

**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.

**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**

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		

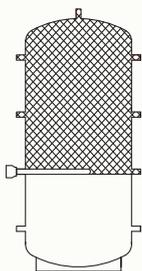


Model	Tank volume, l	Heat exchanger of the external heating circuit		Energy efficiency class of insulation*
		S coil 1, m <sup>2</sup>	V coil 1, l	
400/80	413	1,5	10,0	B
500/80	483	1,5	10,0	B
500/115				
500/185	773	1,5	10,0	C
750/115				
750/270	1008	1,8	15,5	C
1000/115				
1000/270	1449	2,3	19,5	C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


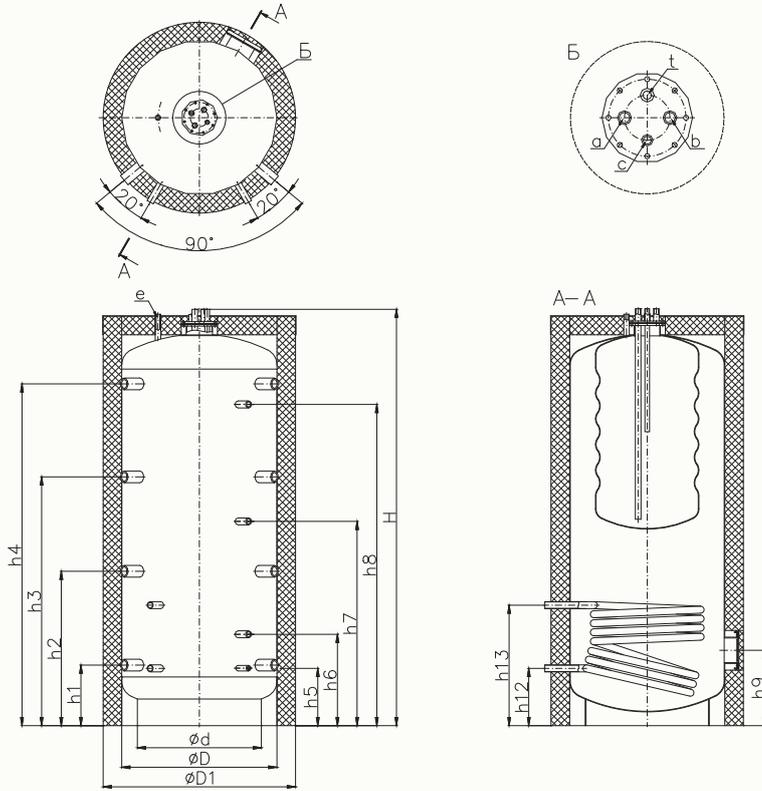
Model	Heating zone volume, liters	2 kW	3 kW	4,5 kW	6 kW	7,5 kW	9 kW	12 kW	15 kW	
		1-220		3-400						
		Heating time for ΔT=20°, minutes								
400/80	212	148	98	66	49	39	33	-	-	
500/80	309	215	144	96	72	57	48	-	-	
500/115	309	215	144	96	72	57	48	-	-	
500/185	309	215	144	96	72	57	48	-	-	
750/115	500	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

