

VERTICAL DOUBLE SHELL WATER EXCHANGER FOR TWO SOURCES OF HEAT

CAPACITIES AVAILABLE: 100, 120, 140, 160, 200, 250, 300, 400, 500, 600, 750, 1000

PRODUCT ID: DPWPionCO

VERSION IN ECO LEATHER

VERSION WITHOUT ECO LEATHER



1. PRODUCT DESCRIPTION

Water exchanger designed for heating domestic water and keeping it hot for a long time. Thanks to the poliurethan foam used as thermal insulation water keeps warm up to 72h from the heating moment*. The design of the tank allows for the connection of two independent, different heating sources, thanks to which it is possible to connect, for example, furnace (for solid fuels, oil, eco peas, pallets, wood) and another power source, e.g. solar system. On the one hand, this solution allows for very economical hot water production, and on the other hand, for the use of unlimited domestic hot water resources. The exchanger is working both in open and closed system. It is not limited by the type of the heating source as the tank is cooperating well with any of the heating solution. The additional heating shell used

inside the tank is a very big advantage, which is making the water heating process much faster and considerably lowering the heating losses.

* Laboratory conditions

The product designed to work in vertical position only.

THE TANK DOES NOT REQUIRE MAGNESIUM ANODE

2. CONSTRUCTION:

Tank body - made of black steel. The steel thickness presented below is dedicated to a given product capacity.

CAPACITY	Lower and upper bottom	Tank body
	steel sheet thickness [mm]	steel sheet thickness [mm]
100	4	3
120	4	3
140	4	3
160	4	3
180	4	3
200	4	3
250	4	3
300	4	3
400	4	4
500	4	4
600	4	4
750	4	4
1000	4	4

The internal anti-corrosion layer - the tank is covered EPIDIAN - food grade epoxy resin atested by National Institute of Public Health NIH - National Research Institute.

The externam thermal insulation - it is made of cloased polyurethane foam PUR of about 5,5 centimeters thickness being the integral part of the tank. The external values of the buffer are enhanced by ecological leather, which can be removed when needed.

All hot domestic water connections are located in the upper bottom: supply, return and circulation. In addition, there is a hole with a built-in capillary tube for a temperature sensor (probe). The central heating connections to the shell are located

on the upper right side of the power supply and the return connections are opposite on the lower left side. At the bottom of the tank there is also a drain hole for domestic water from the tank. The advantage of the tank is the hole for an electric heater located in the middle of the tank. This type of solution provides comfort of use in a situation when the heat source, e.g. the boiler, is extinguished - it allows to obtain hot water in a short period of time.

The manufacturer reserves the right to make any modifications to the product.

3. INSTALATION SAFETY

The proces of instalation must be prepared by an installer with appropriate qualifications and in compliance with Occupational Health and Safety Rules. Before starting the installation, please read this user manual. The product should be installed in accordance with the intended use recommended by the Manufacturer. The installation cost is the responsibility of the Buyer/User. The manufacturer is not responsible for device defects resulting from incorrect installation of the tank or by a person who does not have installation qualifications.

Installing the tank in places exposed to: low temperaturę/ freezing, high temperaturę/ steam/ explosion and other substances that accelerate corrosion or oxidation (e.g. chlorine, ammonia) is prohibited, and its effects release the Manufacturer from liability for the tank.

If the tank is installed in a non-standard place, the surface of which is exposed to rapid destruction in contact with water, the User is obliged to appropriately protect the surface against possible secondary damage. IT IS PROHIBITED TO USE THE TANK WITHOUT AN OPERATING SAFETY VALVE - regular inspection of the valve is recommended. You must also not prevent dripping from the safety valve (do not seal the valve, but specify the cause and replace it with a functional valve if necessary).

If the tank is installed in a closed heating system, an expansion vessel with a capacity of not less than 5% of the tank capacity should be installed, while if the tank is installed in an open system, the so-called expansion tank with a capacity of not less than 5% of the heater capacity should be installed.

4. INSTALATION

The tank should be placed on a durable surface in a vertical position (the only permissible form). It is necessary to install the tank in such a place that the user has easy access to the safety valve in the event of a failure of the device, the heat source or the safety valve itself. The distance from the tank cover to the ceiling should not be less than 30 cm. Do not interfere with the connections, e.g. by bending them. In accordance with Journal of Law 2015 point: 1422 each connector must be insulated.

The appropriate water intake for the buffer is the water supply network, the water quality must meet the standards of Council Directive 98/83/EC of November 3, 1998. ref. Quality of water intended for human consumption and the corresponding legislation of the Republic of Poland (Journal of Laws of 2017, item 2294). There is a risk of discoloration of the water or a foreign odor if the device is connected to its own water intake, for which the Manufacturer is not responsible.

