16,8	10,7	501	356	225
400/230	234	2,02	20,9	13,3	571	419	278
500/80	82	0,87	9,0	5,7	394	244	117
500/115	114	1,18	12,3	7,8	439	284	151
500/185	185	1,62	16,8	10,7	541	376	229
500/330	332	2,80	29,0	18,5	751	565	388
750/115	114	1,18	12,3	7,8	604	367	168
750/185	185	1,62	16,8	10,7	706	459	245
750/330	332	2,80	29,0	18,5	917	648	405
750/480	483	3,49	36,1	23,0	1132	842	569
1000/115	114	1,18	12,3	7,8	739	434	181
1000/185	185	1,62	16,8	10,7	841	526	259
1000/330	331	2,26	23,5	15,0	1049	714	417
1000/770	773	4,62	47,9	30,5	1680	1282	897
1500/115	114	1,18	12,3	7,8	991	560	206
1500/200	201	1,61	16,6	10,6	1115	672	301
1500/330	331	2,26	23,5	15,0	1301	840	442
1500/580	582	3,42	35,4	22,6	1660	1163	715
1500/770	773	4,62	47,9	30,5	1932	1408	922
2000/115	114	1,18	12,3	7,8	1396	763	247
2000/200	201	1,61	16,6	10,6	1520	875	341
2000/330	331	2,26	23,5	15,0	1706	1042	483
2000/580	582	3,42	35,4	22,6	2065	1365	755
2000/770	773	4,62	47,9	30,5	2337	1610	962

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Heat pump	7	Circulation pump	13	Water supply system
2	Gas or electric boiler	8	Expansion tank	14	Mesh filter
3	VTA-N 2 water heater	9	Safety group	15	Safety valve
4	Radiator heating circuit	10	Three-way mixing valve	16	Drainage
5	Ball valve	11	Underfloor heating circuit	17	Three-way valve with remote sensor for the underfloor heating system
6	Check valve	12	Hot water supply system	18	Pressure gauge
				19	Safety valve

HEAT STORAGE FOR HEATING SYSTEMS AND DHW PRODUCTION

TECHNICAL DESCRIPTION

The storage tank is designed for accumulating thermal energy from various sources, including solar collectors via the lower heat exchanger. The DHW heat exchanger is located in the upper part of the tank, allowing the highest-temperature heat carrier to be used for quick and efficient DHW heating in the required volume.

MATERIAL

The tank is made of carbon structural steel S235JR (DIN 1.0038). The external coating provides enhanced resistance to mechanical impact and aggressive environments.

HEAT EXCHANGERS

Lower heat exchanger (external heating circuit): Made of carbon steel C22 (DIN 1.0402).
DHW heat exchanger: Made of stainless steel AISI 304L (DIN 1.4307).

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation with a PVC fabric cover and zipper closure.

PU/PVC – 90 mm flexible polyurethane foam insulation with a PVC fabric cover, secured with straps.

PL/ABS – 100 mm polyester insulation with an ABS plastic cover and plastic locks.

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation with an ABS plastic cover. Premium-class insulation – fully complies with **ErP 2009/125/EC Directive**

CUSTOM DRAW

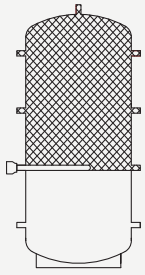
Design and production of water heaters tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

Tank		Heat exchanger of the external heating circuit	
P	T	P	T
3 bar	95°C	6 bar	95°C
DHW coil			
P		T	
10 bar		95°C	

Model	V tank, l	Heat exchanger of the external heating circuit		DHW Coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	S coil 2, m²	V coil 2, l	
400	413	1,5	10	1,4	10	B
500	483	1,5	10	1,4	10	B
				2,2	15	
750	773	1,5	10	1,55	11	C
				2,1	15	
				3,1	22	
				3,8	27	
1000	1008	1,8	15,5	1,55	14	C
				2,3	21,5	
				3,1	28,5	
				3,9	35,5	
				4,6	42,5	
1500	1449	2,3	19,5	1,99	18	C
				2,9	27	
				3,85	36,5	
				4,8	45,5	
				5,7	45,5	
2000	2158	2,3	19,5	2,3	22	C
				3,45	32,5	
				4,56	43,5	
				5,7	54,5	
				6,9	65	

*Energy efficiency class specified for PS/ABS insulation

ACCESSORIES

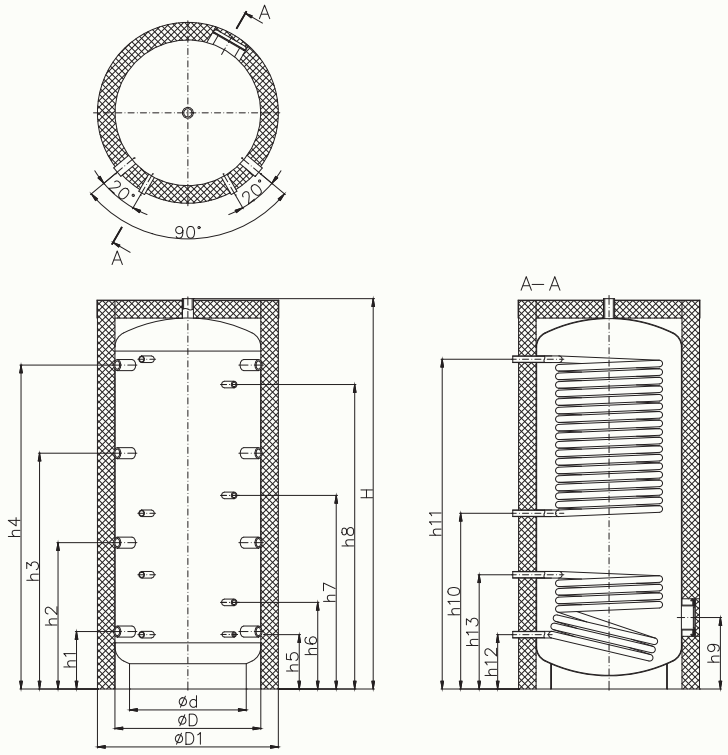


Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400	212	148	98	66	49	39	33	-	-
500	309	215	144	96	72	57	48	-	-
750	500	348	232	155	116	93	77	58	-
1000	650	453	302	201	151	121	101	75	60
1500	926	645	430	287	215	172	143	108	86
2000	1370	954	636	424	318	255	212	159	127

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

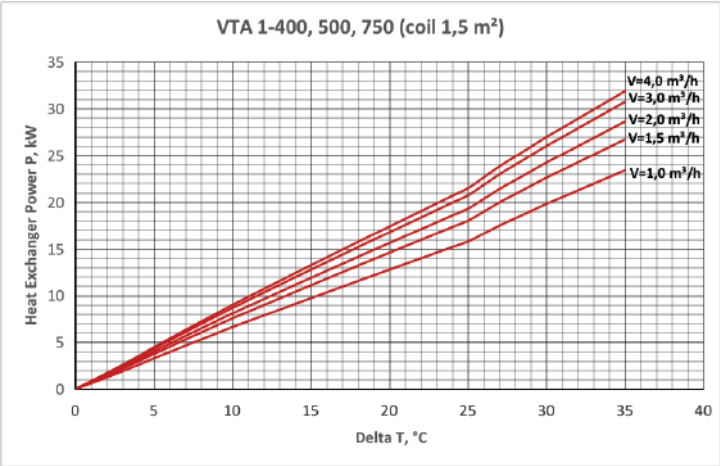
H, h1-h4	Supply and return connections of heating circuits
h5	Process connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 mm
h10-h11	Cold and hot water connections (Coil 1 - upper heat exchanger)
h12-h13	Supply and return connections of the external heating circuit (Coil 1 - lower heat exchanger)

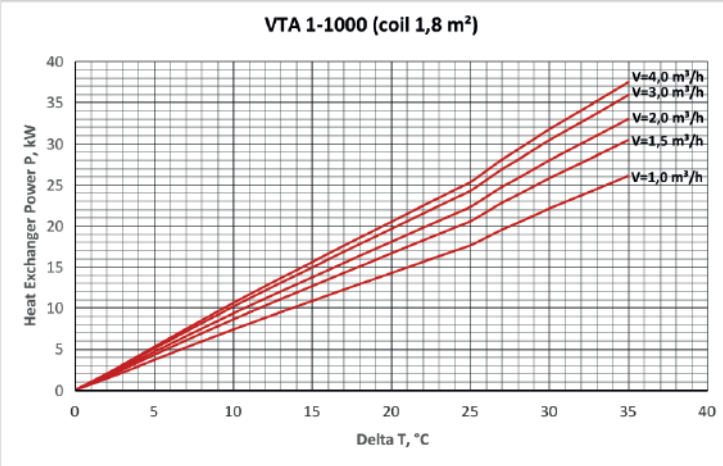
Model	S coil 2, m²	Dimensions, mm				Connection sizes, mm												
		ø D1	ø D	ød	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11	h12	h13
400	1,4	800	600	450	1700	264	834	-	1406	249	414	-	1256	336	930	1414	248	688
						1 1/2"				1/2"	3/4"				1"			
500	1,4	800	600	450	1995	264	721	1181	1634	249	414	964	1534	336	1180	1664	248	688
	2,2														872			
						1 1/2"				1/2"	3/4"				1"			
750	1,55	950	750	600	2010	295	752	1212	1665	280	445	995	1565	367	1299	1695	279	631
	2,1														1167			
	3,1														903			
	3,8														903			
						1 1/2"				1/2"	3/4"				1"			
1000	1,55	1050	850	700	2060	323	780	1240	1693	308	473	1023	1593	395	1419	1719	311	661
	2,3														1269			
	3,1														1119			
	3,9														969			
	4,6														819			
						1 1/2"				1/2"	3/4"				1 1/4"			
1500	1,99	1200	1000	850	2150	368	825	1285	1738	353	518	1068	1638	440	1464	1764	356	706
	2,9														1314			
	3,85														1164			
	4,8														1014			
	5,7														864			
						1 1/2"				1/2"	3/4"				1 1/4"			
2000	2,3	1400	1200	1000	2250	419	876	1336	1789	404	569	1119	1689	491	1515	1815	407	707
	3,45														1365			
	4,56														1215			
	5,7														1065			
	6,9														915			
						1 1/2"				1/2"	3/4"				1 1/4"			

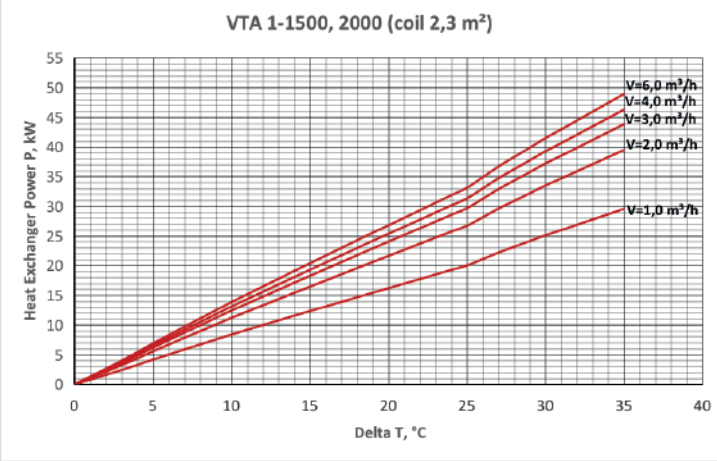
LOWER HEAT EXCHANGER POWER OUTPUT

The power output P, kW of the lower heat exchanger is shown as a function of the temperature difference ΔT, °C between the supply temperature of the heat carrier entering the heat exchanger and the average tank temperature in the lower heat exchanger zone, at a given heat carrier circulation rate V, m³/h.

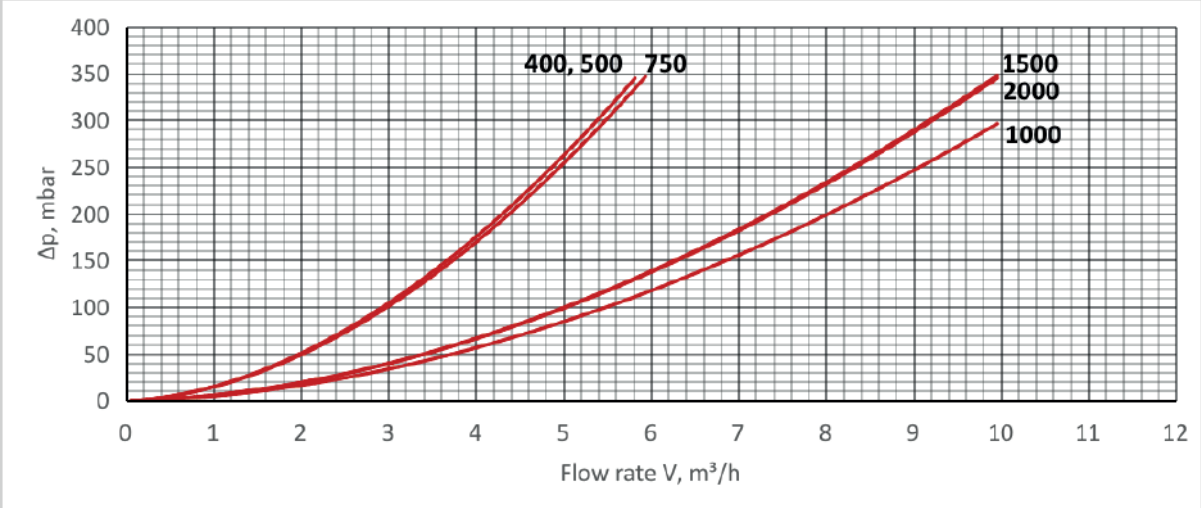
For example, in the VTA 1 750 water heater, if the average temperature in the lower heat exchanger zone is 40°C, and the heat carrier flows through the heat exchanger at 70°C with a circulation rate of 2 m³/h, then the temperature difference is ΔT = 70 - 40 = 30°C, and the approximate power output of the lower heat exchanger is 24 kW.





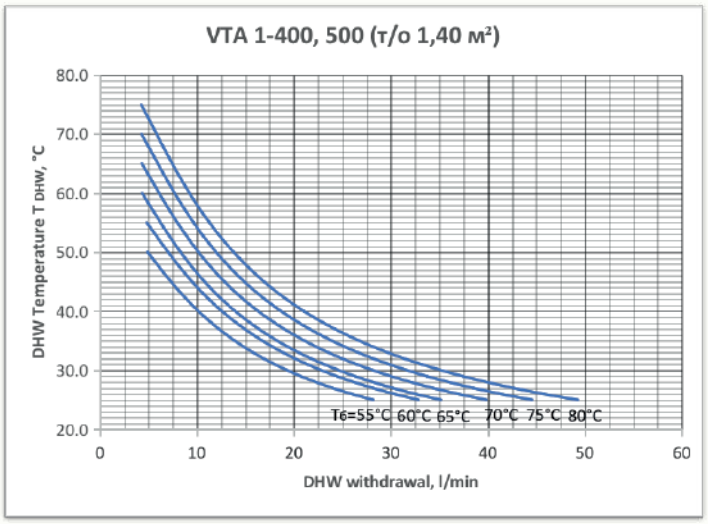


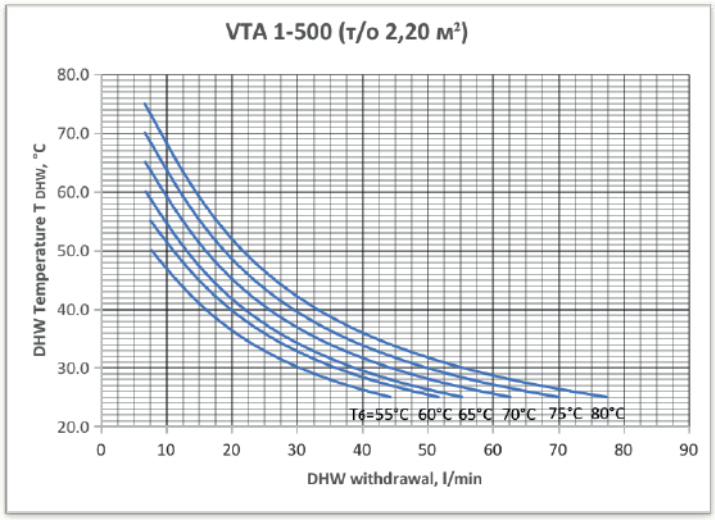
PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

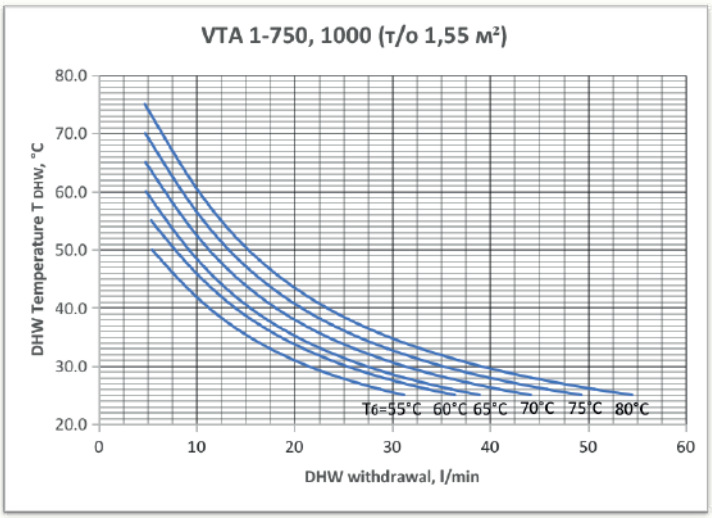


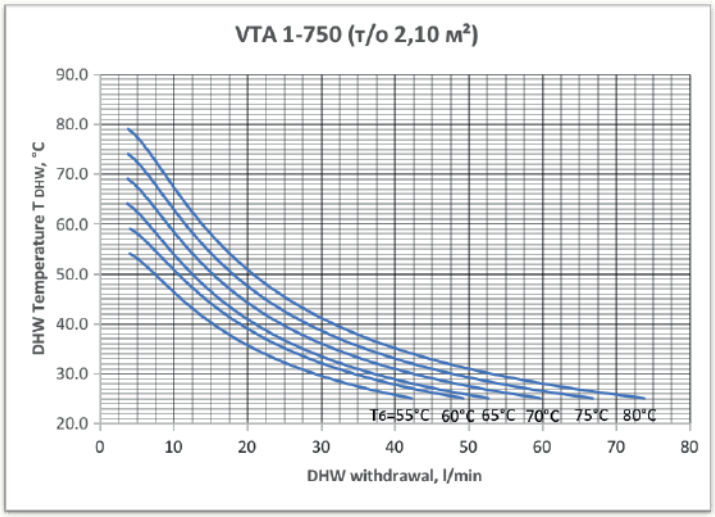
PERFORMANCE OF THE DHW HEAT EXCHANGER

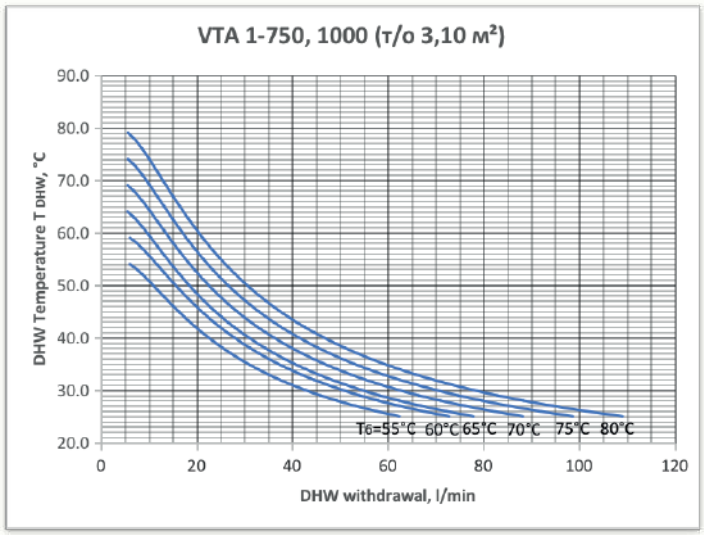
The performance of the DHW heat exchanger is expressed as the dependence of the heated water temperature TDHW, °C, on its flow rate V, l/min, through the heat exchanger for different values of the heat carrier temperature Tb, °C, in the water heater tank.