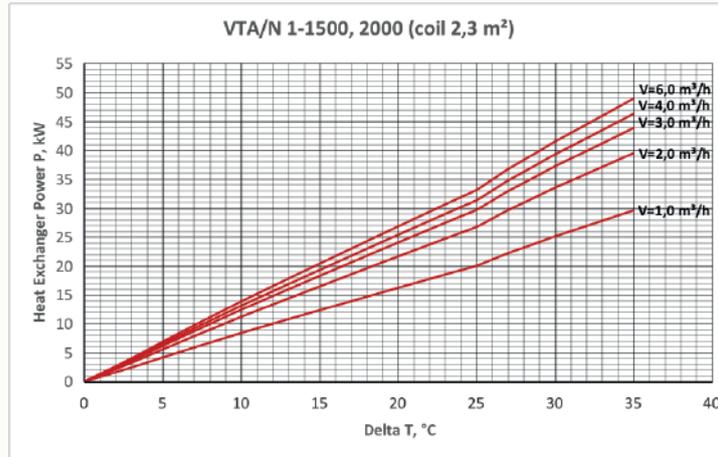
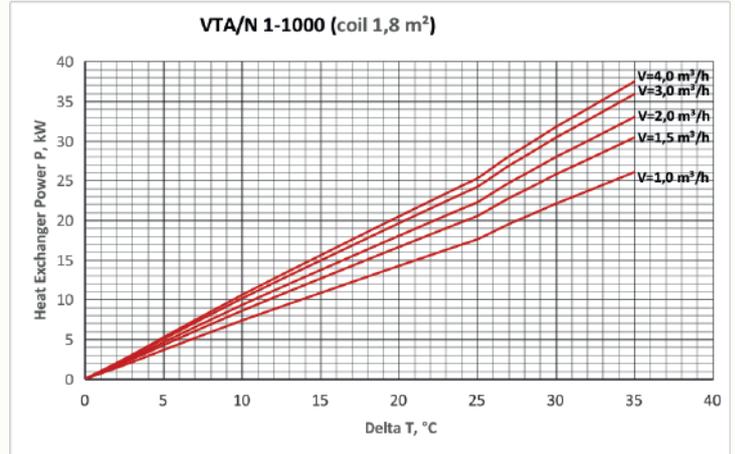
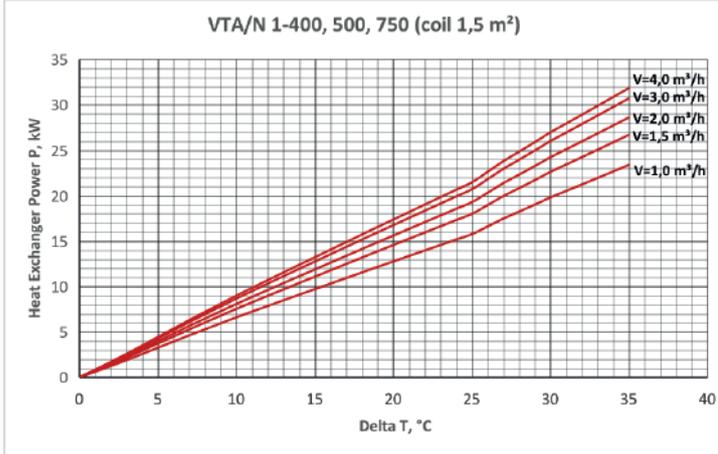
- H, h1-h4** Connections of supply and return lines of heating circuits
- h5** Technological connection
- h6-h8** Temperature sensor connections
- h9** Flange, Ø120 mm
- h12-h13** Connections of supply and return lines of the external heating circuit (Coil 1 - lower heat exchanger)
- e** Air vent
- a**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

Model	Dimensions, mm				Connection sizes, mm																	
	ØD1	ØD	Ød	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	800	600	450	1970	264	721	1181	1634	249	414	964	1534	336	248	668	1/2"	3/4"	1/2"	1/2"			
500/115																						
500/185					1 1/2"		1/2"	3/4"			1"											
750/115	950	750	600	2030	295	752	1212	1665	280	445	995	1565	367	279	631	1/2"	3/4"	1/2"	1/2"			
750/270																		1"	3/4"	1/2"	1/2"	
					1 1/2"		1/2"	3/4"			1"											
1000/115	1050	850	700	2080	323	780	1240	1693	308	473	1023	1593	395	311	661	1/2"	3/4"	1/2"	1/2"			
1000/270																			1"	3/4"	1/2"	1/2"
					1 1/2"		1/2"	3/4"			1 1/4"											
1500/115	1200	1000	850	2170	368	825	1285	1738	353	518	1068	1638	440	356	706	1/2"	3/4"	1/2"	1/2"			
1500/270																			1"	3/4"	1/2"	1/2"
					1 1/2"		1/2"	3/4"			1 1/4"											
2000/115	1400	1200	1000	2270	419	876	1336	1789	404	569	1119	1689	491	407	707	1/2"	3/4"	1/2"	1/2"			
2000/270																			1"	3/4"	1/2"	1/2"
					1 1/2"		1/2"	3/4"			1 1/4"											

