



Solar Energy Hot Water Systems - Boilers



four seasons



Our company, which produces solar energy systems since 1985, became a family company by changing the partnership structure in order to provide better quality service for our dealers and customers in 2010.

“ÖZKAN GÜNEŞ ENERJİ SİSTEMLERİ SAN VE TİC. LTD. STİ” , which incorporates its second brand as OGES into its company, has continued its investments by completing construction of factory area with 11000 m2 open area and 6.500 m2 closed area in 2016. Our company established the enamel plant in 2017, and has the justified pride of being one of the leading companies of Turkey in the field of serpentine quick boilers and accumulation tanks from 100 liters to 6000 liters.

With its modernized machinery and equipment, the professional team has allocated a significant share for R & D investment expenditures and has adopted the principle of “quality first”. Having many quality certificates in it, our company has recently registered TSE-736, CE-2413, ISO 9001-2015 quality assurance system.

Our company, not compromising on quality and customer satisfaction for a long time, expanded its product range day by day and added pressure tanks, serpentine quick boilers and accumulation tanks to the production line. In today’s world where alternative energy solutions have increased, our company is progressing firmly.

Our company is aware that it needs to improve product quality in order to compete and survive in the rapidly advancing world on the path of globalization and is pleased to offer its products both at home and abroad with its dealers and marketing network which were quickly spread throughout Turkey.

OUR QUALITY POLICY

- Our quality understanding is to leave a clean environment for future generations, to avoid movements and actions that will disrupt the balance of nature.
- With the participation of our employees, we ensure that the quality system and processes are continuously improved and developed by using the available technology.
- Our aim is to maintain the quality of “OZKAN SOLAR ENERGY SYSTEMS” with an innovative point of view, to be the first choice by giving timely and complete answers to our customers demands with our colleagues,
- To raise customer satisfaction to the highest level, to maintain the line of satisfaction and to continuously improve,
- To establish open relationships based on long-term, goodwill and honesty with our supplier companies in business relationship, to contribute and support the development of mutual understanding of quality,
- To make our brand “OZKAN SOLAR ENERGY SYSTEMS (OGES)” a leading model of the world Heating Energy Market with the contribution of our proactive colleagues.





four seasons

Okyanus <i>Atmosphere closed solar energy hot water systems</i>	
08-09	Lifos
10-11	Asya
12-13	Hisar
Okyanus <i>Atmosphere open manifold collector solar energy hot water systems</i>	
14-15	Royal
Okyanus <i>Atmosphere open solar energy hot water systems</i>	
16-17	Venus
Collectors	
18-19	Aluminium surface collector
20	Selective surface collector
21	Copper surface collector
22-23	Manifold collector
Platin <i>Serpentine boiler with electrical panel</i>	
24-27	Platin Single serpentine boiler with electrical panel
28-31	Platin Double serpentine boiler with electrical panel
Platin <i>Serpentine boiler without electrical panel</i>	
32-35	100-600 Lt. Platin Single serpentine boiler without electrical panel
36-39	100-600 Lt. Platin Double serpentine boiler without electrical panel

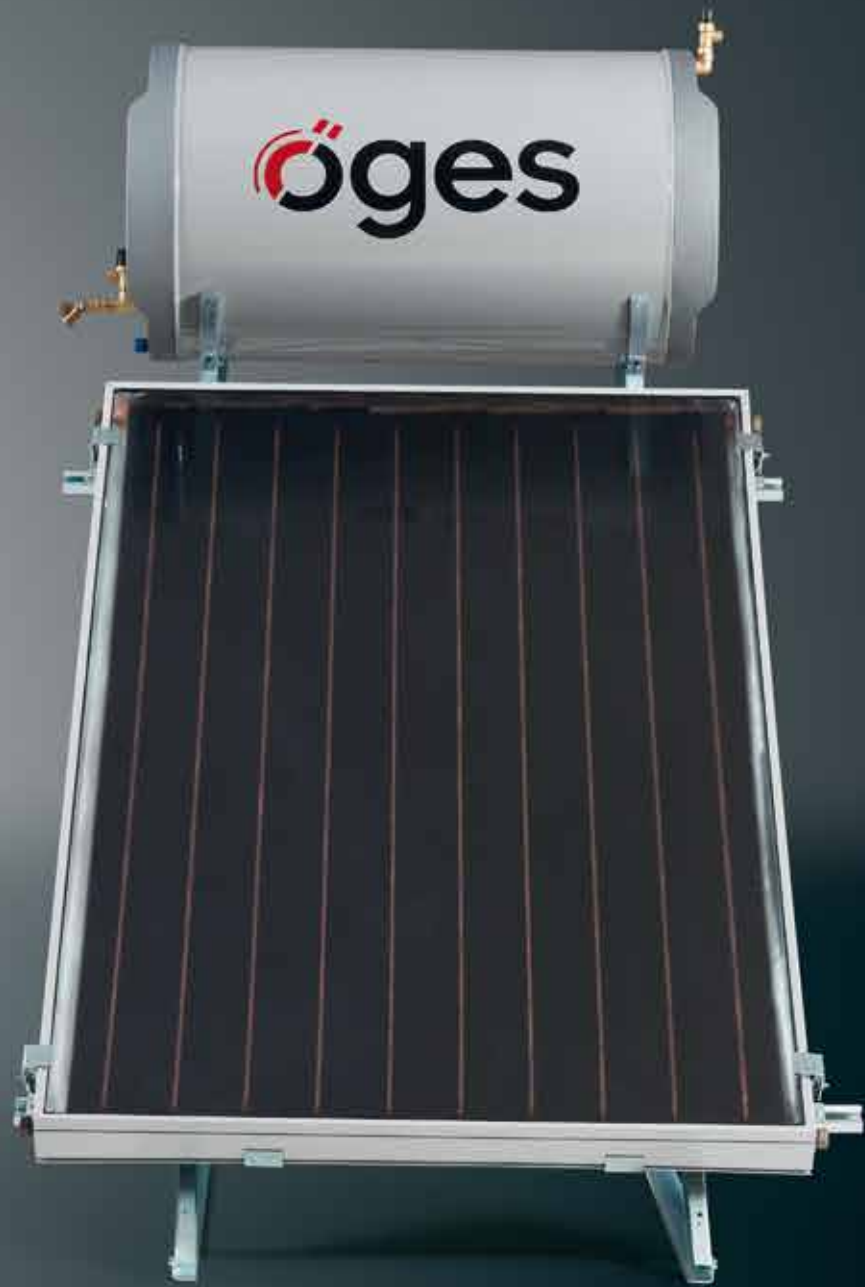
Platin <i>Serpentine boiler without electrical panel</i>	
40-43	800-6000 Lt. Platin Single serpentine boiler without electrical panel
44-47	800-6000 Lt. Platin Double serpentine boiler without electrical panel