The installation begins with filling the tank with domestic water by opening the valve at the water supply and opening it (completely until it is vented, i.e. until the water flows out in a continuous stream) at the water outlet from the tank. Once the tank is filled with water, close the valve and make sure that all connections are tight - tighten if necessary. The installer is obliged to install a safety valve. **Next, fill the shell with boiler water (from central heating).** The tank works on the principle of gravity, consequently the inlet of the heated heating medium to the double shell exchanger must be located higher than the boiler outlet.

It is important to use a dialectical connector that does not conduct electricity at the junction between the cold and hot water connectors of the tank and the installation cables. This solution eliminates contact of iron with copper, thus extending the life of the tank and preventing electrolysis (a phenomenon that is particularly active in water with an acidic pH (level <7)).

A vertical double shell water heater can be powered by any source of heat source in the heating system, e.g. boiler/ furnace, solar system, heat pump, fireplace.

The permissible temperature for the operation of the tank is a maximum of 70 degrees Celsius, the maximum working pressure of the tank is 0.6 MPa.

If the User decides to install an electric heater, it must be connected through a socket with a grounding pin and must be protected by a residual current circuit breaker. The device works properly when the entire heating installation has been properly constructed and secured.

5. USER MANUAL

Important! You must not use the tank without filling it with water and without properly working safety valve.

The device maintenance process must be carried out in accordance with current Occupational Health and Safety rules.

After installing the tank but before using it, rinse the tank by filling the tank with water, heating it to a temperature of 50 degrees Celsius, and then releasing the water

through the tap at the furthest point in the installation, and then repeating the process one more time.

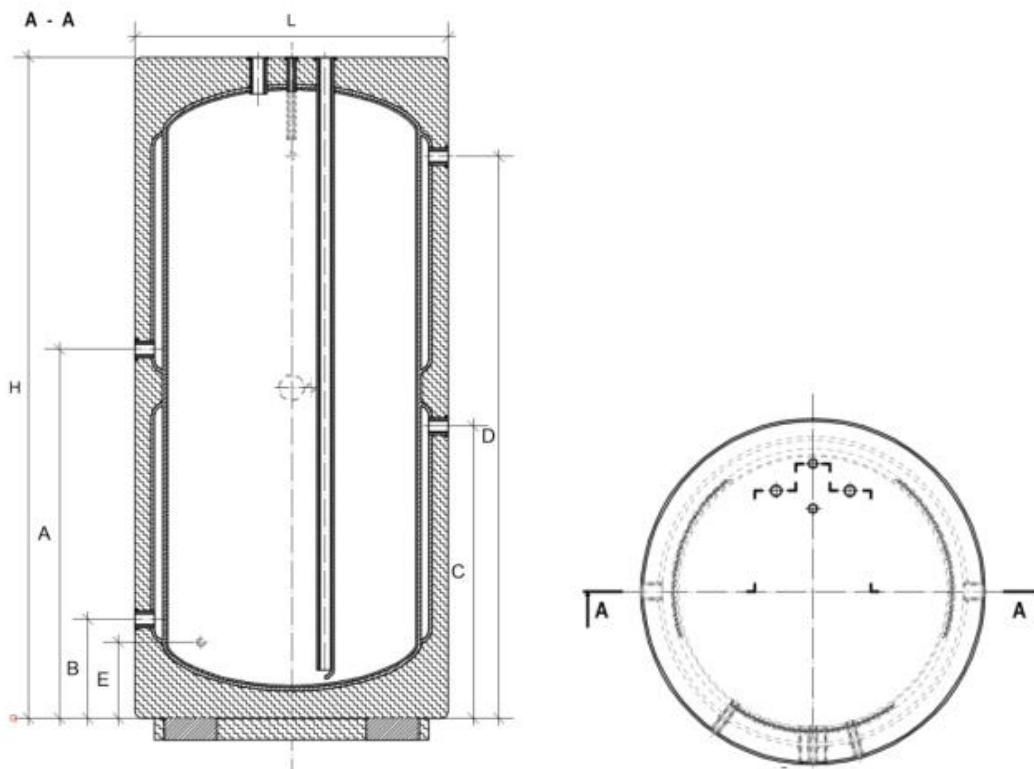
Once a month, you should heat the tank - heat water to 70 degrees Celsius to remove bacteria which may occur.

If an undesirable factor occurs - e.g. the risk of freezing water inside the tank, in this case water from the tank should be immediately removed. The appearance of fire in the close contact with the tank may cause it to burn.