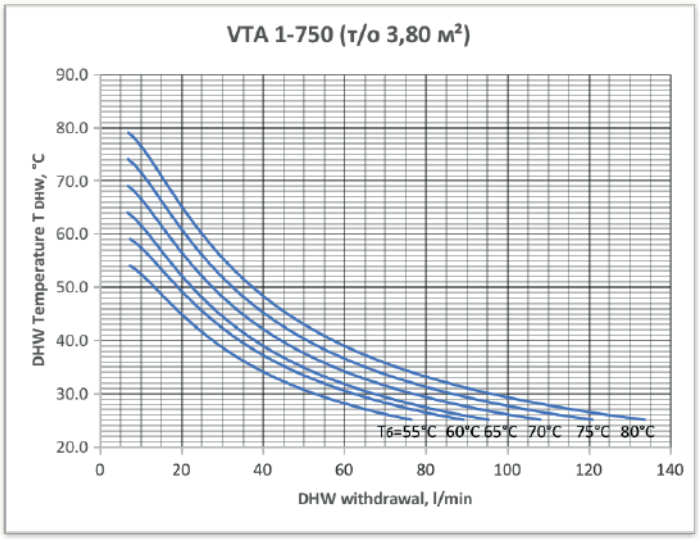




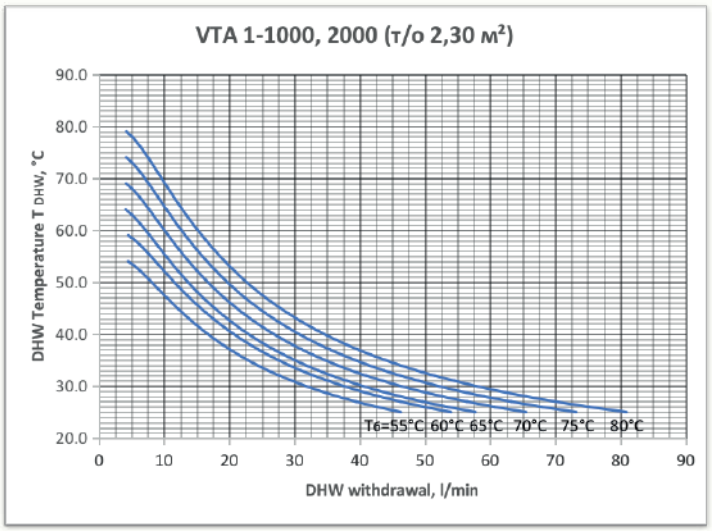


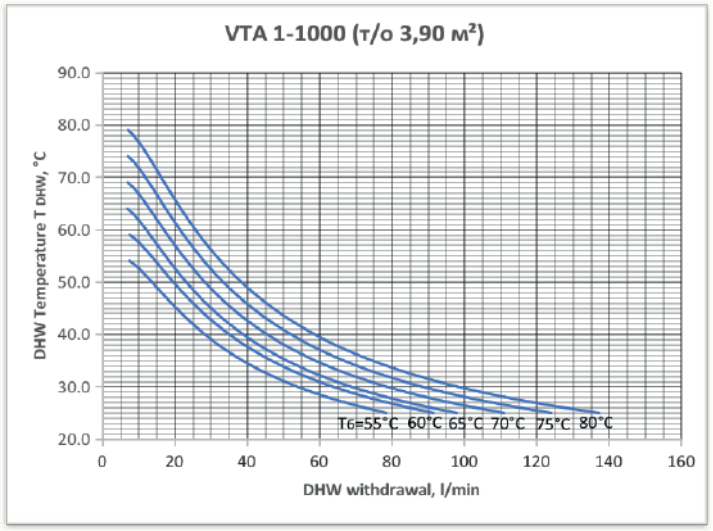


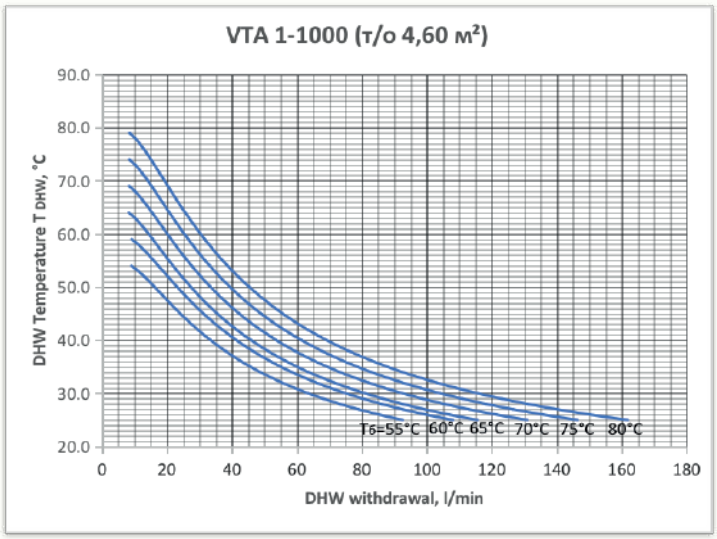


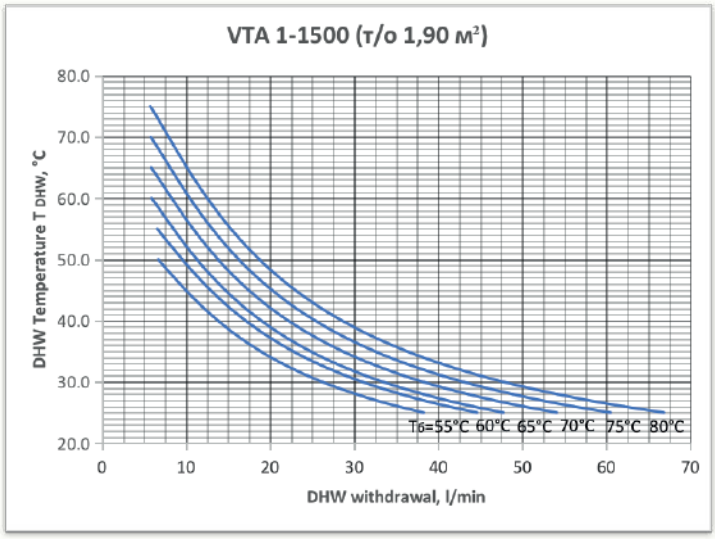


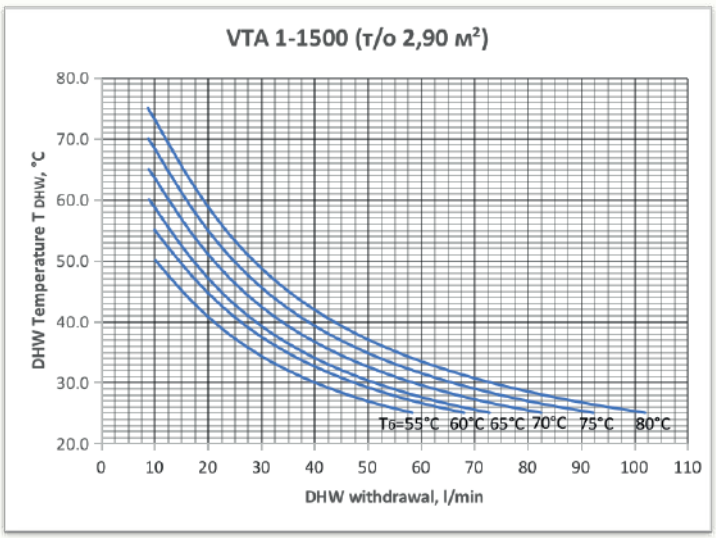
PERFORMANCE OF THE DHW HEAT EXCHANGER

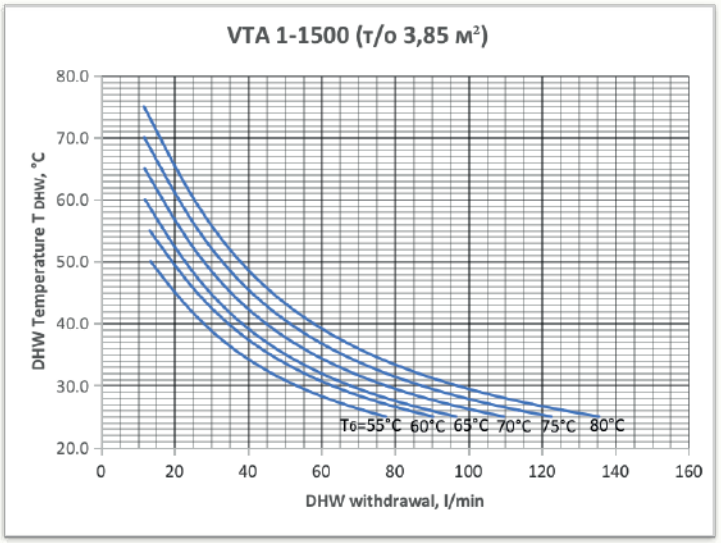




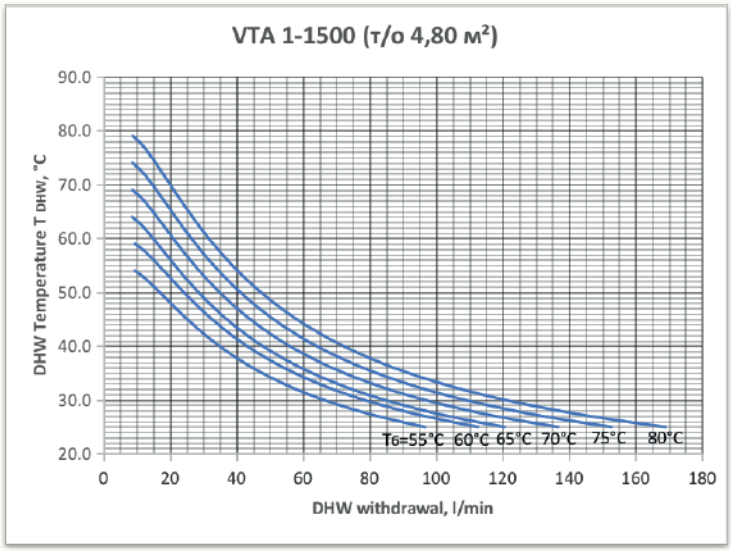


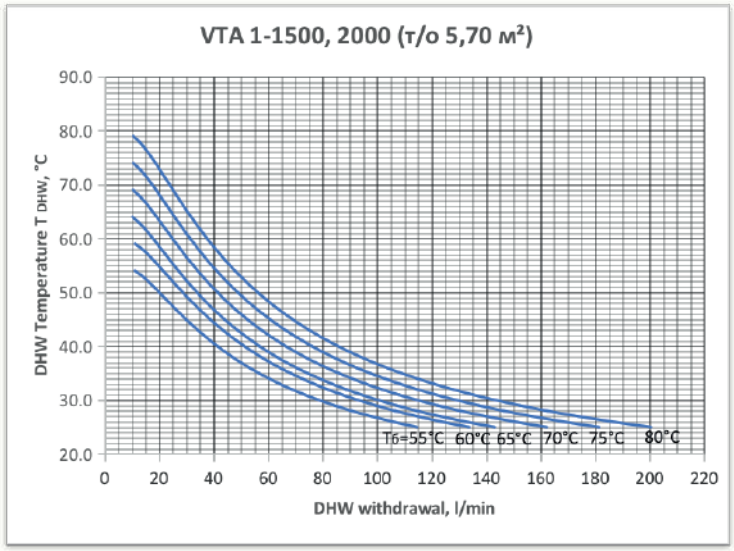


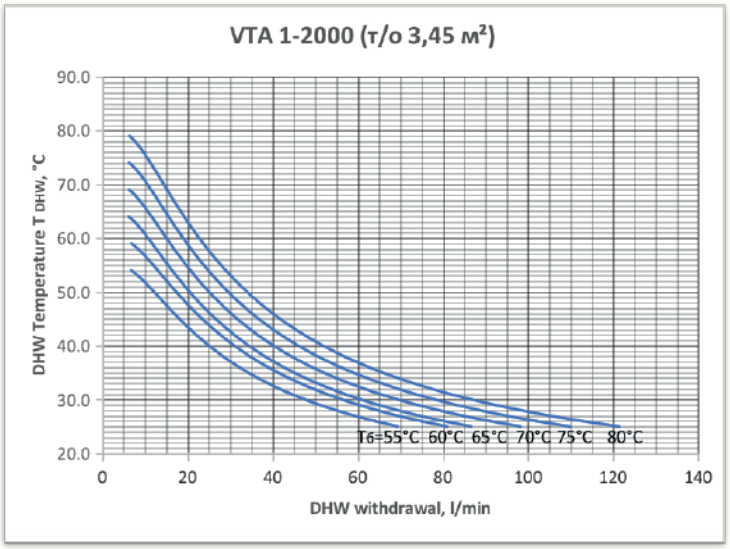


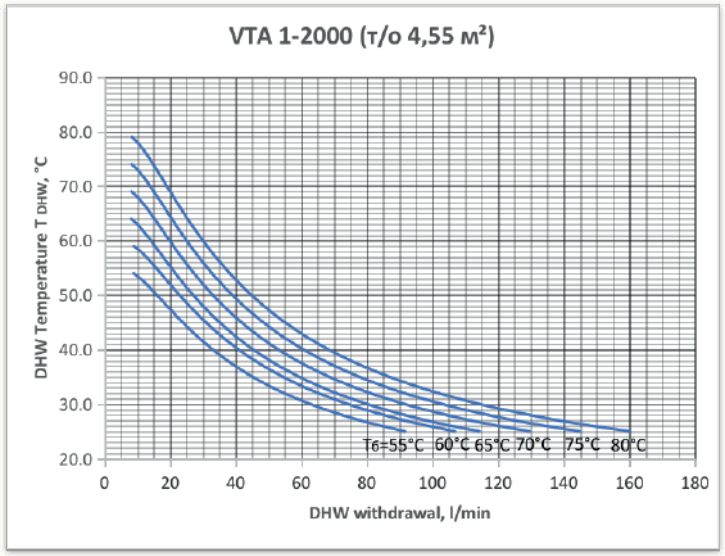


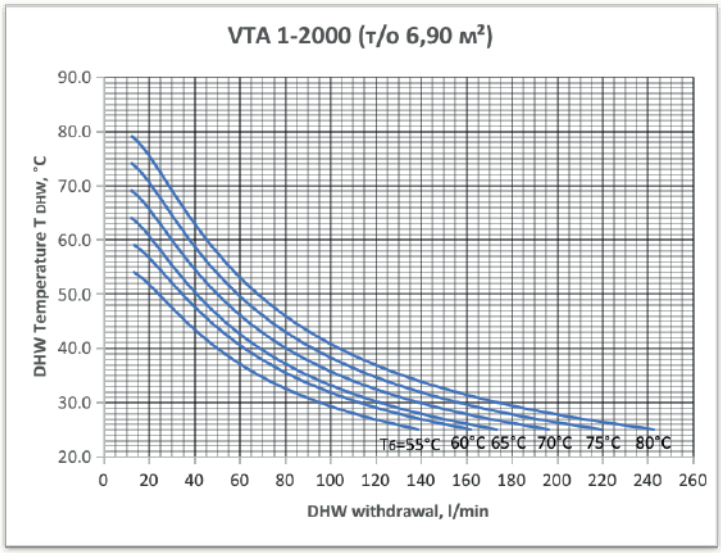
PERFORMANCE OF THE DHW HEAT EXCHANGER



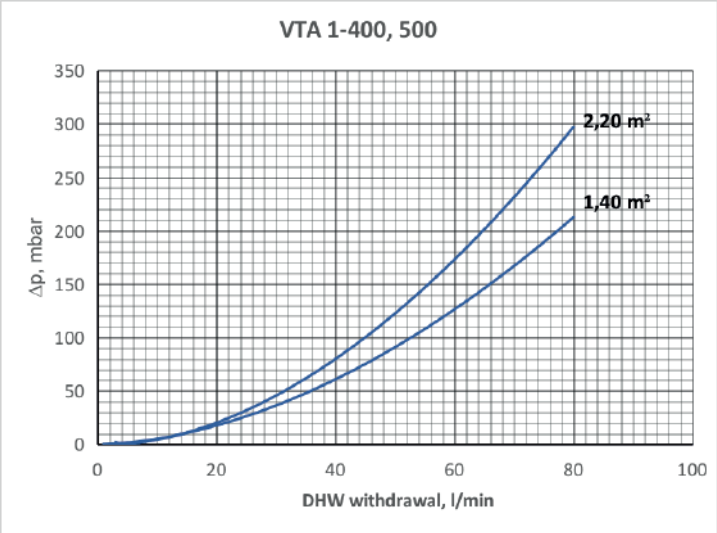


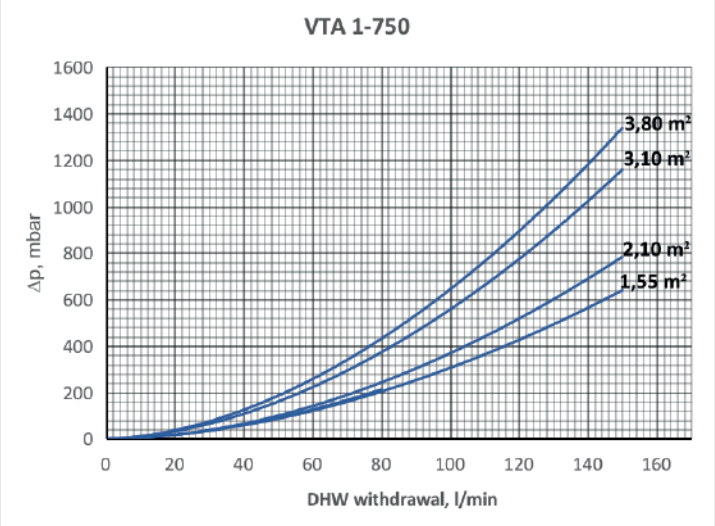


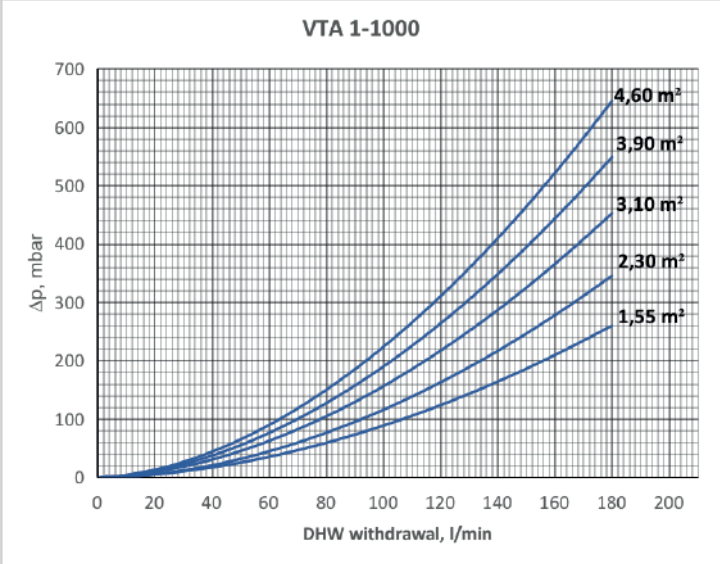


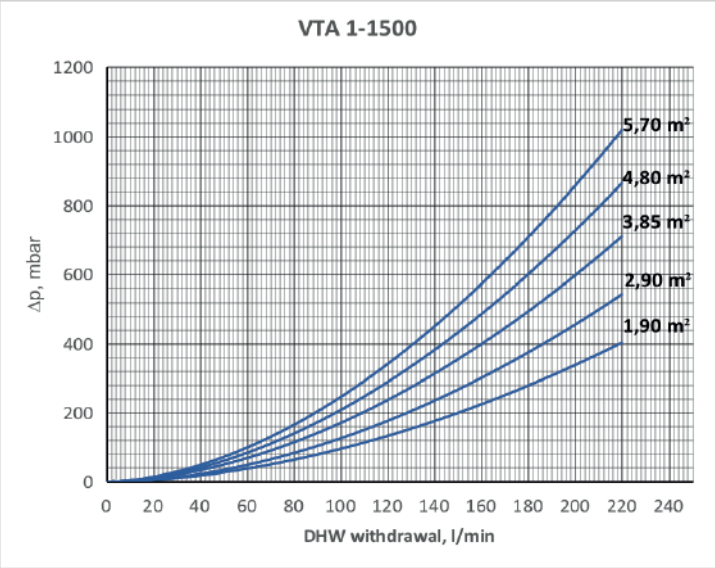


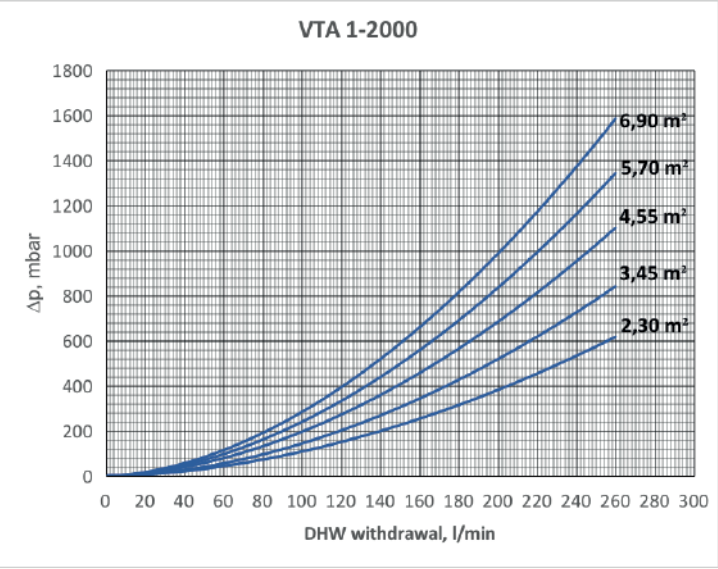
PRESSURE LOSSES OF THE DHW HEAT EXCHANGER