Accumulation Tanks	
48-49	Accumulation Tank with electrical panel
50-51	Accumulation Tank without electrical panel

Buffer Tank & Heat Pump Boiler	
52-53	OG-04 Buffer Tank buffer tank
54-55	OG-05 Heat Pump Boiler head pump boiler
56-57	OG-07 Buffer Tank & Heat Pump Boiler buffer tank & heat pump boiler

BATHROOM BOILER	
58-59	Bathroom boiler

ACCESSORIES AND EQUIPMENT	
60	Fixed carrier stand
61	Angle adjustable carrier stand
62-63	Accessories and equipment



Atmosphere closed solar energy hot water systems



four seasons



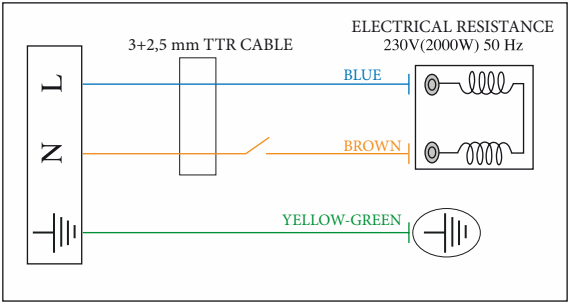
Pressurized solar energy hot water systems

Advantages

Okyanus systems are pressure systems that work directly with city network without cold water supply or float addition as an open circuit without anti-freeze or a closed circuit with anti-freeze. The inner surface is coated with titanium-based enamel, and it is hygienic and has a long service life. The loss of antifreeze is the minimum because it is closed to the atmosphere. Especially, it has higher performance and more convenient usage characteristics than the conventional float systems in terms of hot water comfort designed for areas where there is no water cut.

Working Principle

Such systems are natural circulation and operate under pressure. It provides hot water as much as the network pressure. It works according to the closed containers principle and reaches to the network pressure during the first filling before the system starts to work. The system water capacity can be increased by connecting in parallel.



- 1. Internal Tank Enamelled Steel Produced from the material.
- 2. Insulation: 60 mm Direct Injected Polyurethane
- 3. Outer Jacket (Heating Head)
- 4. Outer Coating: Metal Coated with 200 °C Furnace Electrostatic Powder Coating
- 5. Magnesium Anode
- 6. Electric Heater Inlet
- 7. Cold Water Inlet
- 8. Hot Fluid Return from Collector
- 9. Cold Fluid Return from Collector
- 10. Using Hot Water Output
- 11. Safety Valve
- 12. Side Intervention Covers



O-01 150 LT/O-01-A 150 Lt Horizontal Tank	Closed Loop	Open Loop
Capacity (Lt.)	150 Lt	150 Lt
Diameter (D)	Ø 600	Ø 600
Length (L)	1080	1080
Cold Water Inlet (S)	3/4"	3/4"
Hot Water Outlet (Y)	3/4"	3/4"
Safety Valve (Antifreeze Ventilation Outlet)	3/4"	-
Collector Departure (Cold) Connection	3/4"	3/4"
Return (Hot) Connection from Collector	3/4"	3/4"
Anode	Linked to Flange	Linked to Flange
Heating (with Resistance)	1 1/4"	1 1/4"
Exchanger Capacity	7.5 Lt	-
Tank Hot Water Volume	150 Lt	150 Lt
Insulation (Polyurethane)	Polyurethane	Polyurethane
Polyurethane Thickness	60mm	60mm
Exchanger Working Pressure	3 Bar	-
Tank Working Pressure	9 Bar	9 Bar
Tank Test Pressure	15 Bar	15 Bar
Exchanger Test Pressure	4.5 Bar	-
Weight ~	68 Kg	58 Kg