In case of steam appearance at the hot water outlet, immediately open the water outlet/faucet and check the temperature of the heat source - reduce or turn off the heat source. If the device is connected to the electrical network, remove the plug from the power socket and find the cause of excessive temperature with the manufacturer of the heat source. The above situation may result in loss of health or life.

ATTENTION! The tank requires a flow of utility water of at least 20% of its capacity for 24 hours of operation. Precipitation of sediments and discoloration of water caused by lack of tank operation, the so-called the temporary stagnation of the hot water circuit is not subject to complaint.

TECHNICAL DRAWING:

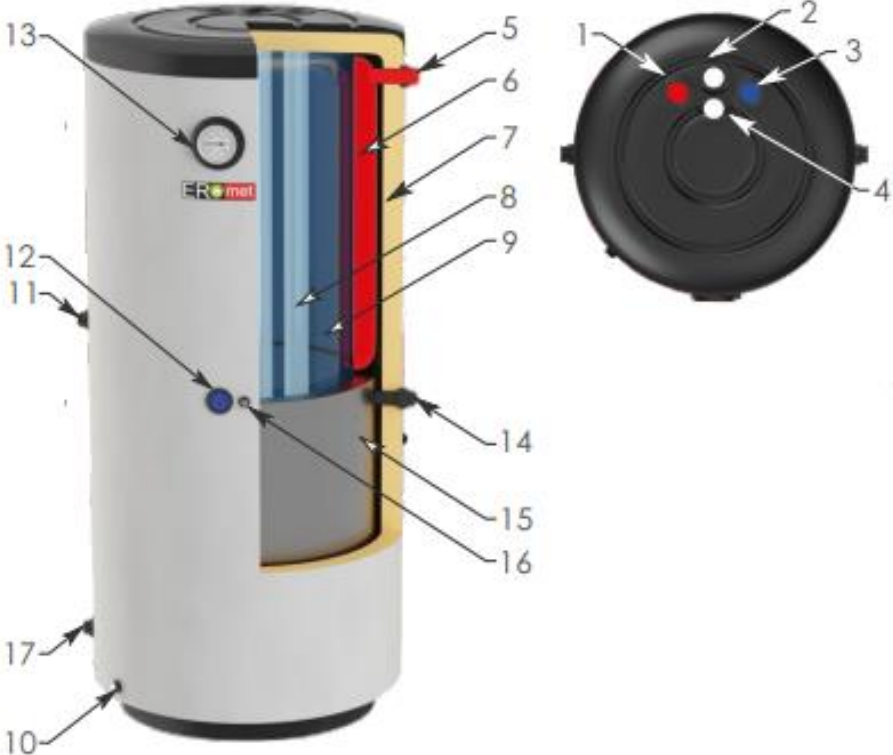


SYMBOL	CAPACITY	DIAMETER [L]	LENGHT [H]	DIAM. [A]	DIAM. [B]	DIAM. [C]	DIAM. [D]	DIAM. [E]
DPWPionCO100	100 L	490 mm	1060 mm	580 mm	220 mm	450 mm	810 mm	200 mm
DPWPionCO120	120 L	490 mm	1180 mm	660 mm	220 mm	510 mm	940 mm	200 mm
DPWPionCO140	140 L	490 mm	1295 mm	680 mm	210 mm	550 mm	1020 mm	200 mm
DPWPionCO160	160 L	490 mm	1560 mm	820 mm	220 mm	700 mm	1300 mm	200 mm
DPWPionCO180	180 L	490 mm	1760 mm	930 mm	250 mm	800 mm	1500 mm	200 mm
DPWPionCO200	200 L	630 mm	1240 mm	700 mm	220 mm	600 mm	1050 mm	170 mm
DPWPionCO250	250 L	630 mm	1490 mm	830 mm	220 mm	700 mm	1300 mm	170 mm
DPWPionCO300	300 L	630 mm	1740 mm	980 mm	260 mm	770 mm	1500 mm	170 mm
DPWPionCO400	400 L	830 mm	1420 mm	760 mm	290 mm	660 mm	1120 mm	270 mm
DPWPionCO500	500 L	830 mm	1520 mm	850 mm	310 mm	700 mm	1240 mm	270 mm
DPWPionCO600	600 L	680 mm	1920 mm	1080 mm	360 mm	930 mm	1650 mm	200 mm
DPWPionCO750	750 L	830 mm	1920 mm	1060 mm	310 mm	900 mm	1640 mm	270 mm
DPWPionCO1000	1000 L	1000 mm	1590 mm	920 mm	450 mm	780 mm	1250 mm	370 mm