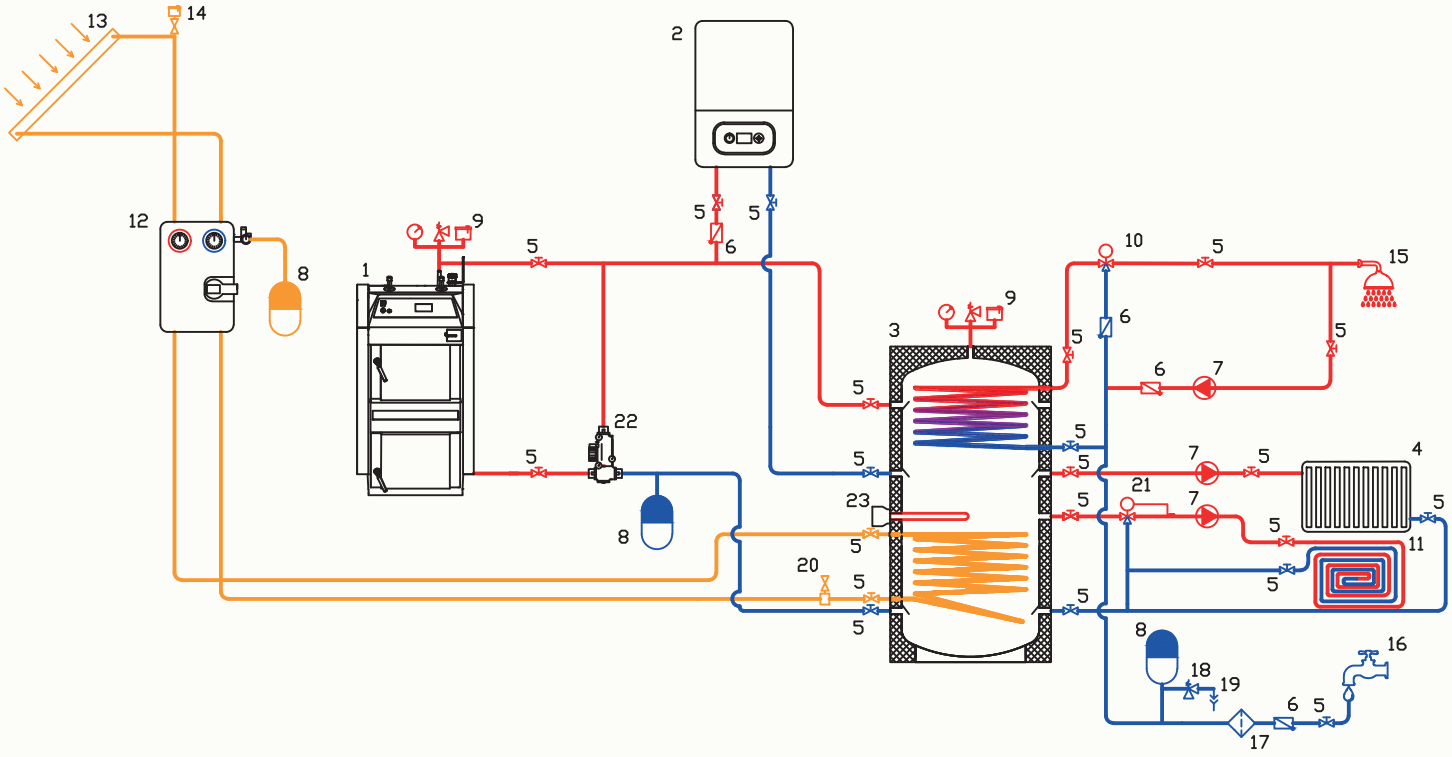






EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Solid fuel boiler	9	Safety group	17	Mesh filter
2	Gas or electric boiler	10	Three-way mixing valve	18	Safety valve
3	VTA 1 water heater	11	Underfloor heating circuit	19	Drainage
4	Radiator heating circuit	12	Circulation pump	20	Automatic air vent for solar circuit
5	Ball valve	13	Solar collector (solar thermal system)	21	Three-way valve with remote sensor for underfloor heating system
6	Check valve	14	Air vent for solar circuit	22	Laddomat thermal mixing device
7	Circulation pump	15	Domestic hot water system	23	Electric heat element
8	Expansion tank	16	Water supply system		

DESIGNED FOR HEAT ACCUMULATION IN HEATING SYSTEMS AND DOMESTIC HOT WATER PRODUCTION, WITH INTENSIVE HEAT EXTRACTION FROM SOLAR COLLECTORS

TECHNICAL DESCRIPTION

The storage tank is engineered to accumulate thermal energy from various sources, including solar collectors via the lower heat exchanger. The high-performance DHW heat exchanger, partially positioned in the zone of the lower heat exchanger, enhances heat transfer from the solar system, enabling greater energy utilization directly from solar input.

MATERIAL

The tank is made of carbon structural steel S235JR (DIN 1.0038). The external coating provides enhanced resistance to mechanical impact and aggressive environments.

HEAT EXCHANGERS

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation encased in zippered PVC fabric

PU/PVC – 90 mm flexible polyurethane foam insulation encased in PVC fabric secured with straps.

PL/ABS – 100 mm polyester insulation encased in ABS plastic with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation encased in ABS plastic. Premium-class insulation, fully compliant with **ErP 2009/125/EC Directive** requirements

CUSTOM DRAW

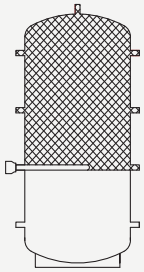
Design and production of water heaters tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

Tank		Heat exchanger of the external heating circuit	
P	T	P	T
3 bar	95°C	6 bar	95°C
DHW coil			
P		T	
10 bar		95°C	

Model	V tank, l	Heat exchanger of the external heating circuit		DHW Coil		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	S coil 2, m²	V coil 2, l	
400	413	1,5	10	2,00	14	B
500	483	1,5	10	2,85	20	B
750	773	1,5	10	4,35	38	C
1000	1008	1,8	14	5,10	44	C
1500	1449	2,3	18	6,30	57	C
2000	2158	2,3	18	7,30	67	C

*Energy efficiency class specified for PS/ABS insulation

ACCESSORIES

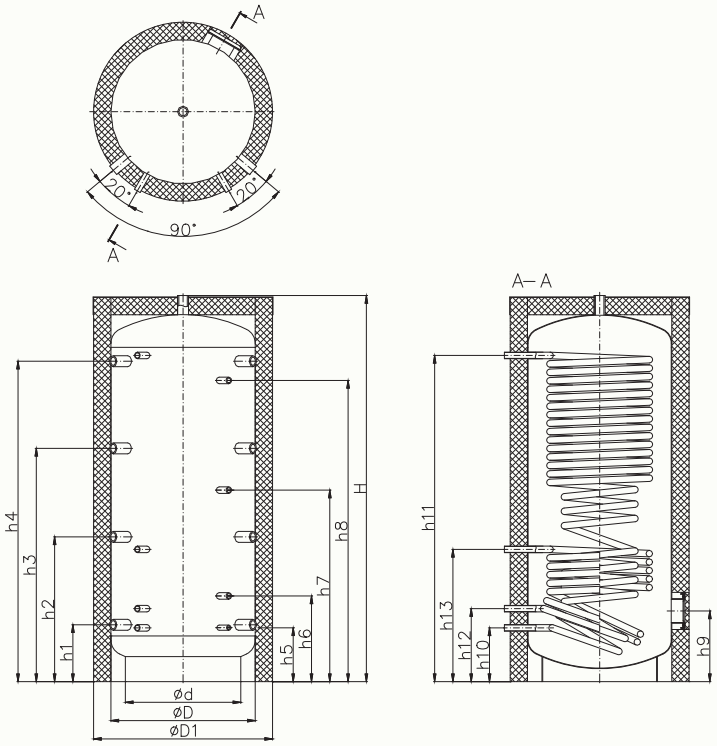


Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400	206	144	96	64	48	38	32	-	-
500	278	194	129	86	65	52	43	-	-
750	480	334	223	149	112	89	74	56	-
1000	623	434	289	193	145	116	97	73	58
1500	891	621	414	276	207	166	138	103	83
2000	1368	953	635	424	317	254	212	159	127

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

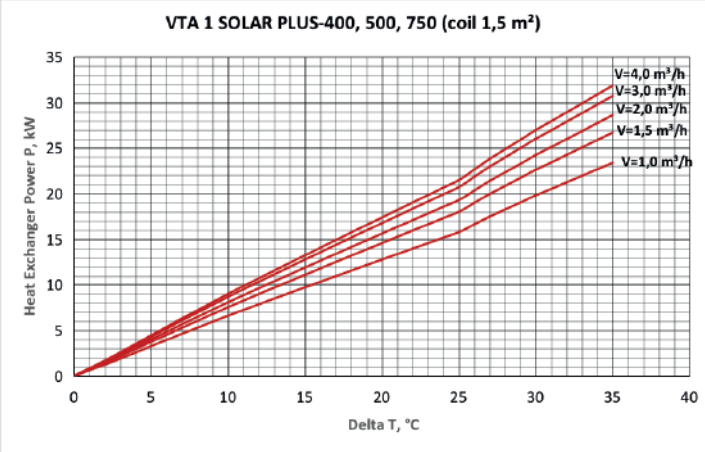
H, h1-h4	Connection of supply and return mains of heating circuits
h5	Process connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 mm
h10-h11	Connections of cold and hot water pipelines (Coil 2 - upper heat exchanger)
h12-h13	Connections of supply and return mains of the external heating circuit (Coil 1 - lower heat exchanger)

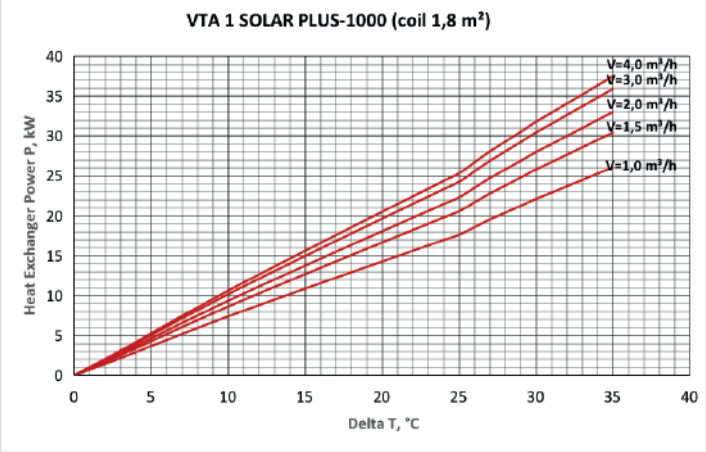
Model	Dimensions, mm				Connection sizes, mm												
	øD1	øD	ød	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11	h12	h13
400	800	600	450	1700	264	853	-	1406	249	414	-	1256	336	248	1414	348	788
					1 1/2"			1/2"	1/2"	3/4"		3/4"		1"			
500	800	600	450	1995	264	853	1181	1634	249	414	964	1534	336	248	1664	348	788
					1 1/2"				1/2"	3/4"				1"			
750	950	750	600	2010	295	796	1212	1665	280	445	995	1565	367	279	1695	379	731
					1 1/2"				1/2"	3/4"				1"	1 1/4"	1"	
1000	1050	850	700	2060	323	826	1240	1693	308	473	1023	1593	395	311	1719	411	761
					1 1/2"				1/2"	3/4"				1"	1 1/4"		
1500	1200	1000	850	2150	368	871	1285	1738	353	518	1068	1638	440	356	1764	456	806
					1 1/2"				1/2"	3/4"				1 1/4"			
2000	1400	1200	1000	2250	419	876	1336	1789	404	569	1119	1689	491	407	1815	507	807
					1 1/2"				1/2"	3/4"				1 1/4"			

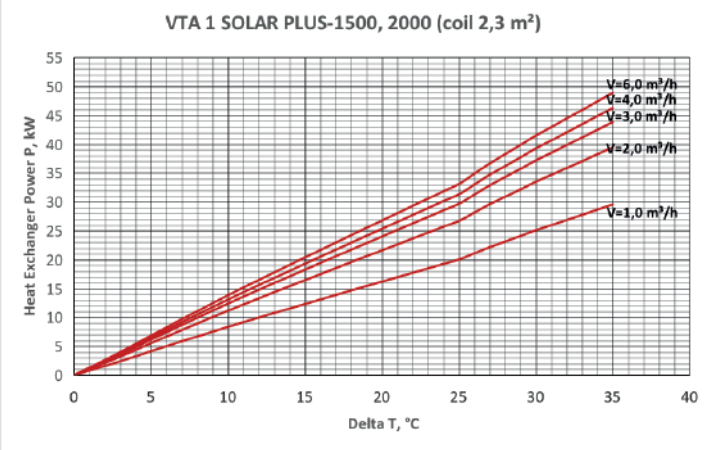
LOWER HEAT EXCHANGER CAPACITY

The capacity of the lower heat exchanger, P (kW), is presented as a function of the temperature difference, ΔT (°C), between the heat transfer fluid supply entering the heat exchanger and the average tank temperature in the lower heat exchanger zone, at a specific circulation rate of the heat transfer fluid, V (m³/h), within the exchanger.

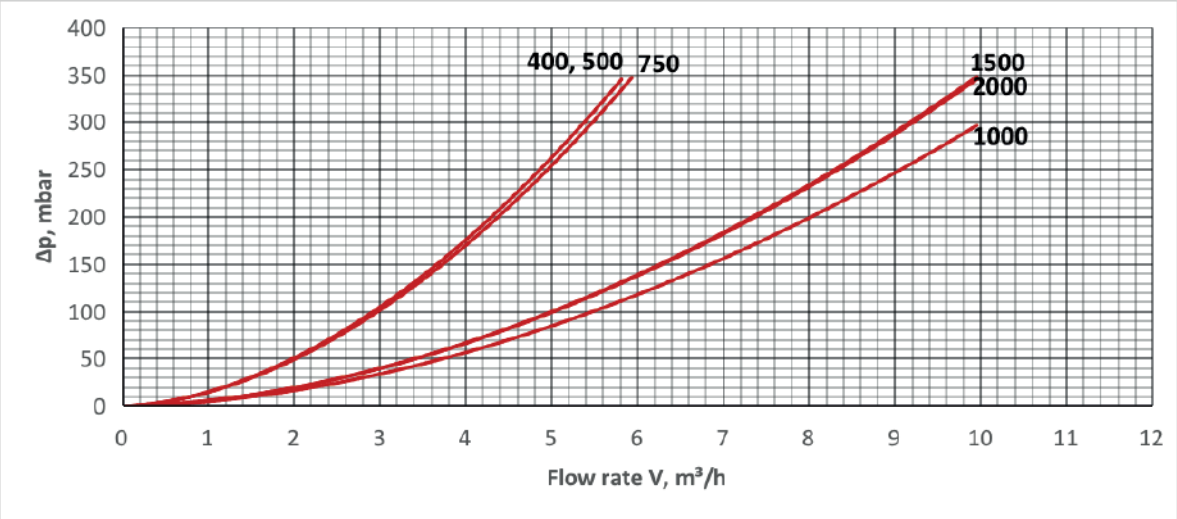
For example, consider a VTA 1 SOLAR PLUS 750 water heater tank where the average temperature in the lower heat exchanger zone is 40°C, and the heat transfer fluid flowing through the exchanger has a temperature of 70°C with a circulation rate of 2 m³/h. In this case, the temperature difference ΔT = 70 - 40 = 30°C, and the approximate capacity of the lower heat exchanger is 24 kW .





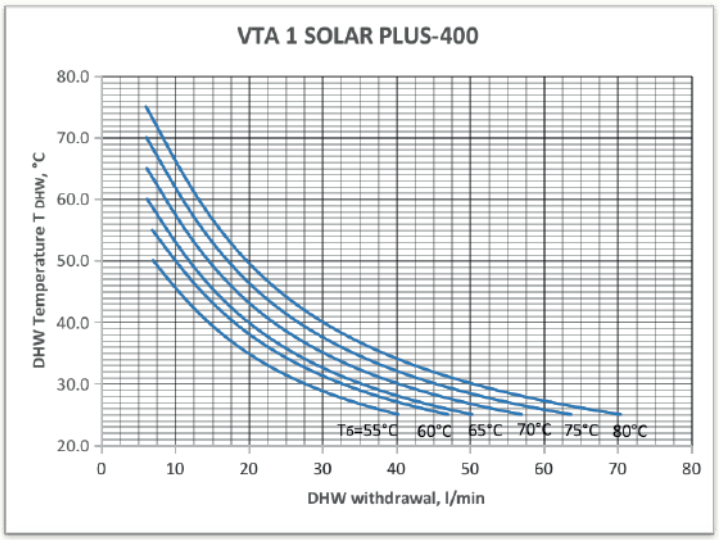


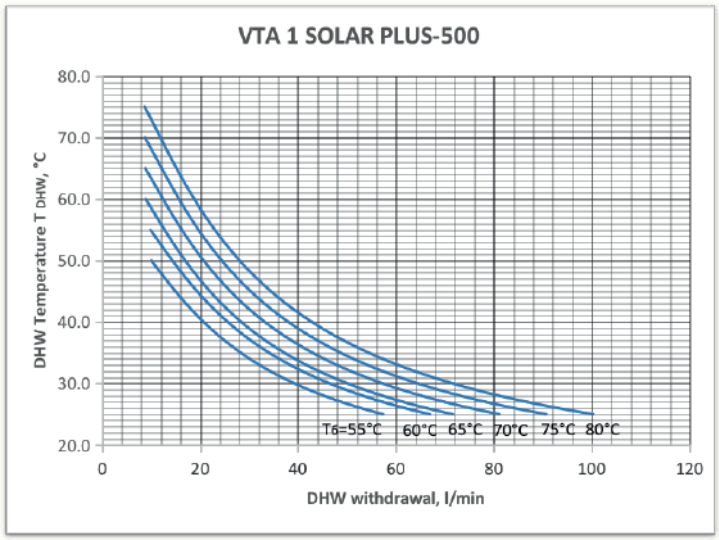
PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

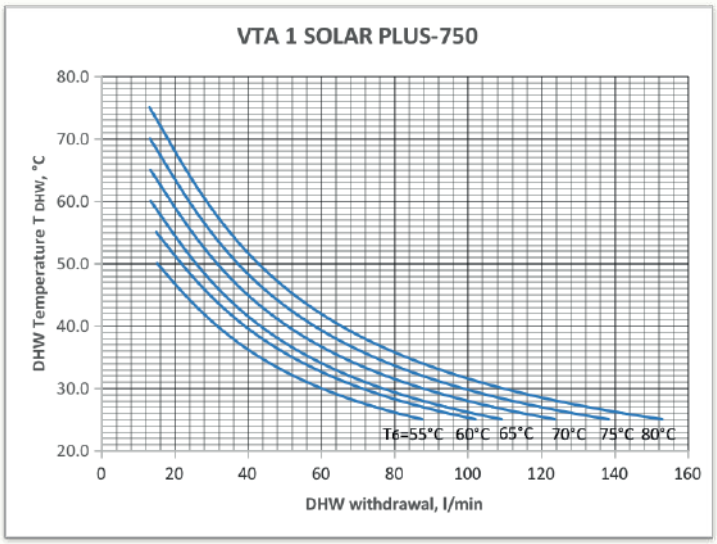


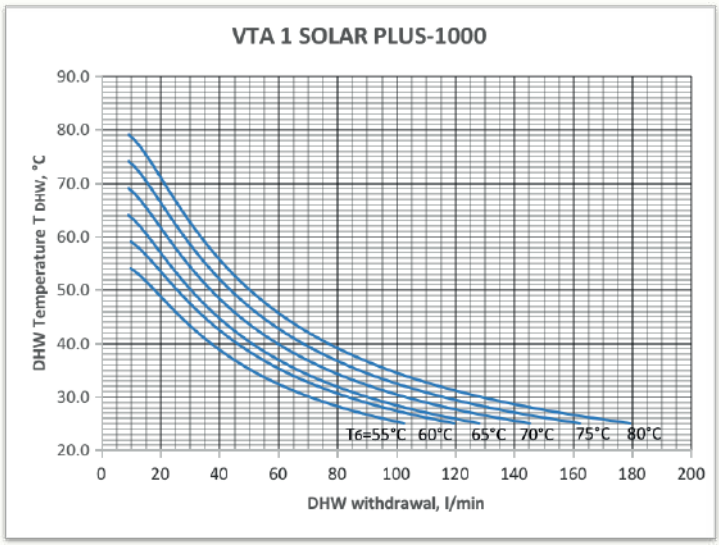
PERFORMANCE OF THE DHW HEAT EXCHANGER

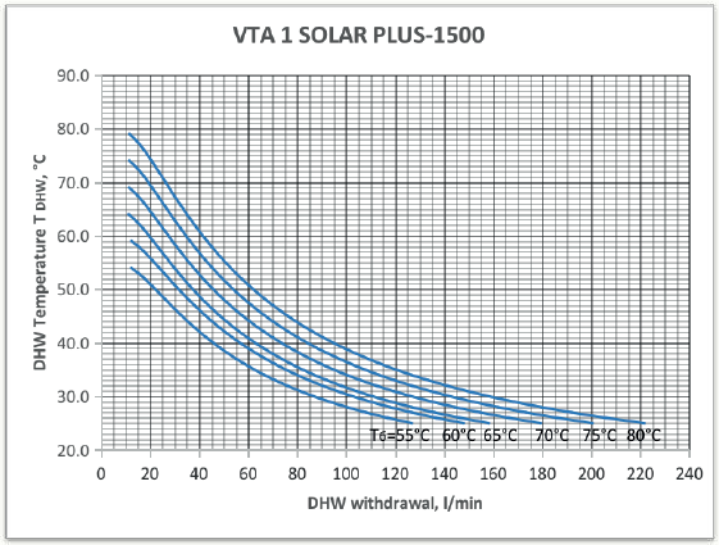
The performance of the DHW heat exchanger is expressed as the dependence of the heated water temperature T_{DHW}, °C, on its flow rate V, l/min, through the heat exchanger for different values of the heat carrier temperature T_T, °C, in the water heater tank.