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Atmosphere closed solar energy hot water systems



Pressurized solar energy hot water systems

Advantages

Okyanus systems are pressure systems that work directly with city network without cold water supply or float addition as an open circuit without anti-freeze or a closed circuit with anti-freeze. The inner surface is coated with titanium-based enamel, and it is hygienic and has a long service life. The loss of antifreeze is the minimum because it is closed to the atmosphere. Especially, it has higher performance and more convenient usage characteristics than the conventional float systems in terms of hot water comfort designed for areas where there is no water cut.

Working Principle

Such systems are natural circulation and operate under pressure. It provides hot water as much as the network pressure. It works according to the closed containers principle and reaches to the network pressure during the first filling before the system starts to work. The system water capacity can be increased by connecting in parallel.



System Intrusion Safety Group



Collector Safety Group

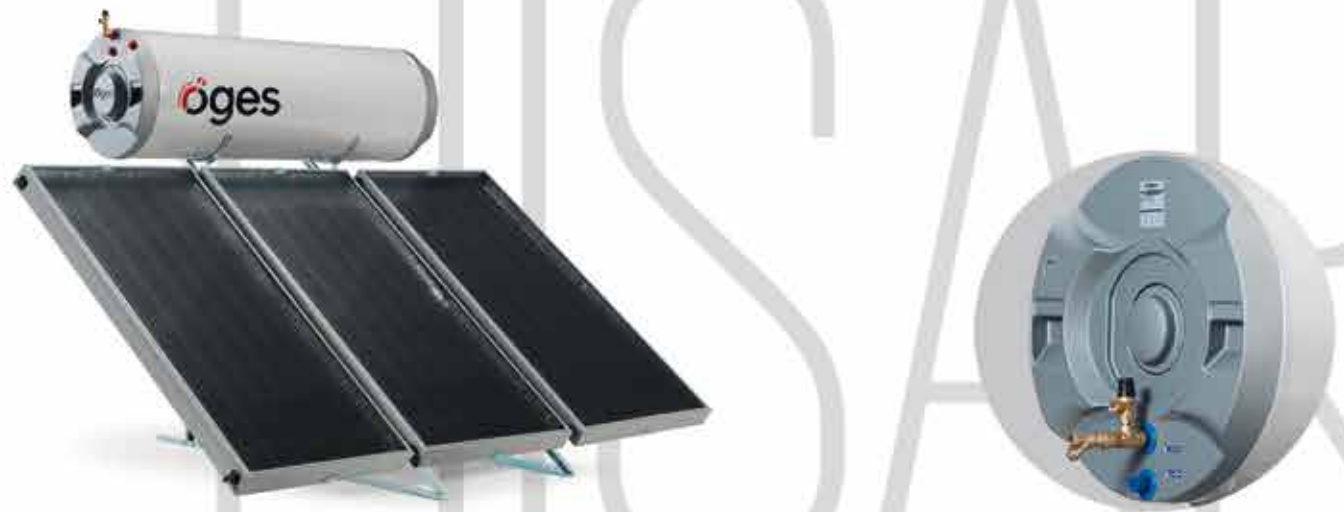


O-02 200 LT/O-02-A 200 Lt Horizontal Tank	Closed Loop	Open Loop
Capacity (Lt.)	200 Lt	200 Lt
Diameter (D)	Ø 600	Ø 600
Length (L)	1330	1330
Cold Water Inlet (S)	3/4"	3/4"
Hot Water Outlet (Y)	3/4"	3/4"
Safety Valve (Antifreeze Ventilation Outlet)	3/4"	-
Collector Departure (Cold) Connection	3/4"	3/4"
Return (Hot) Connection from Collector	3/4"	3/4"
Anode	Linked to Flange	Linked to Flange
Heating (with Resistance)	1 1/4"	1 1/4"
Exchanger Capacity	11.5 Lt	-
Tank Hot Water Volume	200 Lt	200 Lt
Insulation (Polyurethane)	Polyurethane	Polyurethane
Polyurethane Thickness	60mm	60mm
Exchanger Working Pressure	3 Bar	-
ank Working Pressure	9 Bar	9 Bar
Tank Test Pressure	15 Bar	15 Bar
Exchanger Test Pressure	4.5 Bar	-
Weight ~	85 Kg	75 Kg



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Atmosphere closed solar energy hot water systems



Pressurized solar energy hot water systems

Advantages

Okyanus systems are pressure systems that work directly with city network without cold water supply or float addition as an open circuit without anti-freeze or a closed circuit with anti-freeze. The inner surface is coated with titanium-based enamel, and it is hygienic and has a long service life. The loss of antifreeze is the minimum because it is closed to the atmosphere. Especially, it has higher performance and more convenient usage characteristics than the conventional float systems in terms of hot water comfort designed for areas where there is no water cut.