TECHNICAL DATA ref. REGULATIONS

Technical Parameters		Unit measure	DPWPionCO 100L	DPWPionCO 120L	DPWPionCO 140L	DPWPionCO 160L	DPWPionCO 180L	DPWPionCO 200L	DPWPionCO 250L	DPWPionCO 300L	DPWPionCO 400L	DPWPionCO 500L	DPWPionCO 600L	DPWPionCO 750L	DPWPionCO 1000L
Nominal capacity	[L]		100	120	140	160	180	200	250	300	400	500	600	750	1000
Real capacity	[L]		112	127	141	175	200	241	299	355	572	617	592	796	1076
Energy accumulated in the tank. Assumptions for the temperatures: domestic water 42°C; set in the tank 70°C; at the point of consumption 8°C	[L]		205	232	258	320	365	439	546	647	1043	1125	1079	1451	1962
Efficiency of shell 1	[L/h]		177	250	330	406	456	507	583	648	863	1078	1095	1245	1494
Efficiency of shell 2	[L/h]		177	250	330	406	456	507	583	648	863	1078	1095	1245	1494
Power of shell 1	[kW]		9,7	12,0	15,5	16,5	17,5	18,5	22,1	25,6	31,0	40,0	40,5	49,0	67,5
Power of shell 2	[kW]		9,7	12,0	15,5	16,5	17,5	18,5	22,1	25,6	31,0	40,0	40,5	49,0	67,5
Hot water demand	[m³/h]		0,70	0,80	0,80	0,90	1,00	1,05	1,20	1,35	1,80	2,05	2,05	2,45	3,10
Heating fluid demand	[m³/h]		0,70	0,80	0,80	0,90	1,00	1,05	1,20	1,35	1,80	2,05	2,05	2,45	3,10
Heating surface 1	[m²]		0,47	0,55	0,66	0,78	0,92	0,85	1,07	1,27	2,20	1,32	1,65	1,80	1,70
Heating surface 2	[m²]		0,47	0,55	0,66	0,78	0,92	0,85	1,07	1,27	2,20	1,32	1,65	1,80	1,70
Weight	[kg]		32	37	42	54	63	57	72	87	81	88	111	123	96
Water tank maximum working temperature and pressure	[°C / Bar]		70°C / 6 Bar												
Downtime loss (S) in watt [W] for storage capacity in liters [L]	[W]		26	27	28	30	32	34	36	39	46	47	46	51	57
Heat losses depending on the capacity	[kWh/24h]		0,63	0,66	0,68	0,73	0,76	0,81	0,87	0,93	1,09	1,12	1,11	1,23	1,37
Energy class			A+	A+	A+	A+	A+	A	A	A	B	B	B	B	B
Dimensions															
Height	H		1060	1180	1295	1560	1760	1240	1490	1740	1420	1520	1920	1920	1590
Diameter	L		ø490	ø490	ø490	ø490	ø490	ø630	ø630	ø630	ø830	ø830	ø680	ø830	ø1000
Connector - 5/4" or 6/4"	A		580	660	680	820	930	700	830	980	760	850	1080	1060	920
	B		220	220	210	220	250	220	220	260	290	310	360	310	450
	E		450	510	550	700	800	600	700	770	660	700	930	900	780
	D		810	940	1020	1300	1500	1050	1300	1500	1120	1240	1650	1640	1250
Drain - (1/2" for 80L - 140L; 3/4" for 160L - 1000L)	E		200	200	200	200	200	170	170	170	270	270	200	270	370

SCHEMA - DOUBLE SHELL WATER EXCHANGER FOR TWO SOURCES OF HEAT



LEGEND

- 1. DOMESTIC WATER INTAKE 3/4"
- 2. WATER CIRCULATION 1/2"
- 3. DOMESTIC WATER SUPPLY 3/4"
- 4. CAPILARY TUBE
TEMPERATURE SENSOR 1/2"
- 5. SUPPLY CENTRAL HEATING 1"
- 6. DOUBLE SHELL CENTRAL HEATING
- 7. POLYURETHANE FOAM
THERMAL INSULATION
- 8. DOMESTIC WATER SUPPLY 3/4"
- 9. ANTI CORROSION LAYER
- 10. DRAIN 3/4"
- 11. WATER RETURN (CENTRAL HEATING) 1"
- 12. ELECTRIC HEATER WITH THERMOSTAT 5/4"
- 13. THERMOMETER 1/2"
- 14. SOLAR POWER SUPPLY 1"
- 15. DOUBLE SHELL (SOLAR)
- 16. CAPILLARY TUBE FOR SOLAR
TEMPERATURE SENSOR 1/2"
- 17. SOLAR ENERGY RETURN 1"