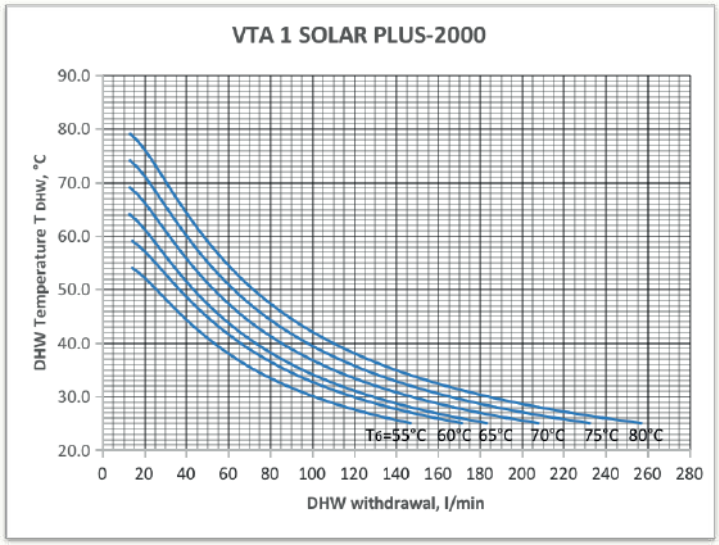




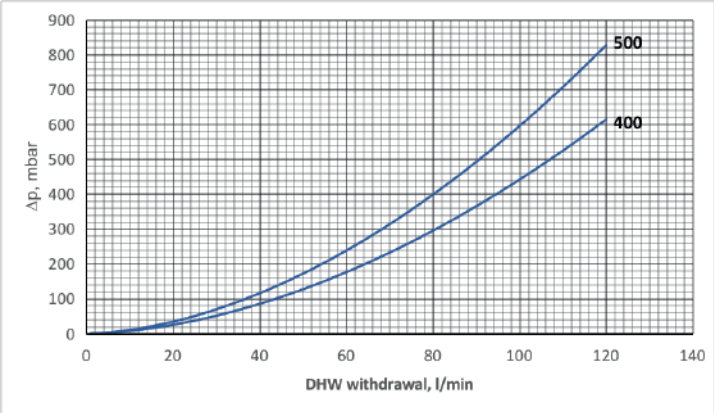


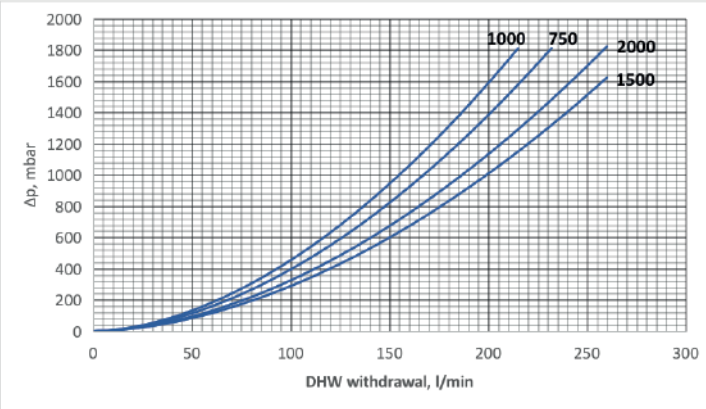






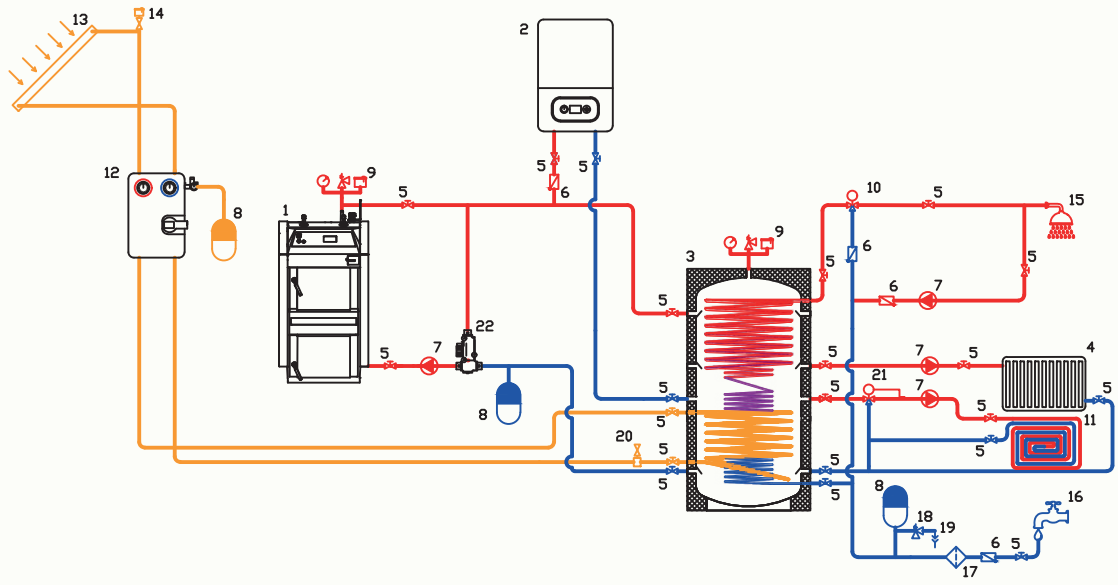
PRESSURE LOSSES OF THE DHW HEAT EXCHANGER





EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Solid fuel boiler	9	Safety group	17	Mesh filter
2	Gas or electric boiler	10	Three-way mixing valve	18	Safety valve
3	VTA 1 Solar Plus water heater	11	Underfloor heating circuit	19	Drainage
4	Radiator heating circuit	12	Circulation pump	20	Automatic air vent for solar circuit
5	Ball valve	13	Solar collector (solar thermal system)	21	Three-way valve with remote sensor for underfloor heating system
6	Check valve	14	Air vent for solar circuit	22	Laddomat thermal mixing device
7	Circulation pump	15	Domestic hot water system		
8	Expansion tank	16	Water supply system		

DESIGNED FOR HEAT ACCUMULATION
IN HEATING SYSTEMS AND DHW PRODUCTION

TECHNICAL DESCRIPTION

The storage tank is engineered to accumulate thermal energy from various heat sources. The DHW heat exchanger is positioned in the upper part of the tank, enabling the use of the highest-temperature heat transfer fluid for rapid and efficient heating of DHW in the quantities required by the consumer.

Tank		DHW Coil	
P	T	P	T
3 bar	95°C	6 bar	95°C

MATERIAL

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

HEAT EXCHANGERS

The DHW heat exchanger is manufactured from AISI 304L (DIN 1.4307) stainless steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation encased in zippered PVC fabric

PU/PVC – 90 mm flexible polyurethane foam insulation encased in PVC fabric secured with straps.

PL/ABS – 100 mm polyester insulation encased in ABS plastic with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation encased in ABS plastic. Premium-class insulation, fully compliant with **ErP 2009/125/EC Directive** requirements

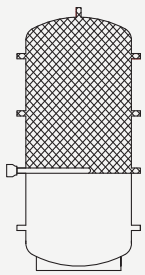
Model	V tank, l	DHW Coil		Energy efficiency class of insulation*
		S coil 2, m²	V coil 2, l	
400	413	1,4	10	B
500	483	1,4	10	B
		2,2	15	
750	773	1,55	11	C
		2,1	15	
		3,1	22	
		3,8	27	
1000	1008	1,55	14	C
		2,3	21,5	
		3,1	28,5	
		3,9	35,5	
		4,6	42,5	
1500	1449	1,99	18	C
		2,9	27	
		3,85	36,5	
		4,8	45,5	
		5,7	45,5	
2000	2158	2,3	22	C
		3,45	32,5	
		4,56	43,5	
		5,7	54,5	
		6,9	65	

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Design and production of water heaters tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

ACCESSORIES

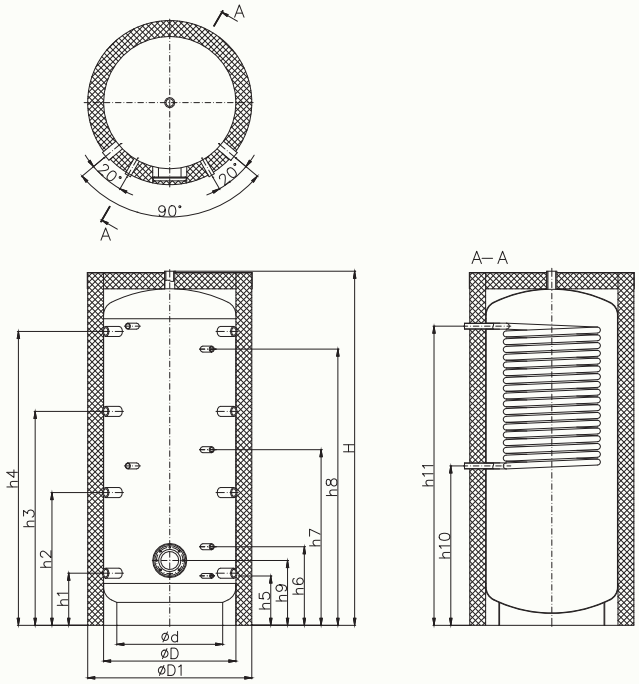


Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400	212	148	98	66	49	39	33	-	-
500	314	219	146	97	73	58	49	-	-
750	500	348	232	155	116	93	77	58	
1000	650	453	302	201	151	121	101	75	60
1500	926	645	430	287	215	172	143	108	86
2000	1370	954	636	434	318	255	212	159	127

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



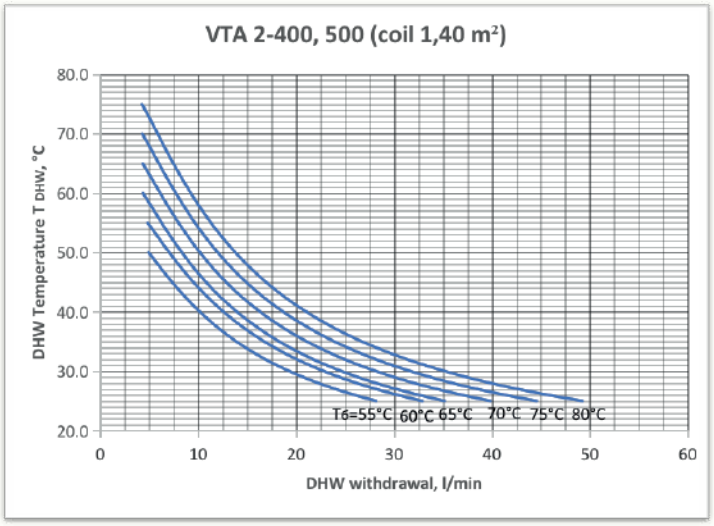
DESIGNATION

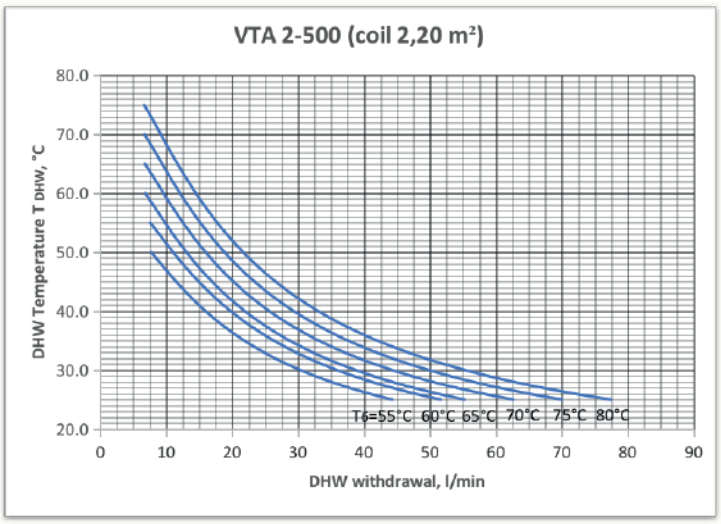
H, h1-h4	Connection of supply and return mains of heating circuits
h5	Process connection
h6-h8	Temperature sensor connections
h9	Flange, Ø120 mm
h10-h11	Connections of cold and hot water pipelines (Coil 2 - upper heat exchanger)

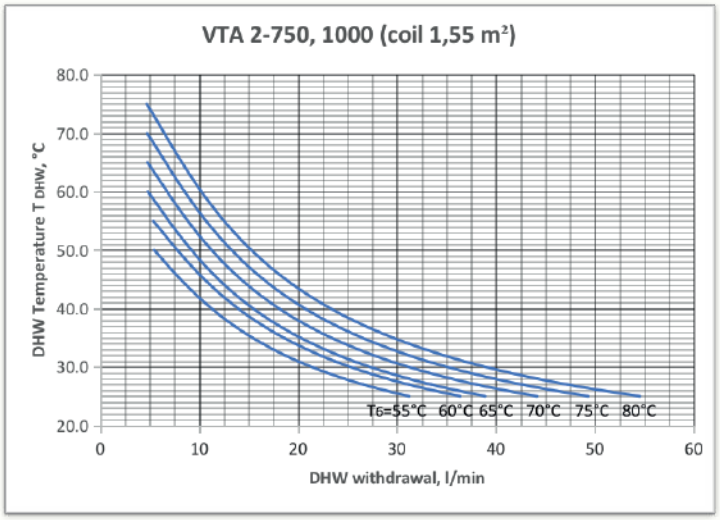
Model	S coil 2, m²	Dimensions, mm				Connection sizes, mm										
		ØD1	Ø D	Ø d	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h10	h11
400	1,4	800	600	450	1700	264	834	-	1406	249	414	-	1256	336	930	1414
					1 1/2"	1 1/2"				1/2"	3/4"				1"	
500	1,4	800	600	450	1995	264	721	1181	1634	249	414	964	1534	336	1180	1664
	2,2														872	
					1 1/2"	1 1/2"				1/2"	3/4"				1"	
750	1,55	950	750	600	2010	295	752	1212	1665	280	445	995	1565	367	1299	1695
	2,1														1167	
	3,1														903	
	3,8														903	
					1 1/2"	1 1/2"				1/2"	3/4"				1"	
1000	1,55	1050	850	700	2060	323	780	1240	1693	308	473	1023	1593	395	1419	1719
	2,3														1269	
	3,1														1119	
	3,9														969	
	4,6														819	
					1 1/2"	1 1/2"				1/2"	3/4"				1 1/4"	
1500	1,99	1200	1000	850	2150	368	825	1285	1738	353	518	1068	1638	440	1464	1764
	2,9														1314	
	3,85														1164	
	4,8														1014	
	5,7														864	
					1 1/2"	1 1/2"				1/2"	3/4"				1 1/4"	
2000	2,3	1400	1200	1000	2250	419	876	1336	1789	404	569	1119	1689	491	1515	1815
	3,45														1365	
	4,56														1215	
	5,7														1065	
	6,9														915	
					1 1/2"	1 1/2"				1/2"	3/4"				1 1/4"	

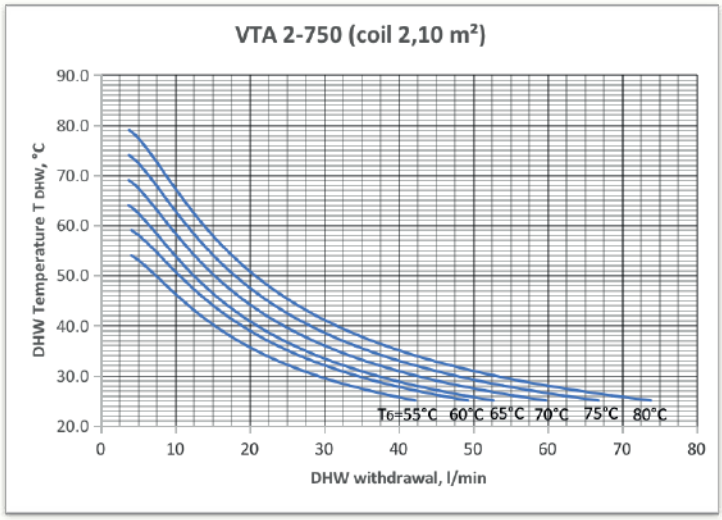
DHW HEAT EXCHANGER PERFORMANCE

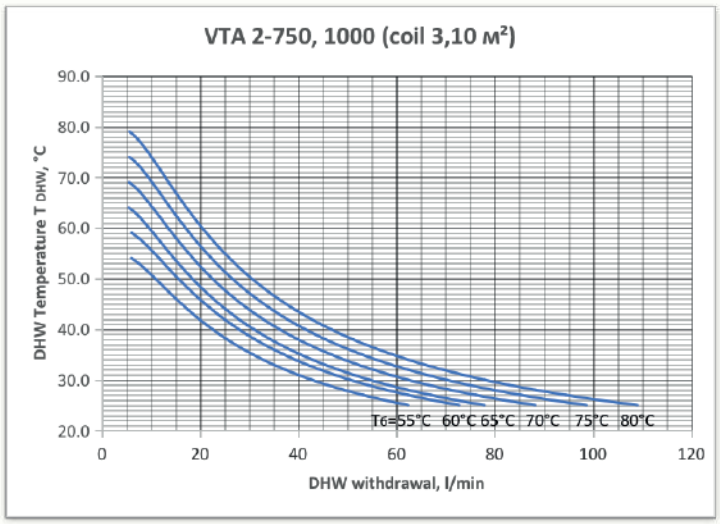
The performance of the DHW heat exchanger is expressed as the temperature of the heated water, T_{DHW} (°C), as a function of its flow rate, V (l/min), through the heat exchanger, for varying temperatures of the heat transfer fluid, T_T (°C), within the water heater tank.