Working Principle

Such systems are natural circulation and operate under pressure. It provides hot water as much as the network pressure. It works according to the closed containers principle and reaches to the network pressure during the first filling before the system starts to work. The system water capacity can be increased by connecting in parallel.



O-03 300 LT/O-03-A 300 Lt Horizontal Tank	Closed Loop	Open Loop	Closed Loop
Capacity (Lt.)	300 Lt	300 Lt	500 Lt
Diameter (D)	Ø 600	Ø 600	Ø 780
Length (L)	1855	1855	1780
Cold Water Inlet (S)	3/4"	3/4"	3/4"
Hot Water Outlet (Y)	3/4"	3/4"	3/4"
Safety Valve (Antifreeze Ventilation Outlet)	3/4"	-	3/4"
Collector Departure (Cold) Connection	3/4"	3/4"	3/4"
Return (Hot) Connection from Collector	3/4"	3/4"	3/4"
Anode	Linked to Flange	Linked to Flange	Linked to Flange
Heating (with Resistance)	1 1/4"	1 1/4"	1 1/4"
Exchanger Capacity	20.5 Lt	-	27,5
Tank Hot Water Volume	300 Lt	300 Lt	500 Lt
Insulation (Polyurethane)			
Polyurethane Thickness	60mm	60mm	60mm
Exchanger Working Pressure	3 Bar	-	3 Bar
Tank Working Pressure	9 Bar	9 Bar	9 Bar
Tank Test Pressure	15 Bar	15 Bar	15 Bar
Exchanger Test Pressure	4.5 Bar	-	4,5
Weight ~	118 Kg	108 Kg	195 Kg



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Atmosphere open solar energy manifold collector hot water systems



Atmosphere open manifold collector solar energy hot water systems

Advantages

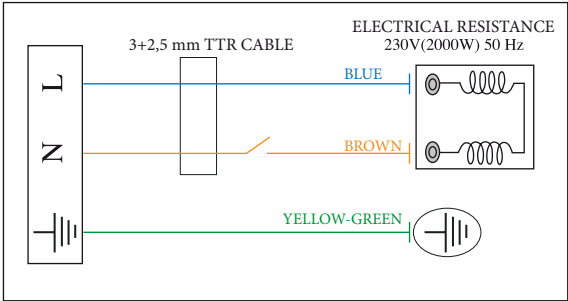
Okyanus systems have antifreeze and they are pressure systems operating directly with the city network without the addition of cold water supply or float. The inner surface is coated with titanium-based enamel, which is hygienic and has a long lifetime.

Especially, it has higher performance and more convenient usage characteristics than the conventional float systems in terms of hot water comfort designed for areas where there is no water interruption. The required hot water capacity can be increased by connecting in parallel. Antifreeze decreases can be seen because it is open to the atmosphere.

The heating efficiency is always at the highest level because the vacuum tubes have cylindrical absorber surfaces with selective absorptive surfaces and they receive sunlight at right angles throughout the day. It has the ability to be used in all systems that are open to the atmosphere.

Working Principle

Such systems are natural circulation and operate under pressure. It provides hot water as much as the network pressure. It works according to the closed containers principle and reaches to the network pressure during the first filling before the system starts to work. The system water capacity can be increased by connecting in parallel.



Capacity (Lt.)	120 Lt	170 Lt	300 Lt	500 Lt
Diameter (D)	Ø 500	Ø 500	Ø 600	Ø 780
Length (L)	1200	1700	1855	1780
Cold Water Inlet (S)	3/4"	3/4"	3/4"	3/4"
Hot Water Outlet (Y)	3/4"	3/4"	3/4"	3/4"
Safety Valve (Antifreeze Ventilation Outlet)	3/4"	3/4"	3/4"	3/4"
Collector Departure (Cold) Connection	3/4"	3/4"	3/4"	3/4"
Return (Hot) Connection from Collector	3/4"	3/4"	3/4"	3/4"
Anot / Anode	Linked to Flange	Linked to Flange	Linked to Flange	Linked to Flange
Heating (with Resistance)	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Tank Hot Water Volume	120 Lt	170 Lt	300 Lt	500 Lt
Insulation (Polyurethane)	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Polyurethane Thickness	60mm	60mm	60mm	60mm
Tank Working Pressure	9 Bar	9 Bar	9 Bar	9 Bar
Tank Test Pressure	15 Bar	15 Bar	15 Bar	15 Bar
Exchanger Test Pressure	4,5 Bar	4,5 Bar	4,5 Bar	4,5 Bar
Weight ~	63 Kg	86 Kg	118 Kg	195 Kg



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Atmosphere open solar energy hot water systems