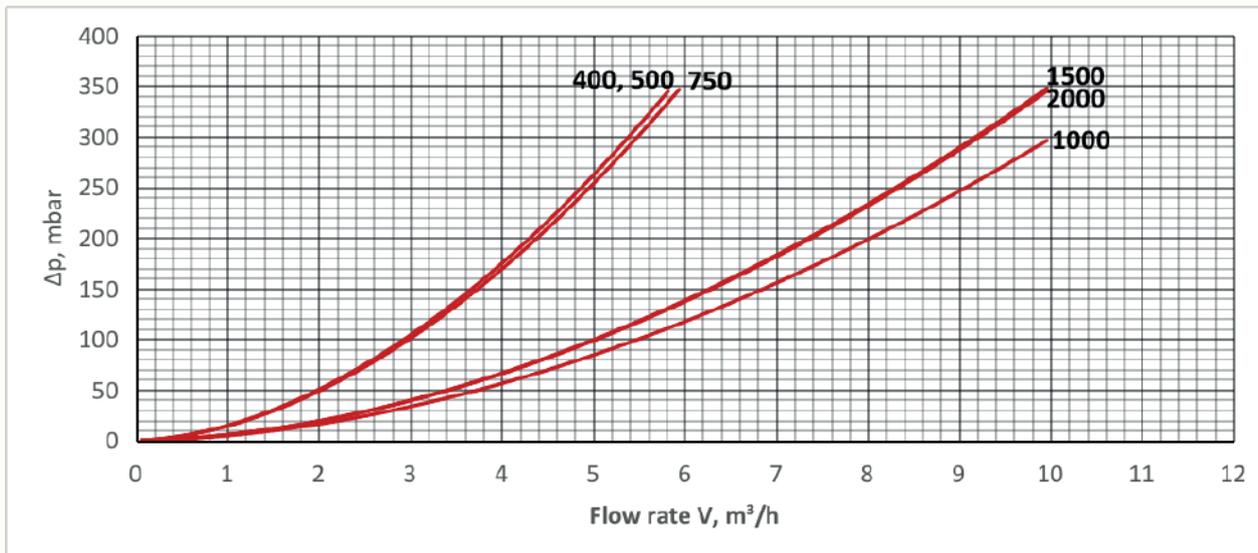
LOWER HEAT EXCHANGER CAPACITY

The capacity of the lower heat exchanger, P (kW), is shown as a function of the temperature difference,  $\Delta T$  (°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 (m<sup>3</sup>/h), in the 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 m<sup>3</sup>/h. In this case, the temperature difference  $\Delta T = 70 - 40 = 30^\circ\text{C}$ , and the capacity of the lower heat exchanger is approximately 24 kW..



PRESSURE LOSSES OF THE LOWER HEAT EXCHANGER

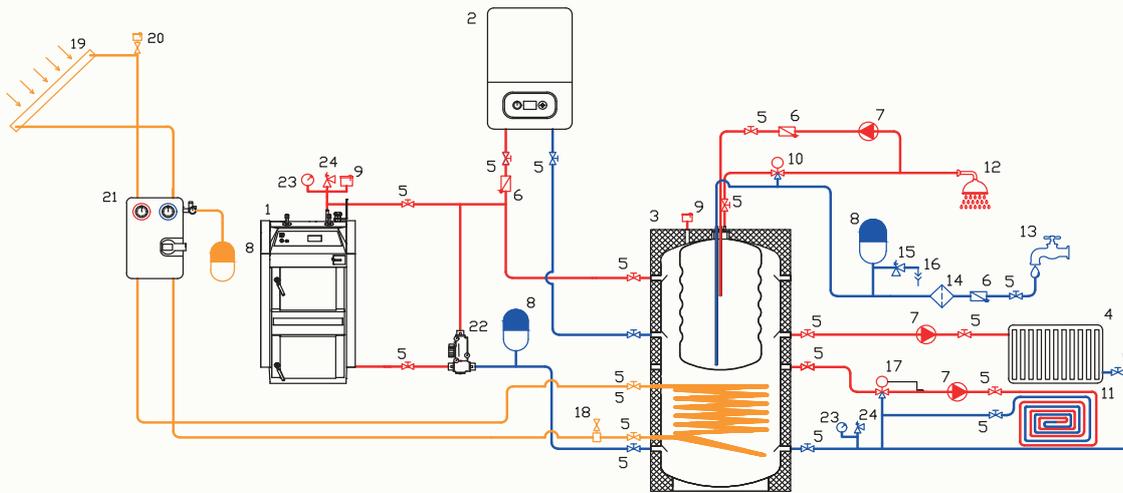


PERFORMANCE OF THE INTERNAL DHW TANK

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