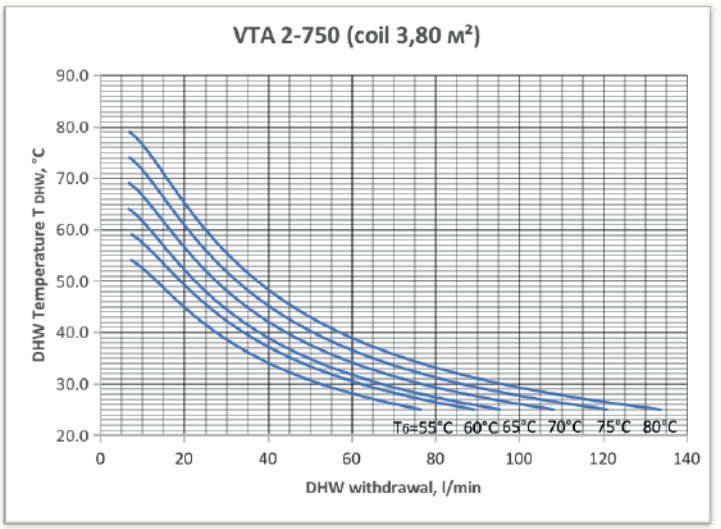




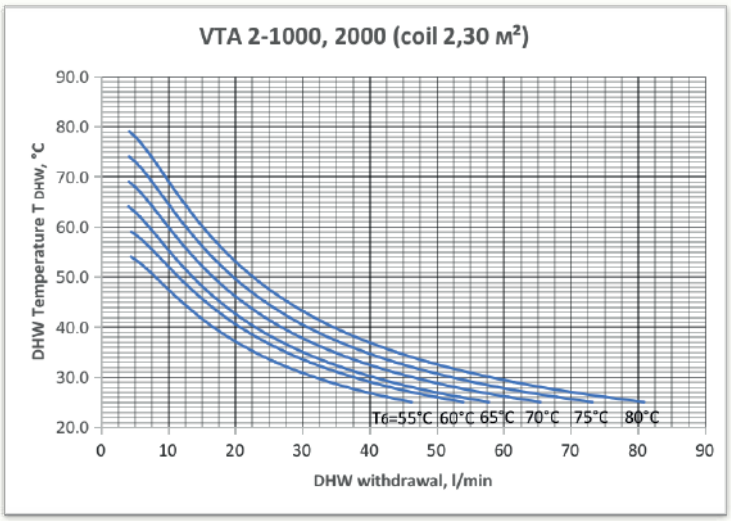


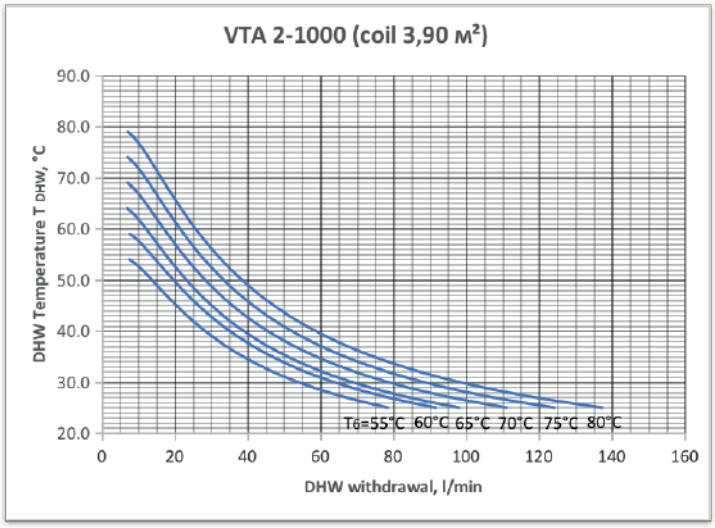


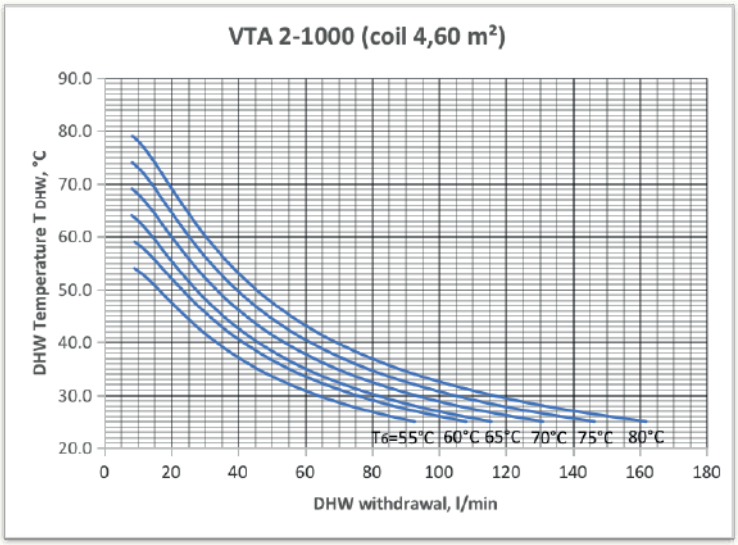


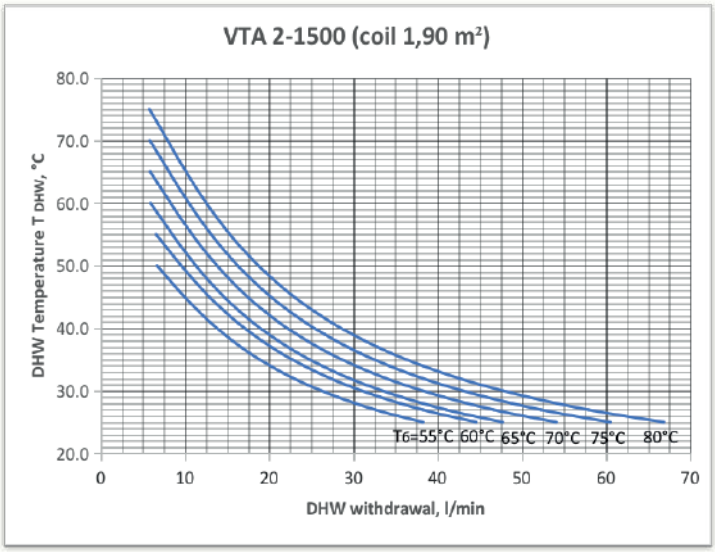


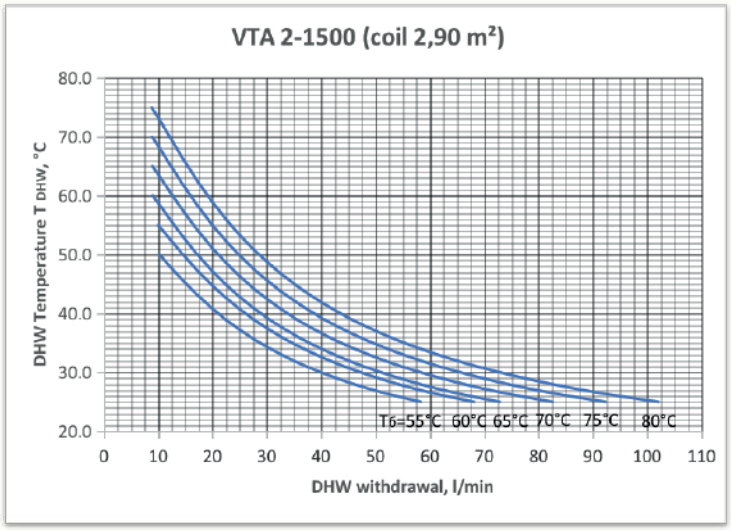
DHW HEAT EXCHANGER PERFORMANCE

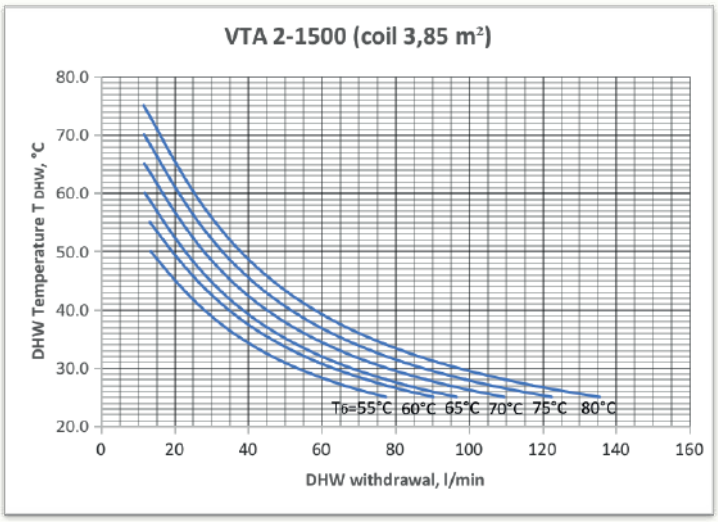




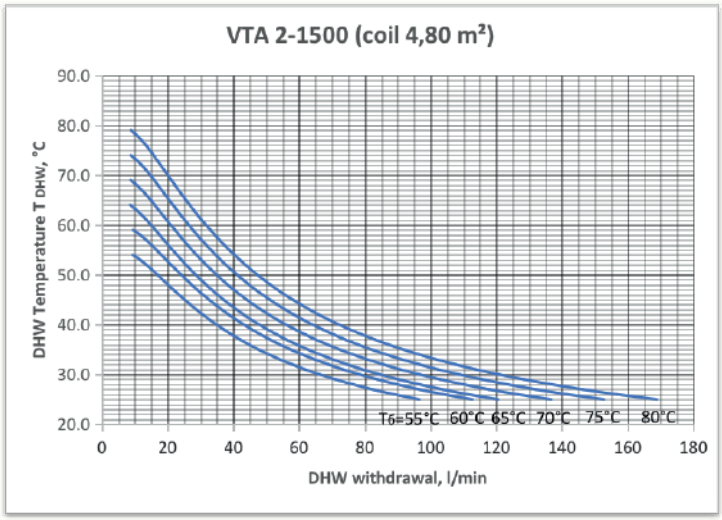


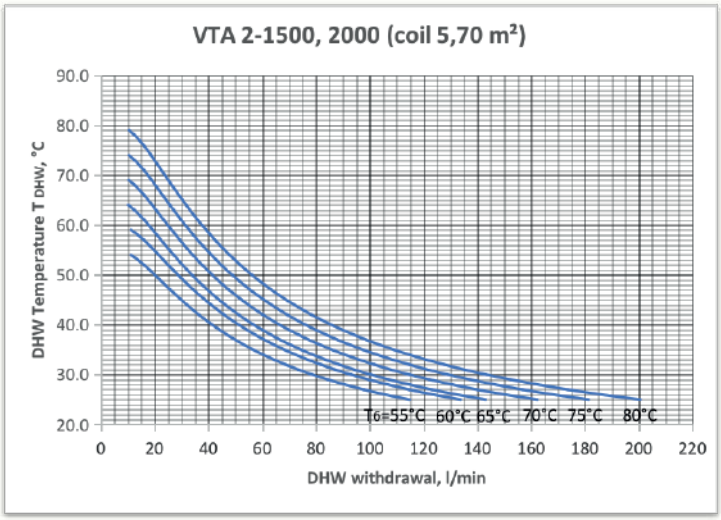


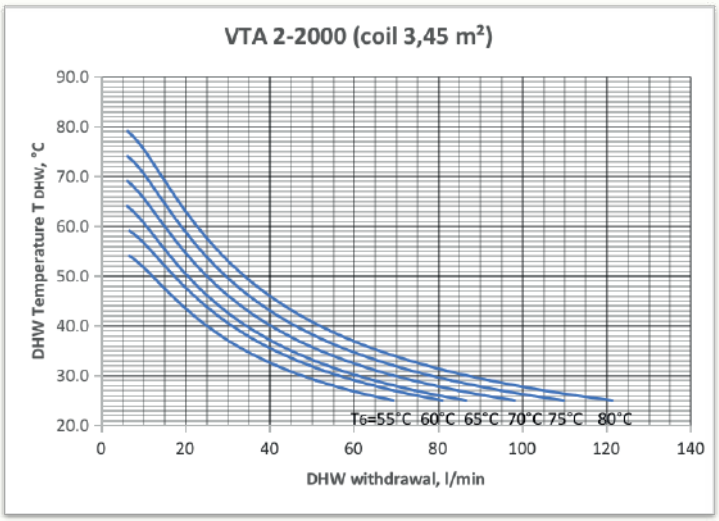


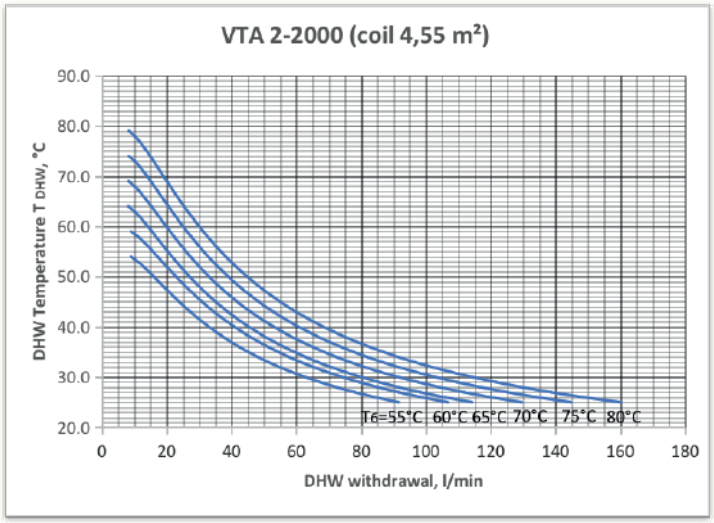


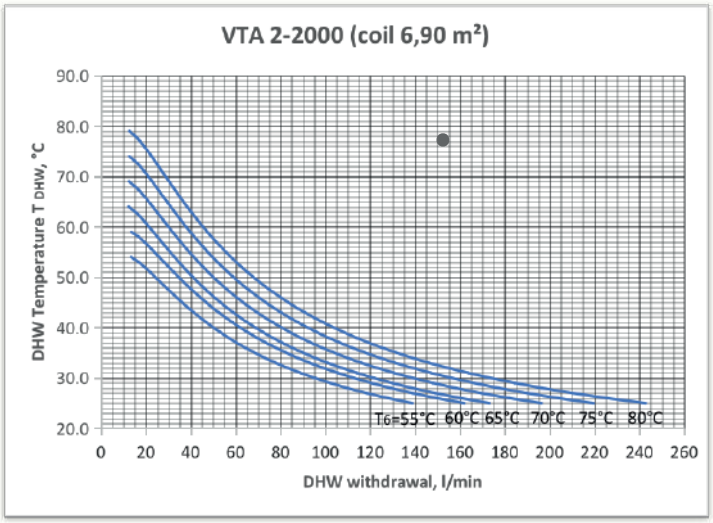
DHW HEAT EXCHANGER PERFORMANCE



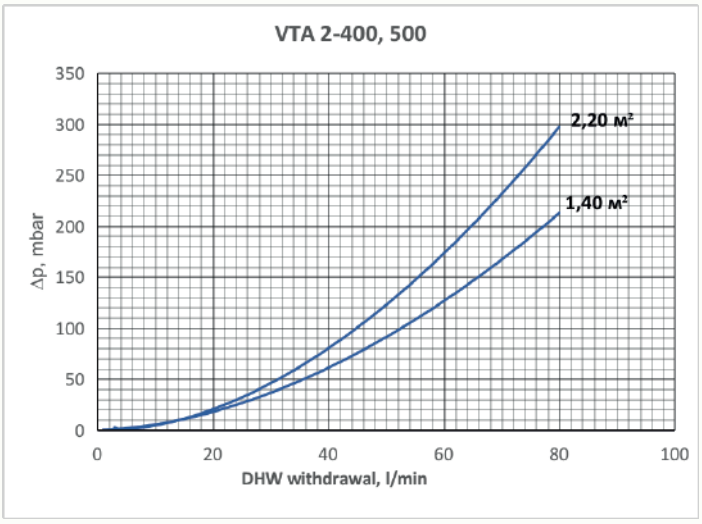


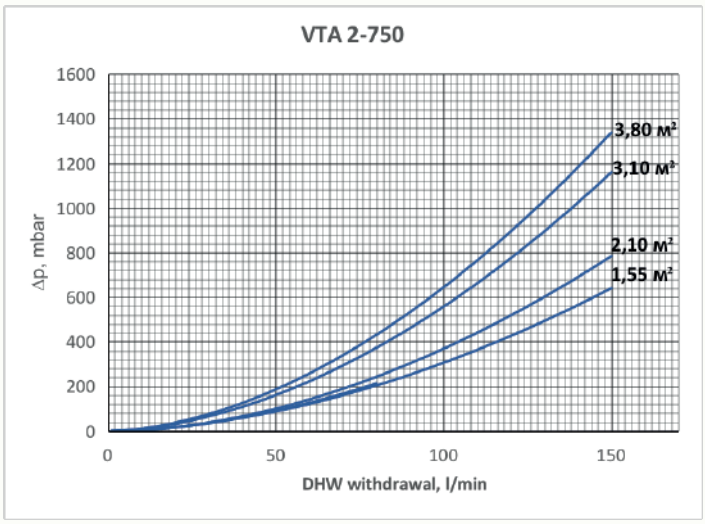


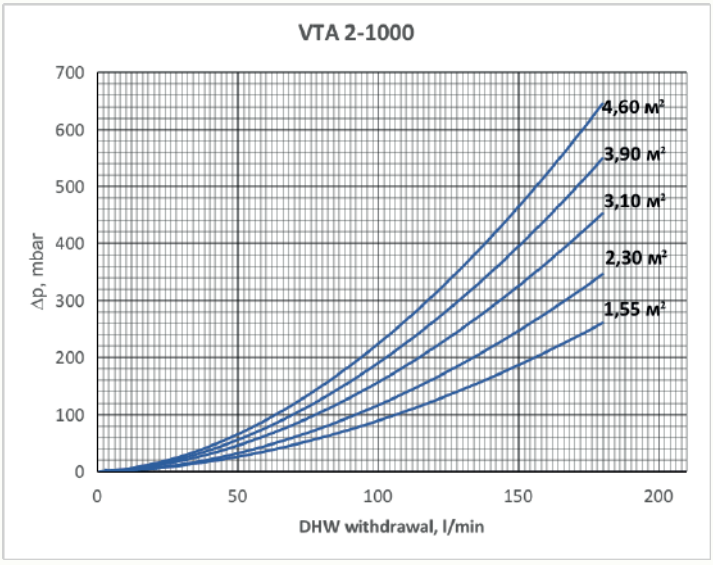


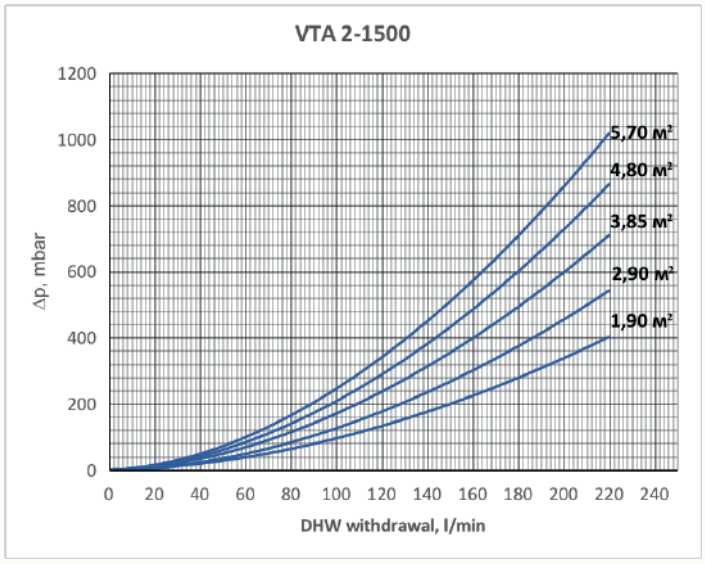


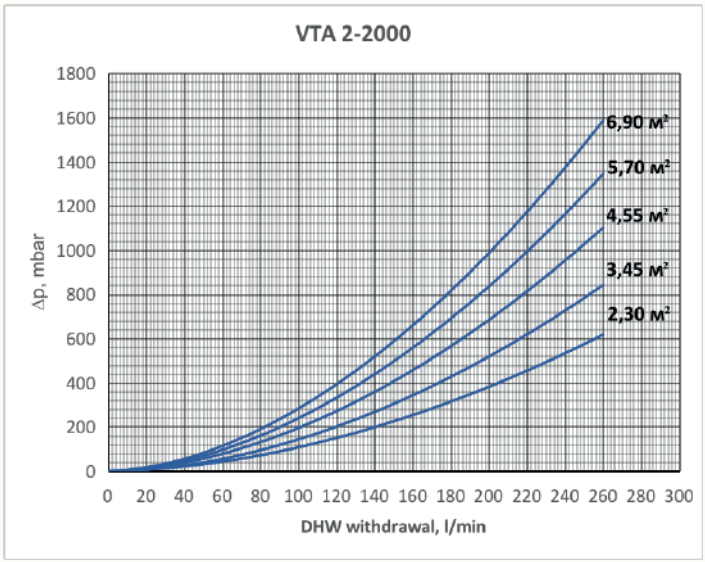
PRESSURE LOSSES OF THE DHW HEAT EXCHANGER





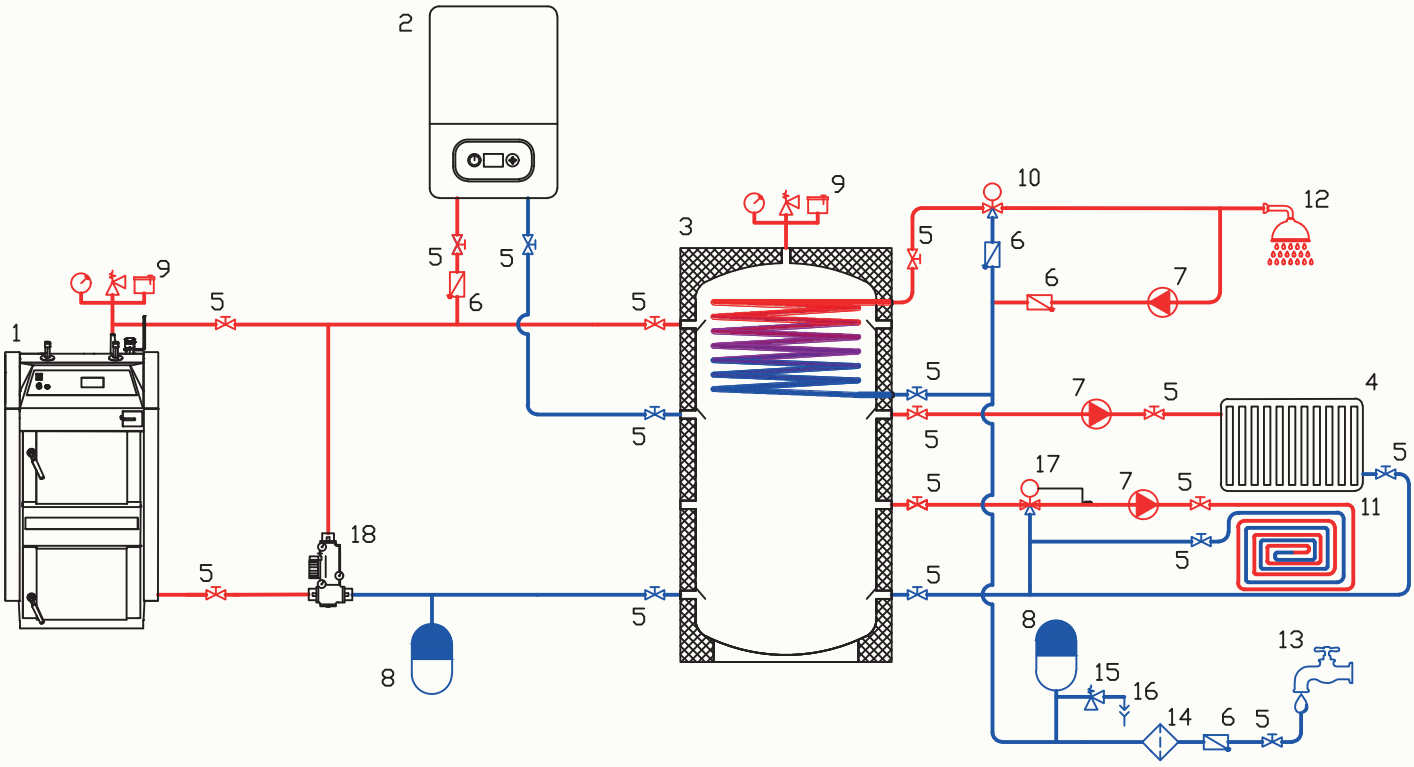






EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Solid fuel boiler	7	Circulation pump	13	Water supply system
2	Gas or electric boiler	8	Expansion tank	14	Strainer filter
3	VTA 2 water heater	9	Safety group	15	Domestic hot water system
4	Radiator heating circuit	10	Three-way mixing valve	16	Drainage
5	Ball valve	11	"Warm floor" heating circuit	17	Three-way valve with remote sensor for the "warm floor" system
6	Check valve	12	Domestic hot water system		

DESIGNED FOR HEAT ACCUMULATION IN HEATING SYSTEMS

TECHNICAL DESCRIPTION

The storage tank is engineered to accumulate thermal energy from various sources, including solar collectors via the lower heat exchanger.