- 1. Internal Tank Produced from the Enamelled Steel Material.
- 2. Insulation: 60 mm Direct Injected Polyurethane
- 3. Outer Jacket (Heating Head)
- 4. Outer Coating: Metal Coated with 200 °C Furnace Electrostatic Powder Coating
- 5. Magnesium Anode
- 6. Electric Heater Inlet
- 7. Cold Water Inlet
- 8. Hot Fluid Return from Collector
- 9. Cold Fluid Return from Collector
- 10. Using Hot Water Output
- 11. Safety Valve
- 12. Side Intervention Covers
- 13. Antifreeze Container / Ventilation Pipe

Advantages

Okyanus systems have antifreeze and they are pressure systems operating directly with the city network without the addition of cold watersupply or float. The inner surface is coated with titanium-based enamel, which is hygienic and has a long lifetime. Especially, it has higher performance and more convenient usage characteristics than the conventional float systems in terms of hot water comfort designed for areas where there is no water interruption. The required hot water capacity can be increased by connecting in parallel. Antifreeze decreases can be seen because it is open to the atmosphere.

Working Principle

Such systems are natural circulation and operate under pressure. It provides hot water as much as the network pressure. It works according to the closed containers principle and reaches to the network pressure during the first filling before the system starts to work. The system water capacity can be increased by connecting in parallel. It can be produced as closed loop and open loop.

Capacity (Lt.)	120 Lt	170 Lt	300 Lt	500 Lt
Diameter (D)	Ø 500	Ø 500	Ø 600	Ø 780
Length (L)	1200	1700	1855	1780
Cold Water Inlet (S)	3/4"	3/4"	3/4"	3/4"
Hot Water Outlet (Y)	3/4"	3/4"	3/4"	3/4"
Safety Valve (Antifreeze Ventilation Outlet)	3/4"	3/4"	3/4"	3/4"
Collector Departure (Cold) Connection	3/4"	3/4"	3/4"	3/4"
Return (Hot) Connection from Collector	3/4"	3/4"	3/4"	3/4"
Anot / Anode	Linked to Flange	Linked to Flange	Linked to Flange	Linked to Flange
Heating (with Resistance)	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Tank Hot Water Volume	120 Lt	170 Lt	300 Lt	500 Lt
Insulation (Polyurethane)	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Polyurethane Thickness	60mm	60mm	60mm	60mm
Tank Working Pressure	9 Bar	9 Bar	9 Bar	9 Bar
Tank Test Pressure	15 Bar	15 Bar	15 Bar	15 Bar
Exchanger Test Pressure	4.5 Bar	4.5 Bar	4.5 Bar	4.5 Bar
Weight ~	63 Kg	86 Kg	118 Kg	195 Kg

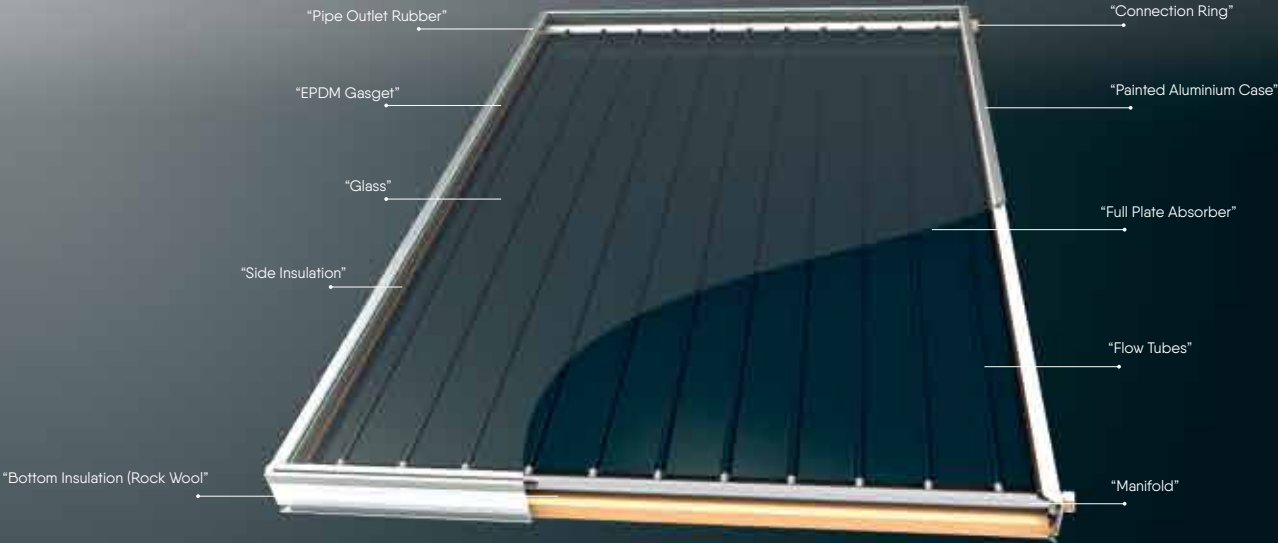


S 930 x 1930 mm/800 mm	Features	Round	Oval	Copper	Selective
	Capacity (Lt.)	4.2	5.8	2	2
	Weight (Kg)	30	30	30	30
	Dimension (mm)	930x1930	930x1930	930x1930	930x1930
	Carrier pipe (Ad.)	12	10	8	8
	Clear surface area (m2)	1.6	1.6	1.6	1.6
	Gross surface area (m2)	1.8	1.8	1.8	1.8
	Test pressure (Bar)	9	9	13.5	13.5
	Top cover	Glass			
	Insulation	Glass wool			
	Case	Static paint-aluminum			
	* Polyurethane insulation is optional.				
* Top cover can be made of tempered glass.					