MATERIAL

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

HEAT EXCHANGERS

Lower Heat Exchanger (External Heating Circuit): Manufactured from C22 (DIN 1.0402) carbon steel.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation encased in zippered PVC fabric

PU/PVC – 90 mm flexible polyurethane foam insulation encased in PVC fabric secured with straps.

PL/ABS – 100 mm polyester insulation encased in ABS plastic with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation encased in ABS plastic. Premium-class insulation, fully compliant with **ErP 2009/125/EC Directive** requirements

CUSTOM DRAW

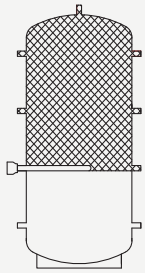
Design and production of water heaters tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

Tank		Heat Exchanger for the External Heating Circuit	
P	T	P	T
3 bar	95°C	6 bar	95°C

Model	V tank, l	Heat exchanger of the external heating circuit		Energy efficiency class of insulation*
		S coil 1, m²	V coil 1, l	
400	413	1,5	10	B
500	483	1,5	10	B
750	773	1,5	10	C
1000	1008	1,8	15,5	C
1500	1449	2,3	19,5	C
2000	2158	2,3	19,5	C

*Energy efficiency class specified for PS/ABS insulation

ACCESSORIES

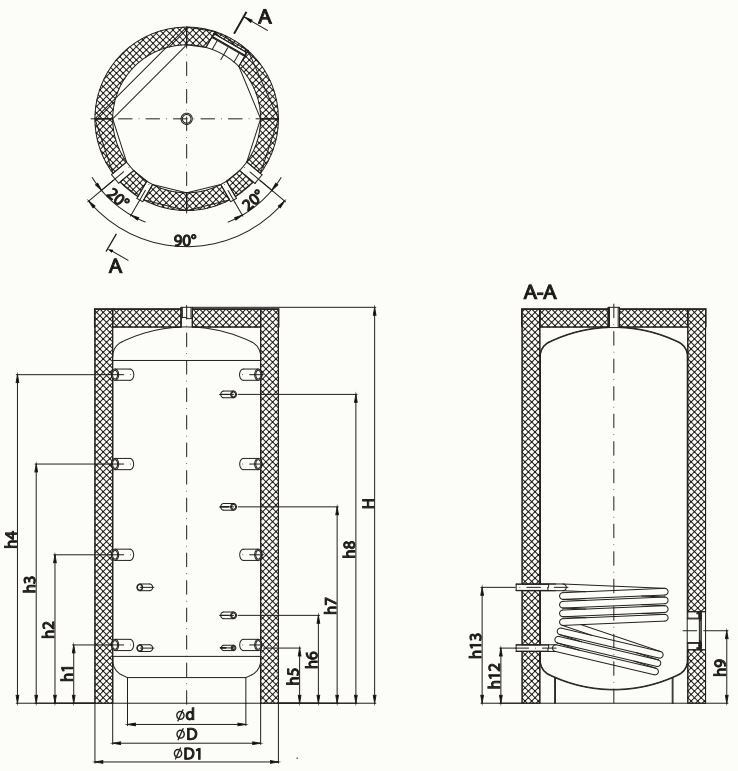


Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Heating time for ΔT=20°, minutes							
400	212	148	98	66	49	39	33	-	-
500	309	215	144	96	72	57	48	-	-
750	500	348	232	155	116	93	77	58	-
1000	650	453	302	201	151	121	101	75	60
1500	926	645	430	287	215	172	143	108	86
2000	1370	954	636	424	318	255	212	159	127

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION



DESIGNATION

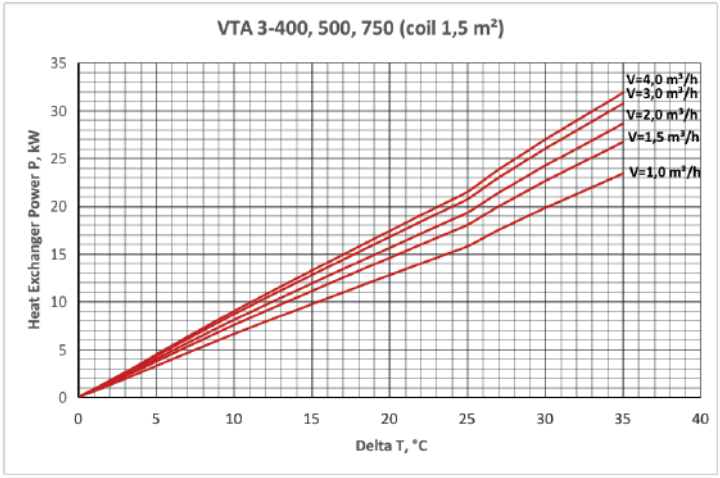
H, h1-h4	Connection of supply and return mains of heating circuits
h5	Technological connection
h6-h8	Connections for temperature sensors
h9	Flange, Ø120 mm
h12-h13	onnections for supply and return lines of the external heating circuit (Coil 1 - lower heat exchanger)

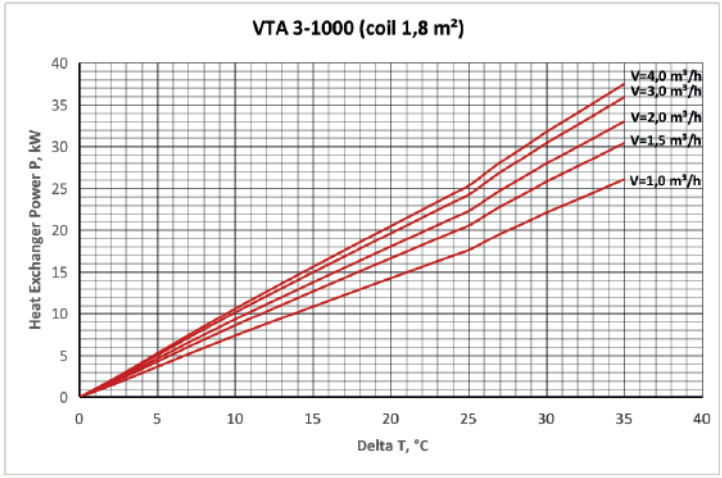
Model	Dimensions, mm				Connection sizes, mm										
	øD1	øD	ød	H	h1	h2	h3	h4	h5	h6	h7	h8	h9	h12	h13
400	800	600	450	1700	264	834	-	1406	249	414	-	1256	336	248	688
					1 1/2"				1/2"	3/4"				1"	
500	800	600	450	1995	264	741	1181	1634	249	414	964	1534	336	248	688
					1 1/2"				1/2"	3/4"				1"	
750	950	750	600	2010	295	752	1212	1665	280	445	995	1565	367	279	631
					1 1/2"				1/2"	3/4"				1"	
1000	1050	850	700	2060	323	780	1240	1693	308	473	1023	1593	395	311	661
					1 1/2"				1/2"	3/4"				1 1/4"	
1500	1200	1000	850	2150	368	825	1285	1738	353	518	1068	1638	440	356	706
					1 1/2"				1/2"	3/4"				1 1/4"	
2000	1400	1200	1000	2250	419	876	1336	1789	404	569	1119	1689	491	407	707
					1 1/2"				1/2"	3/4"				1 1/4"	

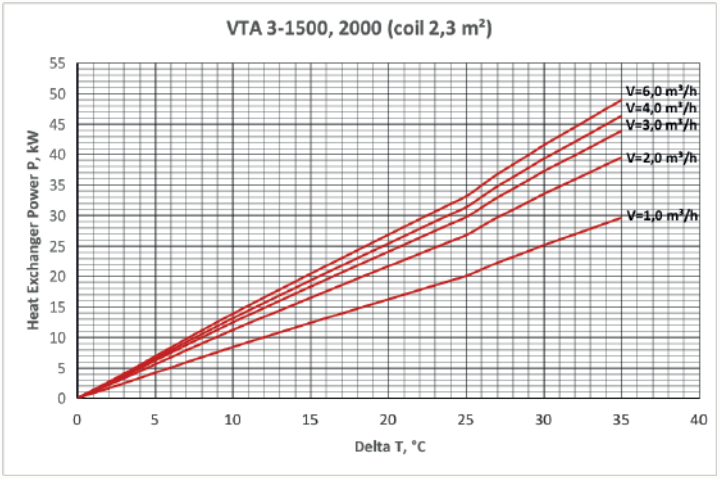
LOWER HEAT EXCHANGER CAPACITY

The capacity of the lower heat exchanger, P (kW), is presented as a function of the temperature difference, ΔT (°C), between the heat transfer fluid supply entering the heat exchanger and the average tank temperature in the lower heat exchanger zone, at a specific circulation rate of the heat transfer fluid, V (m³/h), within the exchanger

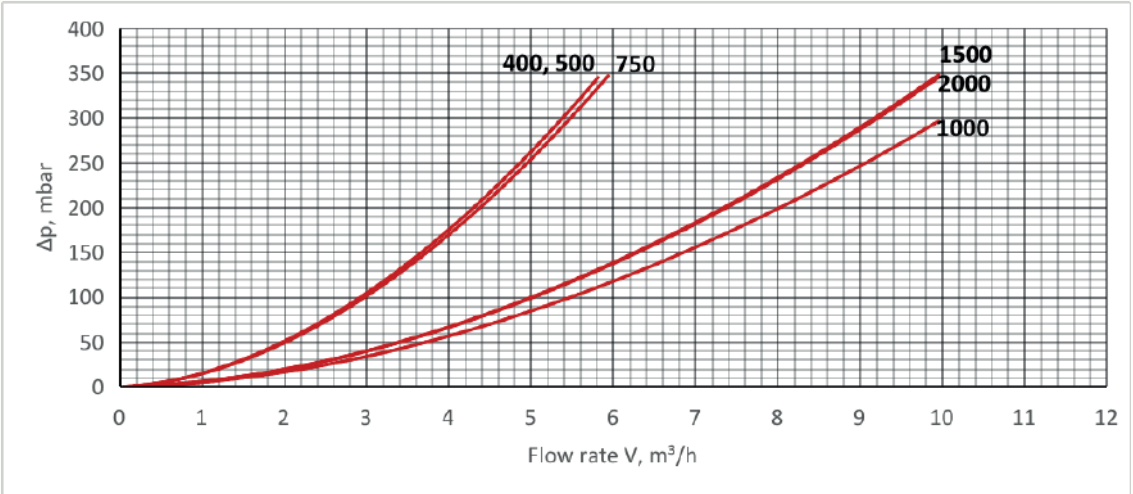
For example, consider a VTA 3-750 water heater tank where the average temperature in the lower heat exchanger zone is 40°C, and the heat transfer fluid flowing through the exchanger has a temperature of 70°C with a circulation rate of 2 m³/h. In this case, the temperature difference ΔT = 70 - 40 = 30°C, and the approximate capacity of the lower heat exchanger is 24 kW.







PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER



EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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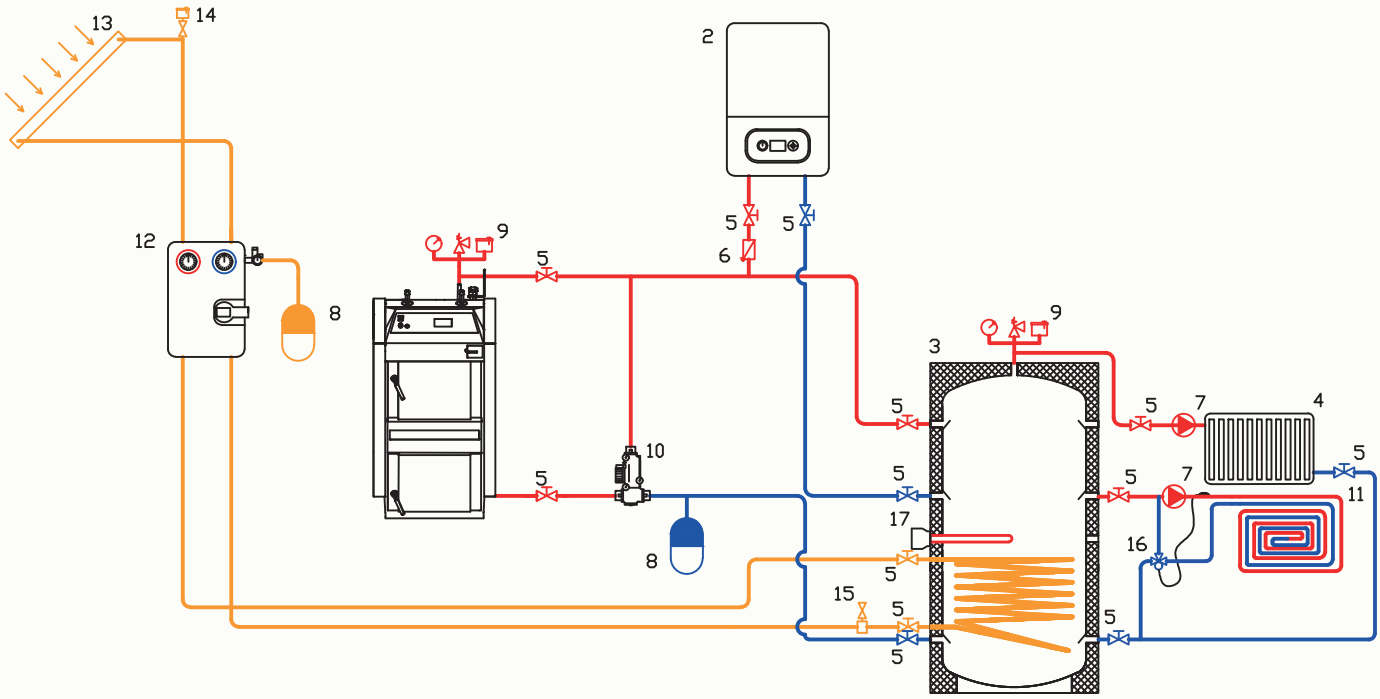


DESIGNATION

1	Solid fuel boiler	7	Circulation pump	13	Solar collector (solar circuit)
2	Gas or electric boiler	8	Expansion tank	14	Air vent for the solar circuit
3	VTA 3 storage tank	9	Safety group	15	Automatic air vent for the solar circuit
4	Radiator heating circuit	10	Thermomixing device Laddomat	16	Three-way valve with remote sensor for the "warm floor" system
5	Ball valve	11	"Warm floor" heating circuit	17	Electric heat element
6	Check valve	12	Circulation pump		

HEAT ACCUMULATION FOR HEATING SYSTEMS

TECHNICAL DESCRIPTION

The storage tank is designed to accumulate and store thermal energy from multiple heat sources for heating systems.

MATERIAL

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation encased in zippered PVC fabric

PU/PVC – 90 mm flexible polyurethane foam insulation encased in PVC fabric secured with straps.

PL/ABS – 100 mm polyester insulation encased in ABS plastic with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation encased in ABS plastic. Premium-class insulation, fully compliant with **ErP 2009/125/EC Directive** requirements

CUSTOM DRAW

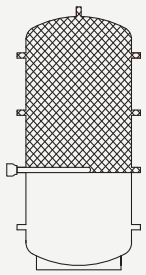
Design and production of storage tank tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

Tank	
P	T
3 bar	95°C

Model	V tank, l	Energy efficiency class of insulation*
200	214	A
300	305	A
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

*Energy efficiency class specified for PS/ABS insulation

ACCESSORIES



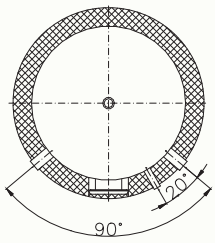
Electric heat elements

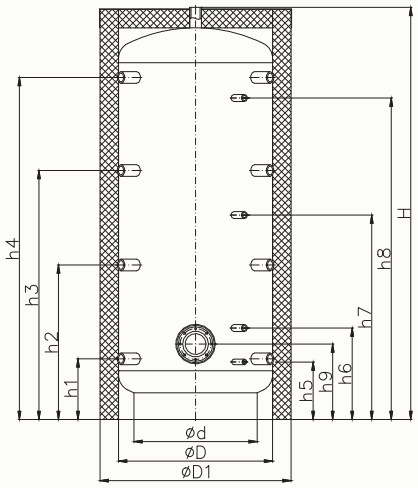
Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW
		1~220		3~400				
		Heating time for ΔT=20°, minutes						
200	110	77	51	34	26	20	-	-
300	199	139	92	62	46	37	-	-
400	212	148	98	66	49	39	33	-
500	314	219	146	97	73	58	49	-
750	500	348	232	155	116	93	77	58
1000	650	453	302	201	151	121	101	75
1500	926	645	430	287	215	172	143	108
2000	1370	954	636	424	318	255	212	159
3000*	1944	1354	903	602	451	361	301	226
4000*	2552	1778	1185	780	593	474	395	296
5000*	3229	2250	1500	1000	750	600	500	375

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION





DESIGNATION

H, h1-h4	Connection of supply and return mains of heating circuits
h5	Process connection
h6-h8	Connections for temperature sensors
h9	Flange, Ø120 mm

Model	Dimensions, mm				Connection Dimensions, mm								
	∅ D1	∅ D	∅ d	H	h1	h2	h3	h4	h5	h6	h7	h8	h9
200	700	480	400	1410	244	690	-	1136	229	394	-	1014	316
					1 1/2"				1 1/2"			3/4"	
300	700	480	400	1910	244	701	1161	1614	229	394	944	1514	316
					1 1/2"					3/4"			
400	800	600	450	1700	264	834	-	1406	249	414	-	1256	336
					1 1/2"				1/2"	3/4"			
500	800	600	450	1950	264	721	1181	1634	249	414	964	1534	336
					1 1/2"				1/2"	3/4"			
750	950	750	600	2010	295	752	1212	1665	280	445	995	1565	367
					1 1/2"				1/2"	3/4"			
1000	1050	850	700	2060	323	780	1240	1693	308	473	1023	1593	395
					1 1/2"				1/2"	3/4"			
1500	1200	1000	850	2150	368	825	1285	1738	353	518	1068	1638	440
					1 1/2"				1/2"	3/4"			
2000	1400	1200	1000	2250	419	876	1336	1789	404	569	1119	1689	491
					1 1/2"				1/2"	3/4"			
3000	1600	1400	1150	2340	465	922	1382	1835	450	615	1165	1735	537
					2"				1/2"	3/4"			
4000	1800	1600	1300	2400	490	947	1407	1860	475	640	1190	1760	562
					2"				1/2"	3/4"			
5000	1800	1600	1300	2900	490	1110	1740	2360	475	640	1450	2260	562
					2"				1/2"	3/4"			
6300	2100	1900	-	2850	Configuration and Dimensions of Pipes According to Customer Request								
8000	2100	1900	-	3600									
10000	2100	1900	-	4350									

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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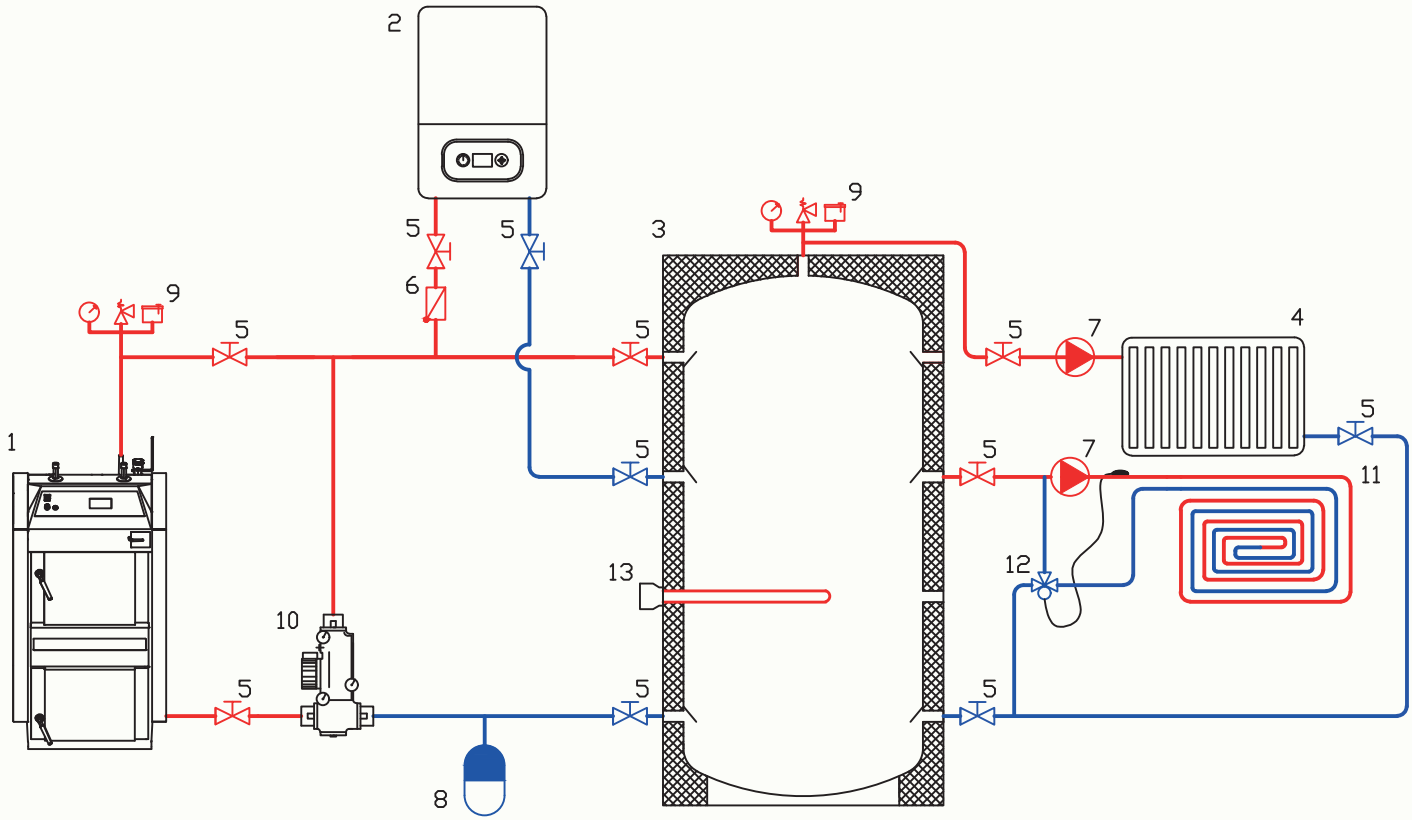


DESIGNATION

1	Solid fuel boiler	6	Check valve	11	"Warm floor" heating circuit
2	Gas or electric boiler	7	Circulation pump	12	Three-way valve with remote sensor for the "warm floor" system
3	VTA 4 storage tank	8	Expansion tank	13	Electric heat element
4	Radiator heating circuit	9	Safety group		
5	Ball valve	10	Thermomixing device Laddomat		

HEAT ACCUMULATION FOR HEATING SYSTEMS, OPTIMIZED FOR OPERATION WITH SOLID FUEL BOILERS

TECHNICAL DESCRIPTION

The storage tank is designed to accumulate and store thermal energy from various heat sources for heating systems. Its configuration is optimized for operation with solid fuel boilers.