STANDARD S CASE



STANDARD L CASE

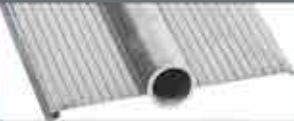


L 1215 x 1905 mm / 850 mm	Features	Round	Oval	Copper	Selective
	Capacity (Lt.)	3.7	7.5	2.6	2.6
	Weight (Kg)	41	41	41	41
	Dimension (mm)	1215x1905	1215x1905	1215x1905	1215x1905
	Carrier pipe (Ad.)	10	13	10	10
	Clear surface area (m2)	2.16	2.16	2.16	2.16
	Gross surface area (m2)	2.31	2.31	2.31	2.31
	Test pressure (Bar)	9	9	13.5	13.5
	Top cover	Tempered Glass			
	Insulation	Glass wool / Polyurethane			
Case		Static paint-aluminum			



STANDARD L CASE

ROUND ALUMINUM PANEL

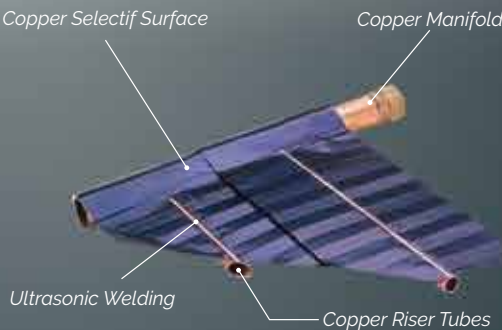


OVAL ALUMINUM PANEL



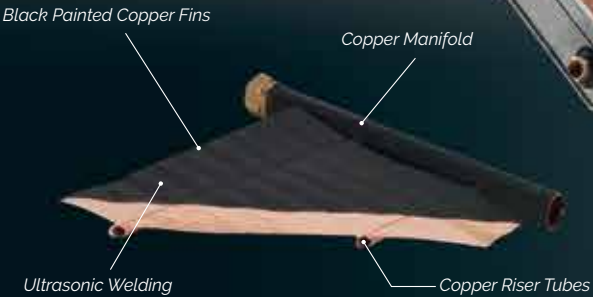
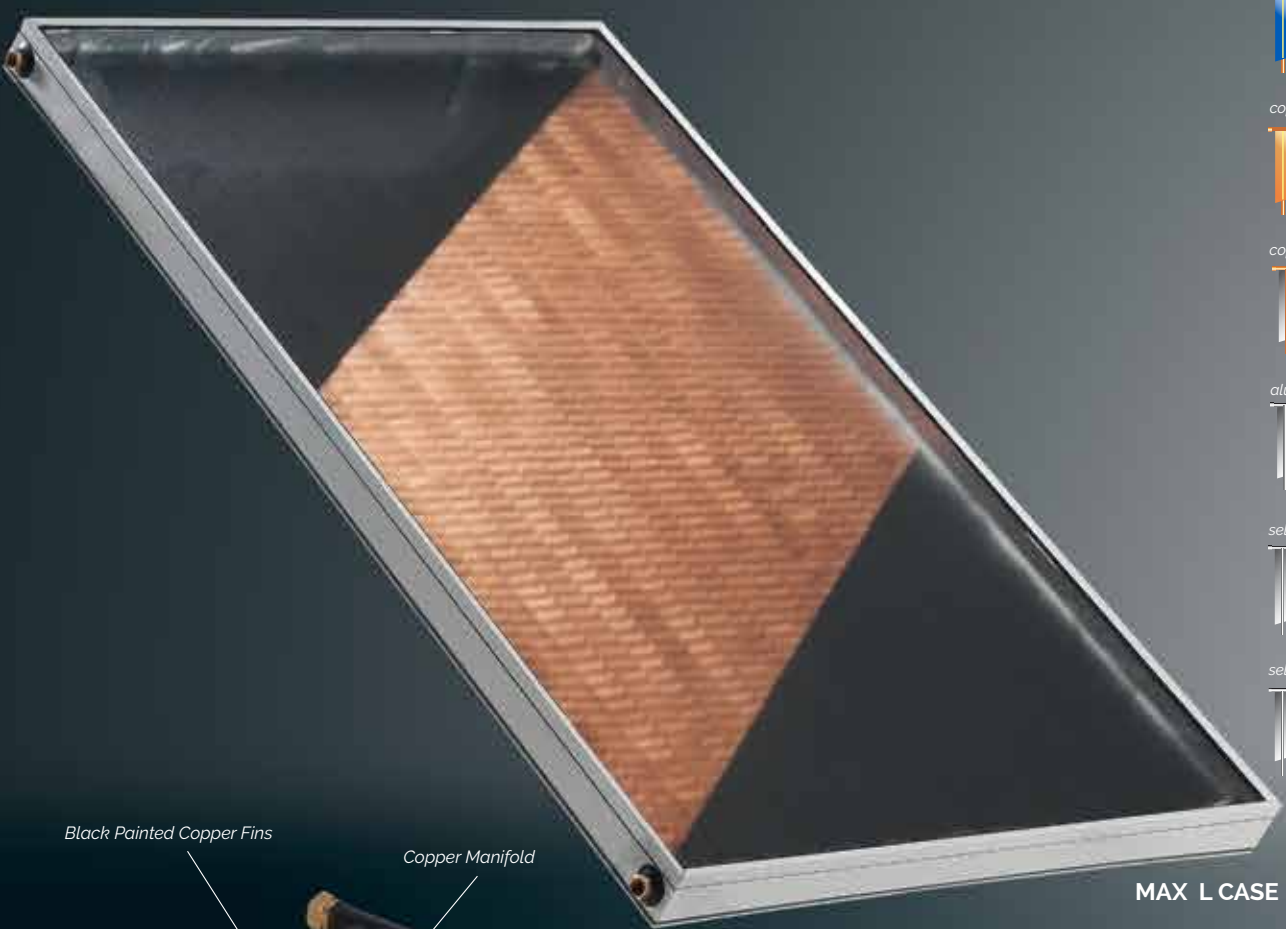


The absorbing surfaces used in the collectors must have a high swelling rate of solar radiation and a minimum reflectivity. Surfaces that swallow almost all solar rays and provide minimum loss are called selective surface.

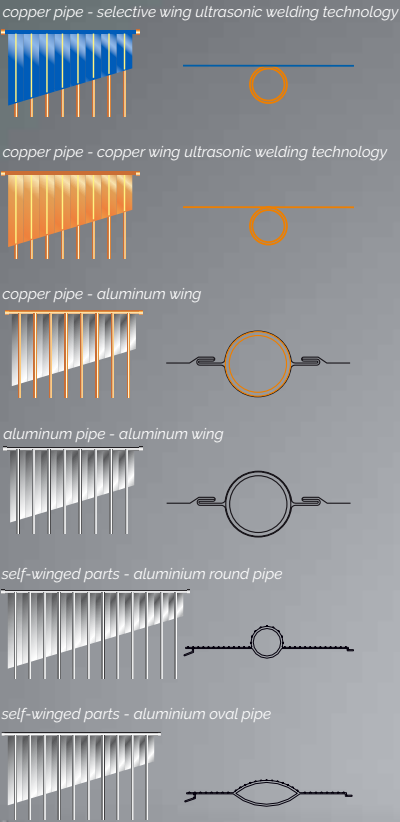


1215 x 1905 mm / 850 mm	Features	Round	Oval	Copper	Selective
	Capacity (Lt.)	3.7	7.5	2.6	2.6
	Weight (Kg)	41	41	41	41
	Dimension (mm)	1215x1905	1215x1905	1215x1905	1215x1905
	Carrier pipe (Ad.)	10	13	10	10
	Clear surface area (m2)	2.16	2.16	2.16	2.16
	Gross surface area (m2)	2.31	2.31	2.31	2.31
	Test pressure (Bar)	9	9	13.5	13.5
	Top cover	Tempered Glass			
	Insulation	Glass wool / Polyurethane			
	Case	Static paint-aluminum			

Selective surface collector



1215 x 1905 mm / 850 mm	Features	Round	Oval	Copper	Selective
	Capacity (Lt.)	3.7	7.5	2.6	2.6
	Weight (Kg)	41	41	41	41
	Dimension (mm)	1215x1905	1215x1905	1215x1905	1215x1905
	Carrier pipe (Ad.)	10	13	10	10
	Clear surface area (m2)	2.16	2.16	2.16	2.16
	Gross surface area (m2)	2.31	2.31	2.31	2.31
	Test pressure (Bar)	9	9	13.5	13.5
	Top cover	Tempered Glass			
	Insulation	Glass wool / Polyurethane			
	Case	Static paint-aluminum			