MATERIAL

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel. The external coating provides enhanced resistance to mechanical impacts and aggressive environments.

Tank	
P	T
3 bar	95°C

WARRANTY

5 years

THERMAL INSULATION

PL/PVC – 100 mm polyester insulation encased in zippered PVC fabric

PU/PVC – 90 mm flexible polyurethane foam insulation encased in PVC fabric secured with straps.

PL/ABS – 100 mm polyester insulation encased in ABS plastic with plastic latches

PS/ABS – 100 mm high-efficiency rigid graphite-expanded polystyrene insulation encased in ABS plastic. Premium-class insulation, fully compliant with **ErP 2009/125/EC Directive** requirements

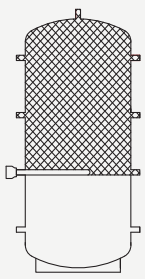
Model	V tank, l	Energy efficiency class of insulation*
100	108	A
200	214	A
300	305	A
400	413	B
500	483	B
750	773	C
1000	1008	C
1500	1449	C
2000	2158	C

*Energy efficiency class specified for PS/ABS insulation

CUSTOM DRAW

Design and production of storage tank tailored to customer specifications are available, including modifications to dimensions, connection configurations, and heat exchanger parameters.

ACCESSORIES



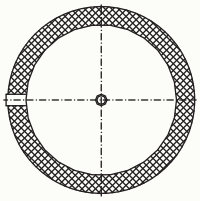
Electric heat elements

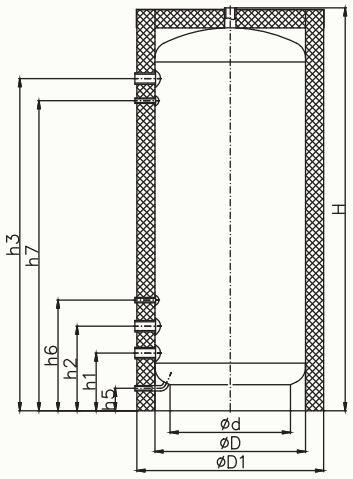
Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW
		1~220		3~400					
		Час нагріву на ΔT=20°, хв							
100	76	53	35	24	-	-	-	-	-
200	168	117	78	52	39	31	-	-	-
300	259	180	120	80	60	48	-	-	-
400	337	235	157	104	78	63	52	-	-
500	408	284	189	126	95	76	63	-	-
750	646	450	300	200	150	120	100	75	-
1000	837	583	389	259	194	155	130	97	78
1500	1186	826	551	367	275	220	184	138	110
2000	1743	1214	810	540	405	324	270	202	162
3000*	2451	1708	1138	759	569	455	379	285	228
4000*	3217	2241	1494	996	747	598	498	374	299
5000*	4222	2941	1961	1307	980	784	654	490	392

For tanks with a capacity of 3000 liters and above, a transition piece is required for connecting the electric heat element

For alternative mounting of the electric heat element, a flange adapter is used

DIMENSIONS AND CONNECTION





DESIGNATION

H, h1-h3	Connection of supply and return mains of heating circuits
h5	Process connection
h6-h7	Connections for temperature sensors

Model	Dimensions, mm				Connection Dimensions, mm					
	∅ D1	∅ D	∅d	H	h1	h2	h3	h5	h6	h7
100	600	400	300	1055	211	346	811	95	446	711
					1"	1 1/2"	1"	1/2"		
200	680	480	400	1410	236	371	1103	94	501	993
					1 1/2"			1/2"		
300	680	480	400	1910	236	371	1603	94	501	1493
					1 1/2"			1/2"		
400	800	600	450	1700	256	390	1373	94	520	1263
					1 1/2"			1/2"		
500	800	600	450	1950	256	390	1623	94	520	1513
					1 1/2"			1/2"		
750	950	750	600	2010	287	421	1654	125	551	1544
					1 1/2"			1/2"		
1000	1050	850	700	2060	315	449	1682	143	579	1572
					1 1/2"			1/2'		
1500	1200	1000	850	2150	360	494	1727	188	624	1617
					1 1/2"			1/2"		
2000	1400	1200	1000	2250	411	545	1778	200	675	1668
					1 1/2"			1/2"		
3000	1600	1400	1150	2350	477	592	1825	220	722	1715
					2"			1/2"		
4000	1800	1600	1300	2400	482	616	1849	240	746	1739
					2"			1/2"		
5000	1800	1600	1300	2900	482	616	2349	240	746	2239
					2"			1/2"		
6300	2100	1900	-	2850	Configuration and Dimensions of Pipes According to Customer Request					
8000	2100	1900	-	3600						
10000	2100	1900	-	4350						

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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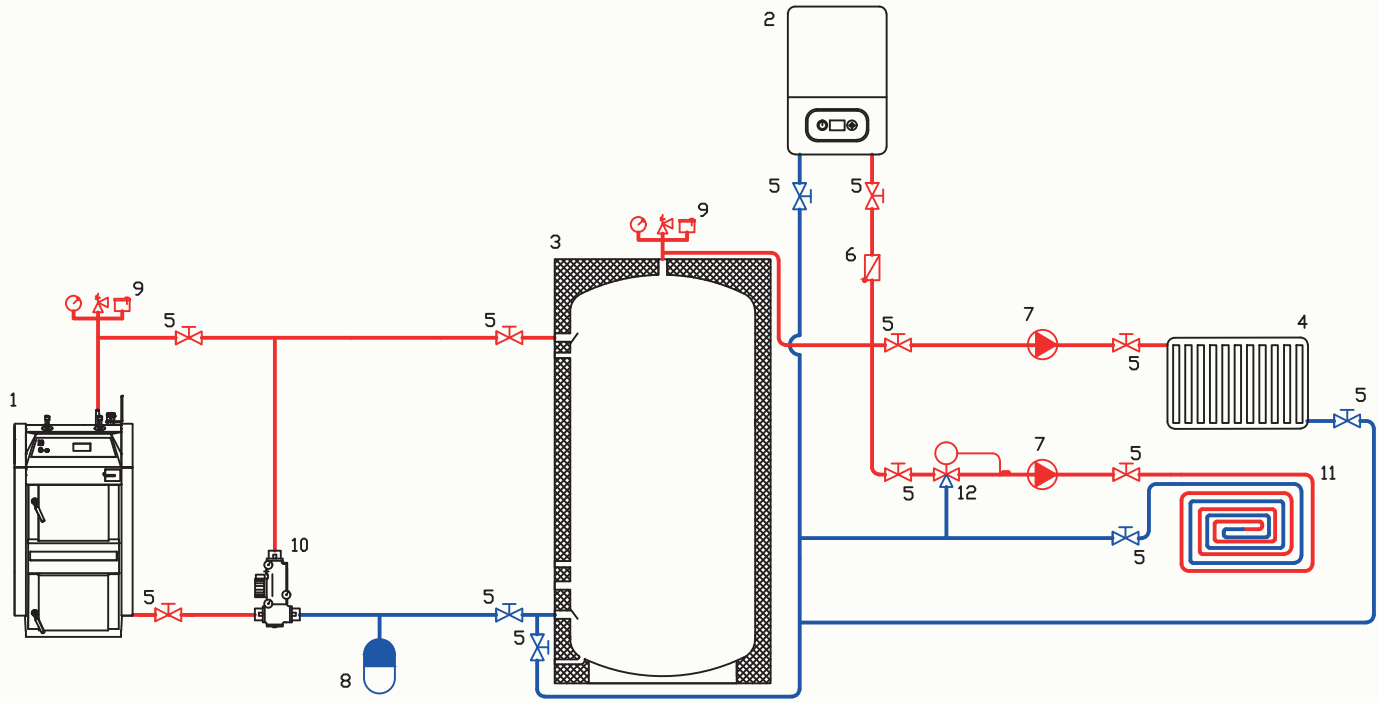


DESIGNATION

1	Solid fuel boiler	5	Ball valve	9	Safety group
2	Gas or electric boiler	6	Check valve	10	Thermomixing device Laddomat
3	VTA 4 Economy storage tank	7	Circulation pump	11	"Warm floor" heating circuit
4	Radiator heating circuit	8	Expansion tank	12	Three-way valve with remote sensor for the "warm floor" system

DESIGNED FOR USE IN SYSTEMS WITH HEAT PUMPS FOR HEATING AND COOLING

TECHNICAL DESCRIPTION

The buffer tank is intended for hydraulic separation of the heat pump circuit and the heating/cooling circuit; for increasing the volume of the heating/cooling system; and for storing heat or cold to ensure proper and stable operation of the heat pump, as well as the heating and cooling system.

MATERIAL

The tank is constructed from S235JR (DIN 1.0038) carbon structural steel.

WARRANTY

5 years

THERMAL INSULATION

PUH/PVC – Rigid polyurethane foam insulation, 35 mm thick, encased in zippered PVC fabric.

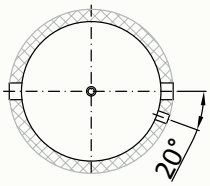
PUH/ABS – Rigid polyurethane foam insulation, 35 mm thick, encased in ABS plastic with a latch.

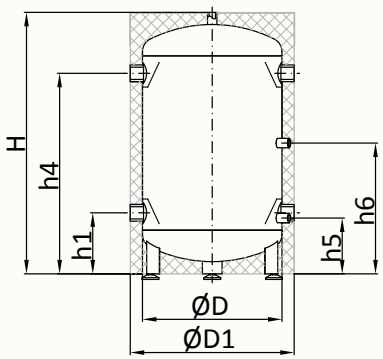
The above insulation types comply with all requirements of the **ErP 2009/125/EC Directive**

Tank	
P	T
6 bar	-10 + 95 °C

Model	V tank, l	Energy efficiency class of insulation
50	52	B
80	82	B

ГАБАРИТНІ ПРИЄДНУВАЛЬНІ РОЗМІРИ





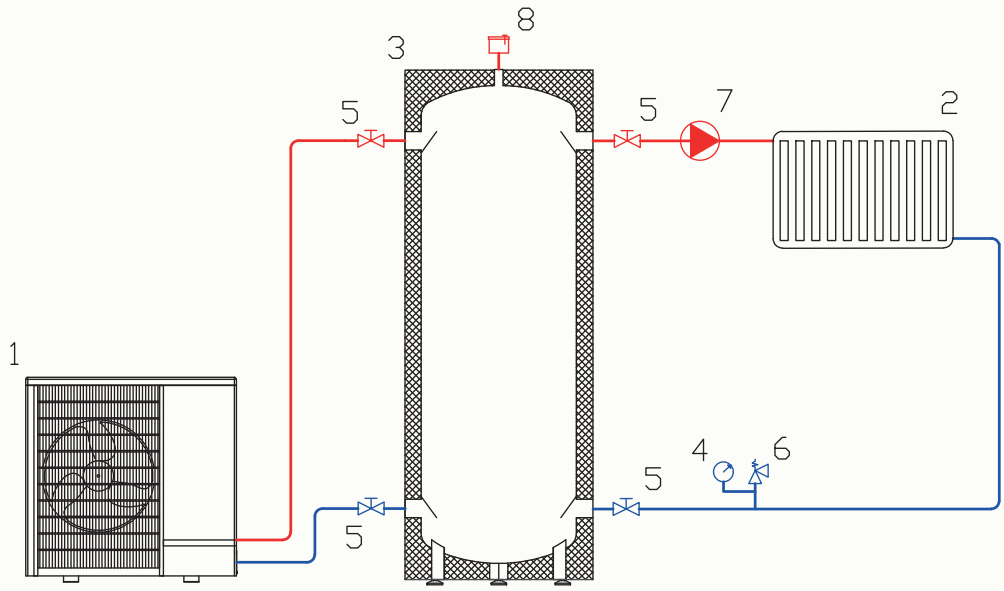
ПОЗНАЧЕННЯ

H	Air vent
h1, h4	Connections for supply and return lines of heating circuits
h5	Technological connection
h6	Connection for temperature sensors

Model	Dimensions, mm			Connection Dimensions, mm			
	∅ D1	∅ D	H	h1	h4	h5	h6
50	480	400	500	175	325	160	250
			1/2"	1 1/4"		1/2"	1/2"
80	480	400	750	175	575	160	375
			1/2"	1 1/4"		1/2"	1/2"

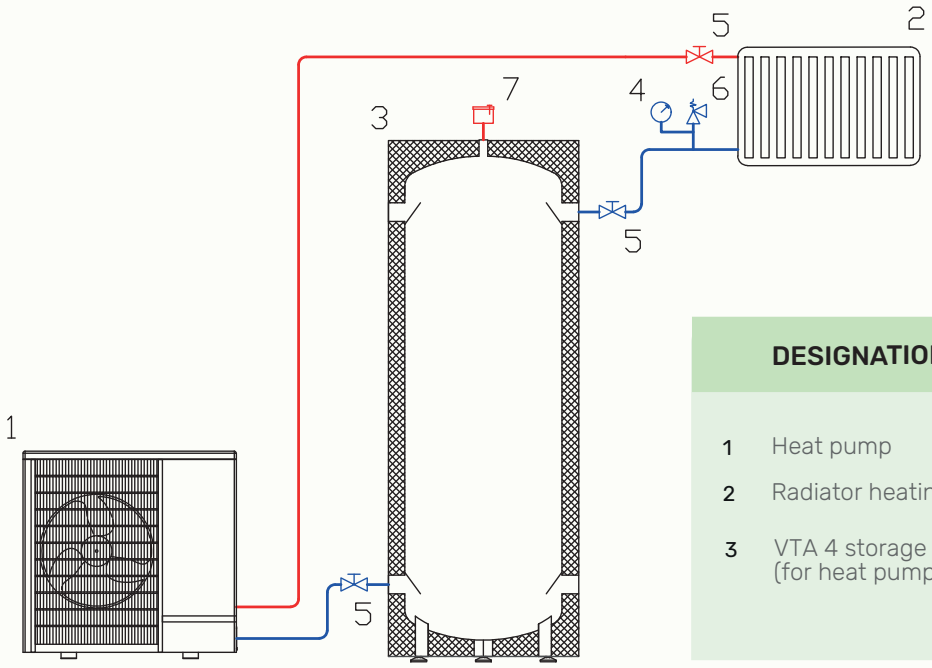
EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1 Heat pump
2 Radiator heating circuit
3 VTA 4 storage tank (for heat pump)
4 Pressure gauge
5 Ball valve
6 Safety valve
7 Circulation pump



DESIGNATION

1 Heat pump
2 Radiator heating circuit
3 VTA 4 storage tank (for heat pump)
4 Pressure gauge
5 Ball valve
6 Safety valve
7 Air vent

FOR SYSTEMS WITH HEAT PUMPS
FOR HEATING/COOLING

TECHNICAL DESCRIPTION

The buffer tank is designed for hydraulic separation between the heat pump circuit and the heating/cooling circuit; to increase the system volume; to accumulate heat or cold to ensure the correct and stable operation of the heat pump and the heating/cooling system. It allows for the connection of an additional heat source and the installation of an electric heat element.

MATERIAL

The tank is made of carbon structural steel S235JR (DIN 1.0038).

WARRANTY

5 years

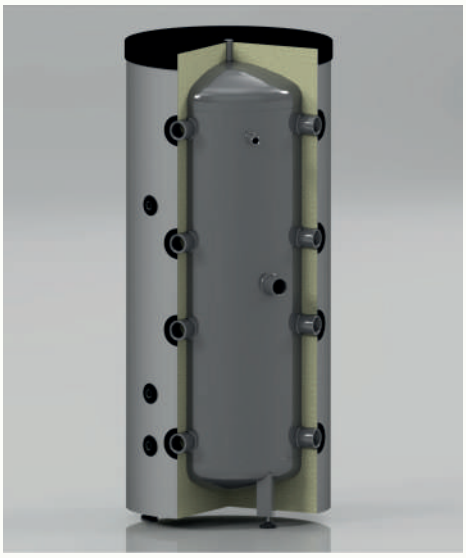
THERMAL INSULATION

PUH/PVC – Rigid polyurethane foam insulation, 35 mm thick, enclosed in a PVC fabric jacket with a lock.

PUH/ABS – Rrigid polyurethane foam insulation, 35 mm thick, enclosed in an ABS plastic jacket with a lock.

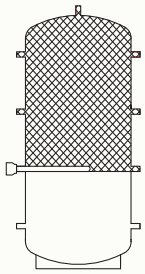
The above insulation types comply with all requirements of the **ErP 2009/125/EC Directive**

Tank	
P	T
6 bar	-10 + 95 °C



Model	V tank, l	Energy Efficiency Class of Insulation
100	108	B
150	145	B
200	214	B
250	260	C
300	305	C

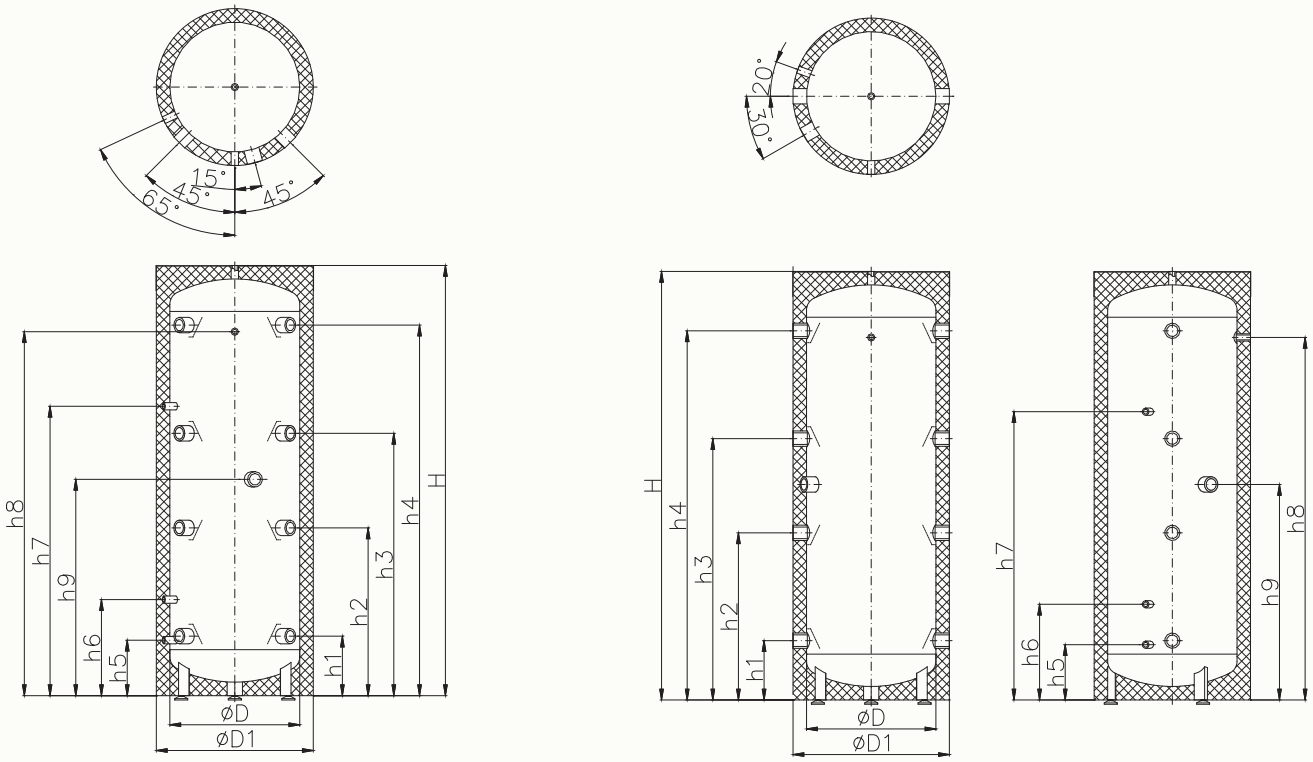
ACCESSORIES



Electric heat elements

Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW
		1~220		3~400
		Heating time for ΔT=20°, minutes		
100	53	65	43	29
150	72	88	59	39
200	111	135	90	60
250	133	162	108	72
300	147	179	119	80

DIMENSIONS AND CONNECTION



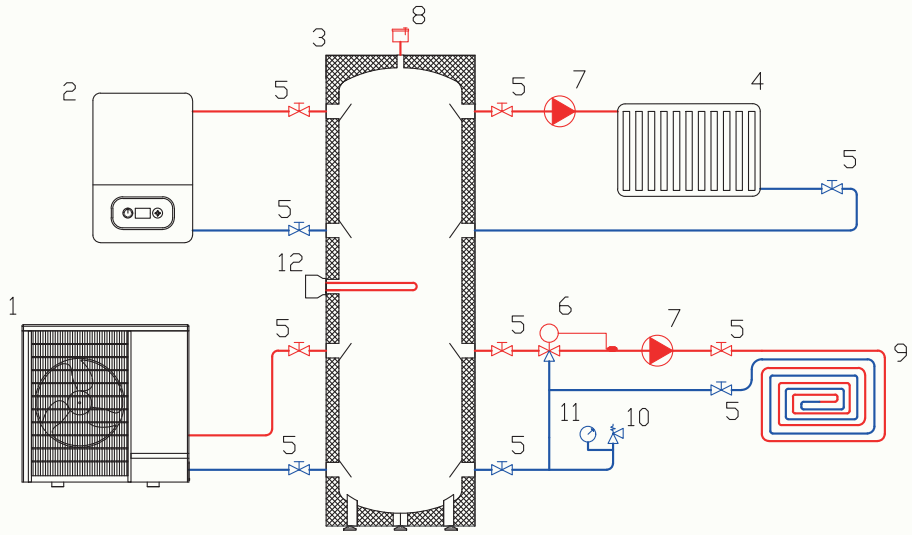
DESIGNATION

H	Air vent	h5	Technological connection	h8	Connection for thermometer
h1–h4	Connections for supply and return lines of heating circuits	h6–h7	Connections for temperature sensors	h9	Connection for electric heat element

Model	Dimensions, mm			Connection Dimensions, mm								
	∅D1	∅D	H	h1	h2	h3	h4	h5	h6	h7	h8	h9
100	510	400	980	190	390	590	790	175	290	690	765	540
			1/2"	1 1/4"				1/2"				1 1/2"
150	510	400	1280	190	490	790	1090	175	290	890	1065	640
			1/2"	1 1/2"				1/2"				1 1/2"
200	590	480	1340	220	545	795	1120	205	355	895	1095	670
			1/2"	1 1/2"				1/2"				1 1/2"
250	590	480	1590	220	620	970	1370	205	355	1070	1345	800
			1/2"	1 1/2"				1/2"				1 1/2"
300	590	480	1840	220	700	1140	1620	205	355	1240	1595	970
			1/2"	1 1/2"				1/2"				1 1/2"

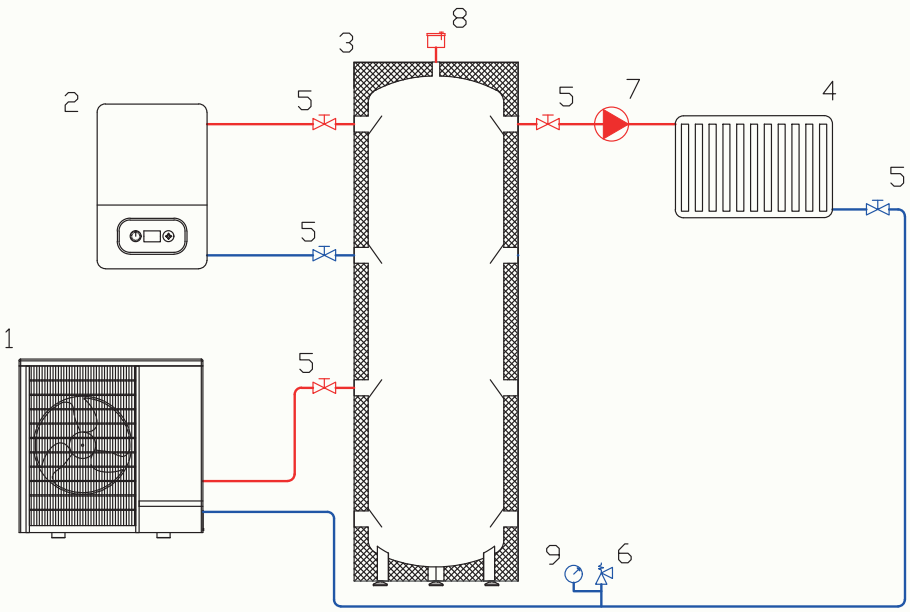
EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
during design, relevant standards and regulations must be followed.



DESIGNATION

1	Heat pump	5	Ball valve	9	Underfloor heating circuit
2	Gas or electric boiler	6	Three-way valve with a remote sensor for the underfloor heating system	10	Safety valve
3	Buffer tank VTA 4 (for the heat pump)	7	Circulation pump	11	Manometer
4	Radiator heating circuit	8	Air vent	12	Tubular electric heater



DESIGNATION

1	Heat pump
2	Gas or electric boiler
3	Buffer tank VTA 4 (for the heat pump)
4	Radiator heating circuit
5	Ball valve
6	Safety valve
7	Circulation pump
8	Air vent
9	Manometer

COORDINATION OF CHILLER OPERATION WITH COOLING/COOLING-HEATING SYSTEMS

TECHNICAL DESCRIPTION

Chilled water tanks are designed to:
Provide hydraulic separation between primary and secondary cooling system circuits, ensuring proper operation of the chiller or heat pump;
Increase the cooling system's volume, reducing compressor cycling (on/off) to extend the service life of the chiller;
Store chilled water to meet peak load demands.
These functions are also applicable in reversible systems (cooling-heating).

MATERIALS

CWT CS – Tank constructed from S235JR (DIN 1.0038) carbon structural steel.

CWT ZN – Tank constructed from S235JR (DIN 1.0038) carbon structural steel with internal and external zinc coating applied via hot-dip galvanizing at 440-460°C.

WARRANTY

5 years

THERMAL INSULATION

RS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating; suitable for tanks operating solely in cooling systems.

RS/ABS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating, encased in ABS plastic with snap-lock fasteners; suitable for tanks operating solely in cooling systems.

RS+PL/ABS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating, combined with an additional 50 mm polyester layer, encased in ABS plastic with snap-lock fasteners; suitable for tanks operating in reversible cooling-heating systems.

Tank	
P	T
8 bar	-10/95 °C

Volumes, l	
CWT CS	200-10000
CWT ZN	200-3000

CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

COORDINATION OF CHILLER OPERATION WITH COOLING/COOLING-HEATING SYSTEMS AND PROVISION OF COLD WATER RESERVE FOR WATER SUPPLY

TECHNICAL DESCRIPTION

Chilled water tanks are designed to:
provide hydraulic separation between primary and secondary cooling system circuits, ensuring proper operation of the chiller or heat pump;
increase the cooling system's volume, reducing compressor cycling (on/off) to extend the service life of the chiller;
store chilled water to meet peak load demands.
These functions are also applicable in reversible systems (cooling-heating).
Thanks to carefully selected materials, the tanks can be used for storing cold sanitary water.
In the **CWT PC** series, corrosion protection is provided by one or more magnesium anodes.

MATERIALS

CWT PC – Tank constructed from S235JR (DIN 1.0038) carbon structural steel with an internal polycaramic coating.

CWT SS – Tank constructed from AISI 316L (DIN 1.4404) stainless steel, meeting the highest hygienic requirements.

WARRANTY

5 years

THERMAL INSULATION

RS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating; suitable for tanks operating solely in cooling systems.

RS/ABS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating, encased in ABS plastic with snap-lock fasteners; suitable for tanks operating solely in cooling systems.

RS+PL/ABS – Anti-condensation insulation, 12 or 24 mm thick, made of synthetic foamed rubber with a metallized external coating, combined with an additional 50 mm polyester layer, encased in ABS plastic with snap-lock fasteners; suitable for tanks operating in reversible cooling-heating systems.

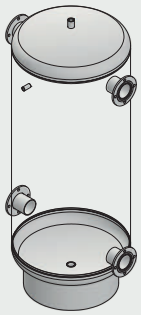
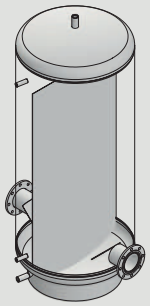
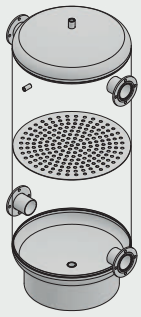
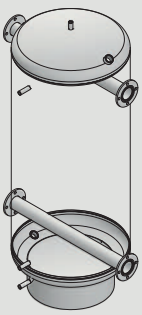
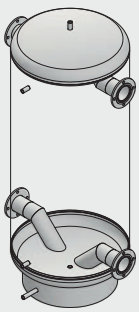
Tank	
P	T
8 bar	-10/95 °C

Volumes, l	
CWT CS	200-10000
CWT ZN	200-3000

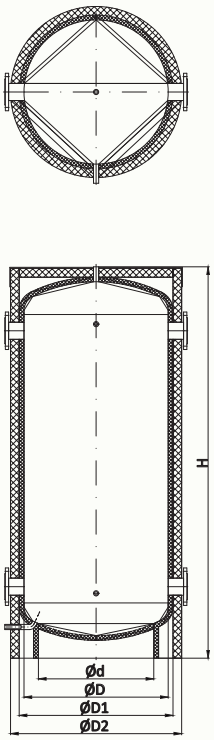
CUSTOM DRAW

Water heaters can be designed and manufactured according to customer requirements, allowing for modifications in dimensions and connection configurations.

CONFIGURATION TABLE

Version	Description	Schematic illustration
1. Without internal components	Typically used for hydraulic separation of primary and secondary circuits. It can also be utilized as a pass-through tank to increase system volume.	
2. With vertical partition	Pass-through tank that is installed on the return pipeline to increase the cooling system volume. This ensures the proper operation of the refrigeration unit (chiller, heat pump).	
3. With horizontal partition	Designed for hydraulic separation of primary and secondary circuits with clear delineation of temperature zones.	
4. With through connections	Used in systems with unbalanced generation and cold (cold-heat) consumption. Excess cold accumulates in the tank to compensate for increased load on the refrigeration unit.	
5. With guiding connections	Applied for the accumulation of chilled water (technical cold) to cover peak loads. Guide connections ensure full utilization of the tank volume.	

DIMENSIONS AND CONNECTION



Model	V tank, l	Dimensions, mm						
		H, maximum	Ød	ØD	ØD 1		ØD 2	
					Insulation RS12	Insulation RS24	Insulation RS24/ABS	Insulation RS24+PL/ABS
100	108	1100	300	400	424	448	500	560
200	214	1350	400	480	504	528	580	640
300	305	1940	400	480	504	528	580	640
400	413	1770	450	600	624	648	700	760
500	483	2020	450	600	624	648	700	760
750	773	2090	600	750	774	798	850	910
1000	1008	2130	700	850	874	898	950	1010
1500	1449	2200	850	1000	1024	1048	1100	1160
2000	2158	2340	1000	1200	1224	1248	1300	1360
3000	3050	2440	1150	1400	1424	1448	1500	1560
4000	4051	2450	1300	1600	1624	1648	1700	1760
5000	5055	2950	1300	1600	1624	1648	1700	1760
6300	6241	2850	-	1900	1924	1948	2000	2060
8000	8366	3600	-	1900	1924	1948	2000	2060
10000	10492	4350	-	1900	1924	1948	2000	2060

EXAMPLE OF A SCHEMATIC DIAGRAM

The schematic diagram does not replace qualified installation:
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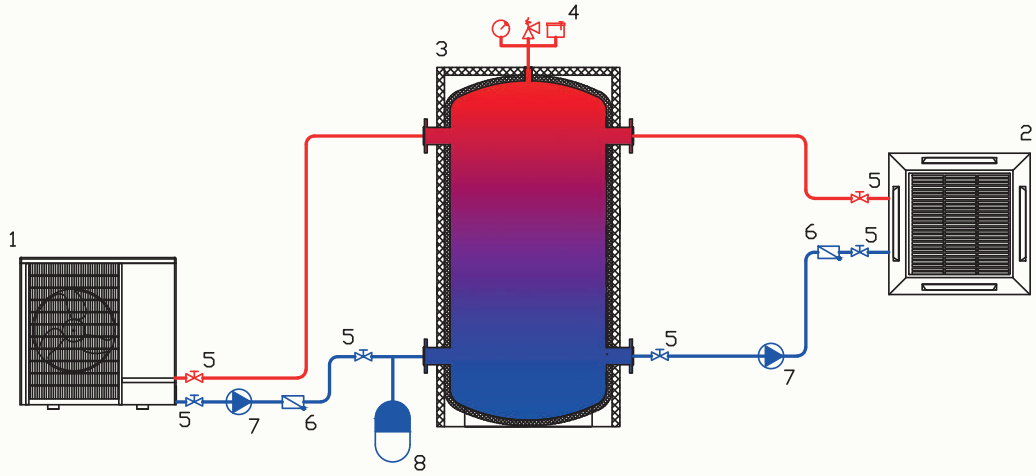
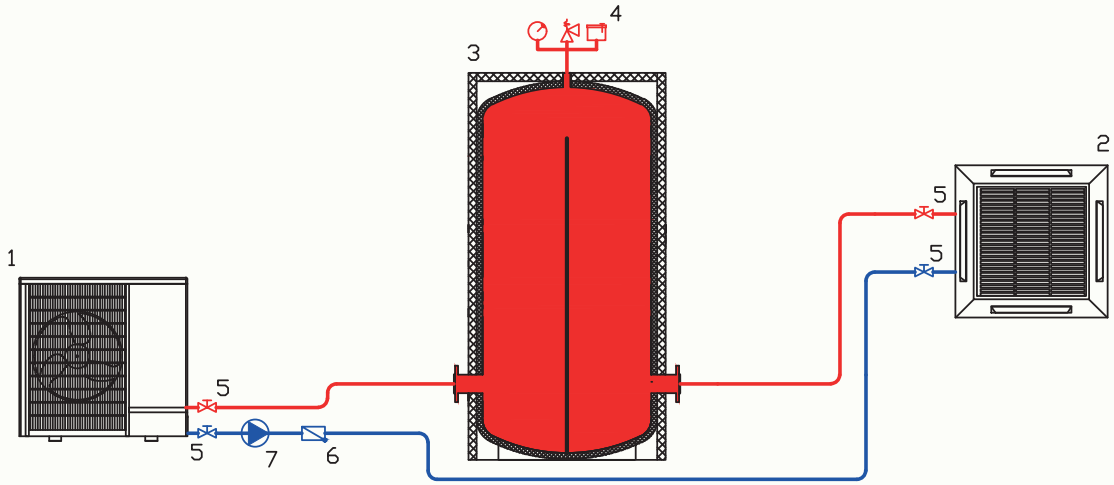


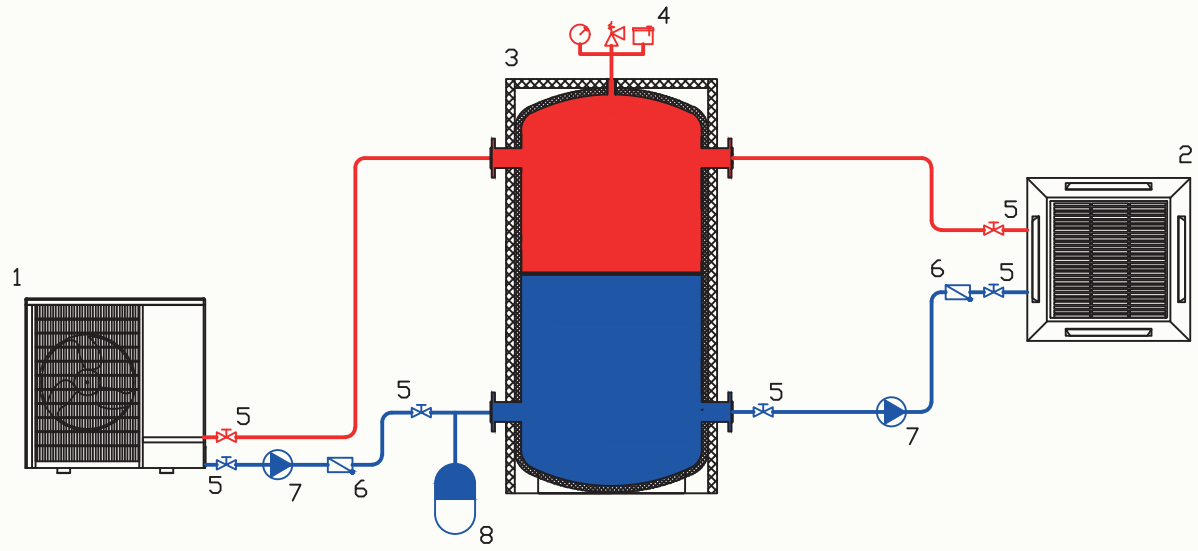
DESIGNATION

1	Heat pump	4	Safety group	7	Circulation pump
2	Fan coil	5	Ball valve	8	Expansion tank
3	CWT 1 thermal storage tank	6	Check valve		



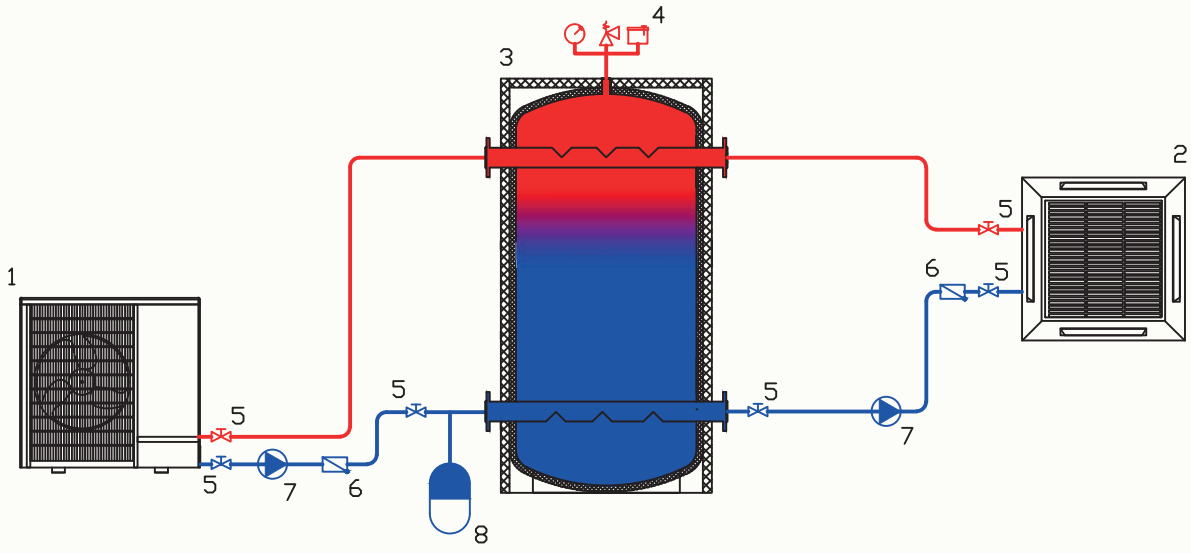
DESIGNATION

1	Heat pump	4	Safety group	7	Circulation pump
2	Fan coil	5	Ball valve		
3	CWT 2 thermal storage tank	6	Check valve		



DESIGNATION

1	Heat pump	4	Safety group	7	Circulation pump
2	Fan coil	5	Ball valve	8	Expansion tank
3	CWT 3 thermal storage tank	6	Check valve		



DESIGNATION

1	Heat pump	4	Safety group	7	Circulation pump
2	Fan coil	5	Ball valve	8	Expansion tank
3	CWT 4 thermal storage tank	6	Check valve		

TEPLOBAK®

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