Copper surface collector





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Manifold collector



Manifold collector

Advantages

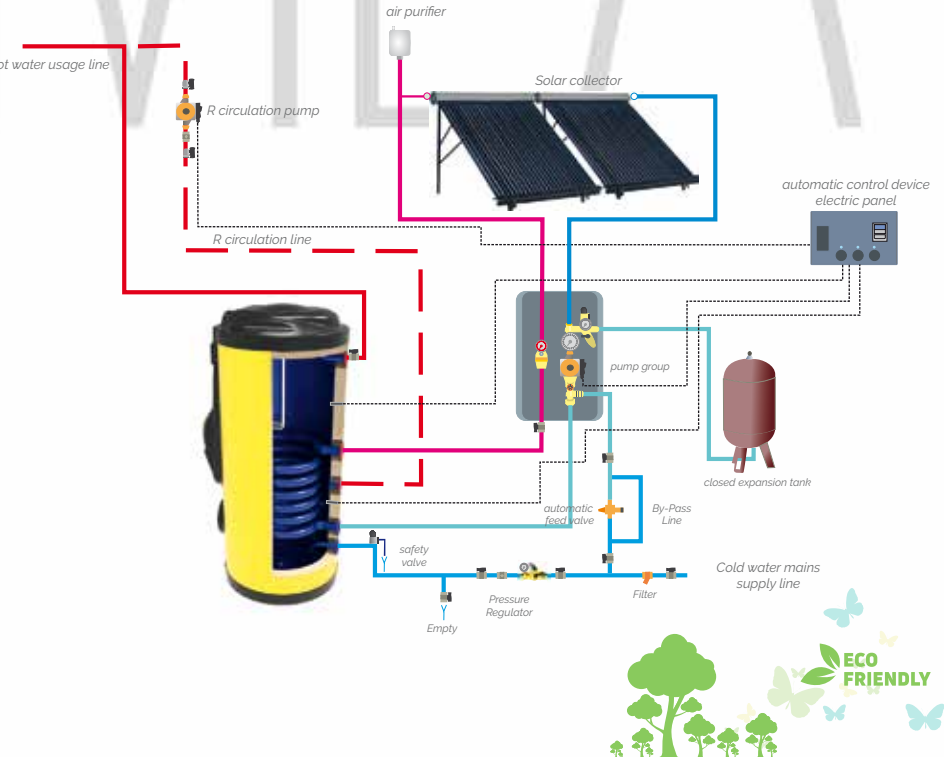
Because the vacuum tubes have cylindrical absorber surfaces with selective absorber surfaces, they receive their sunlight at right angles throughout the day, so their heating efficiency is always at the highest level.

Öges vacuum tube manifold collecting systems are the systems operating with natural or forced circulation. The heat obtained from the glass tubes is transferred by being circulated through the direct or alternative heating system to the running water. It has the function of working without anti-freeze up to -20 °C. It is extremely easy to install and set up with its high efficiency.

Working Principle

Vacuum systems have natural and forced circulation and have the ability to get daylight at all hours of the day with the same efficiency.

There is an electronic controller in the forced circulation that controls the system. Thanks to this device, the temperatures of the collector and the boiler are measured and the necessary temperature is transferred to the boiler by means of the circulation pump. Such systems, like natural circulation systems, do not necessarily have to lift the tank to a higher level than the collector.



Tube Number	24 Tube	30 Tube
Tube Size (mm)	47x1800	47x1800
System Capacity (lt.)	23	28
Absorber Surface	3.8	4.6
Tank Dimension	150x1670	150x2050
Outer Body	Static Painting/430 Chrome	Static Painting/430 Chrome
Inner Body	Enamel	Enamel



hygiene

polyurethane
insulation

enamel coating

Systems that produce
Domestic Hot Water (DHW)

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Advantages

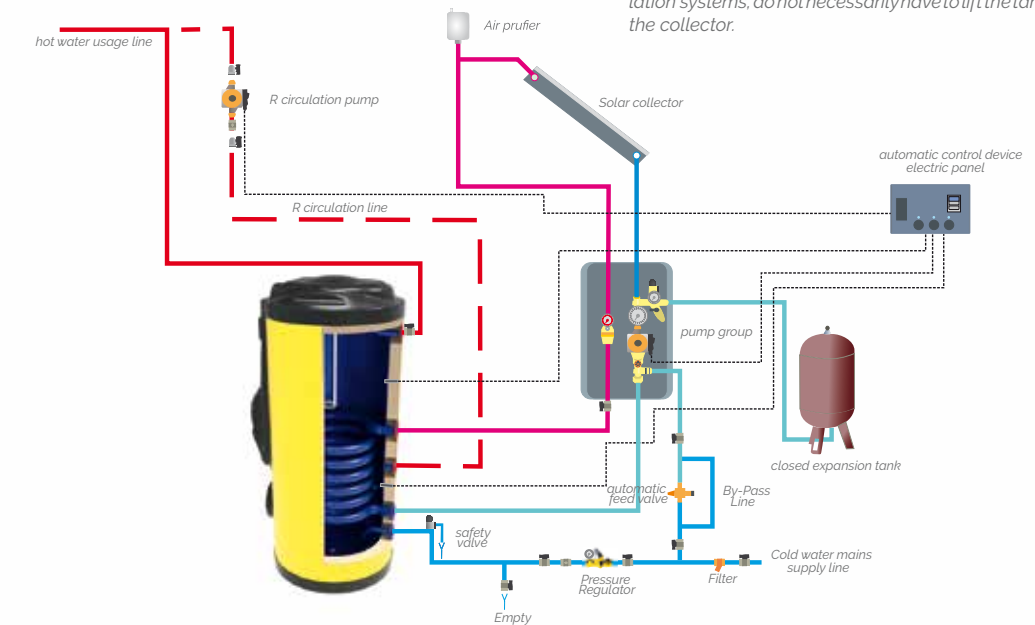
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process; the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

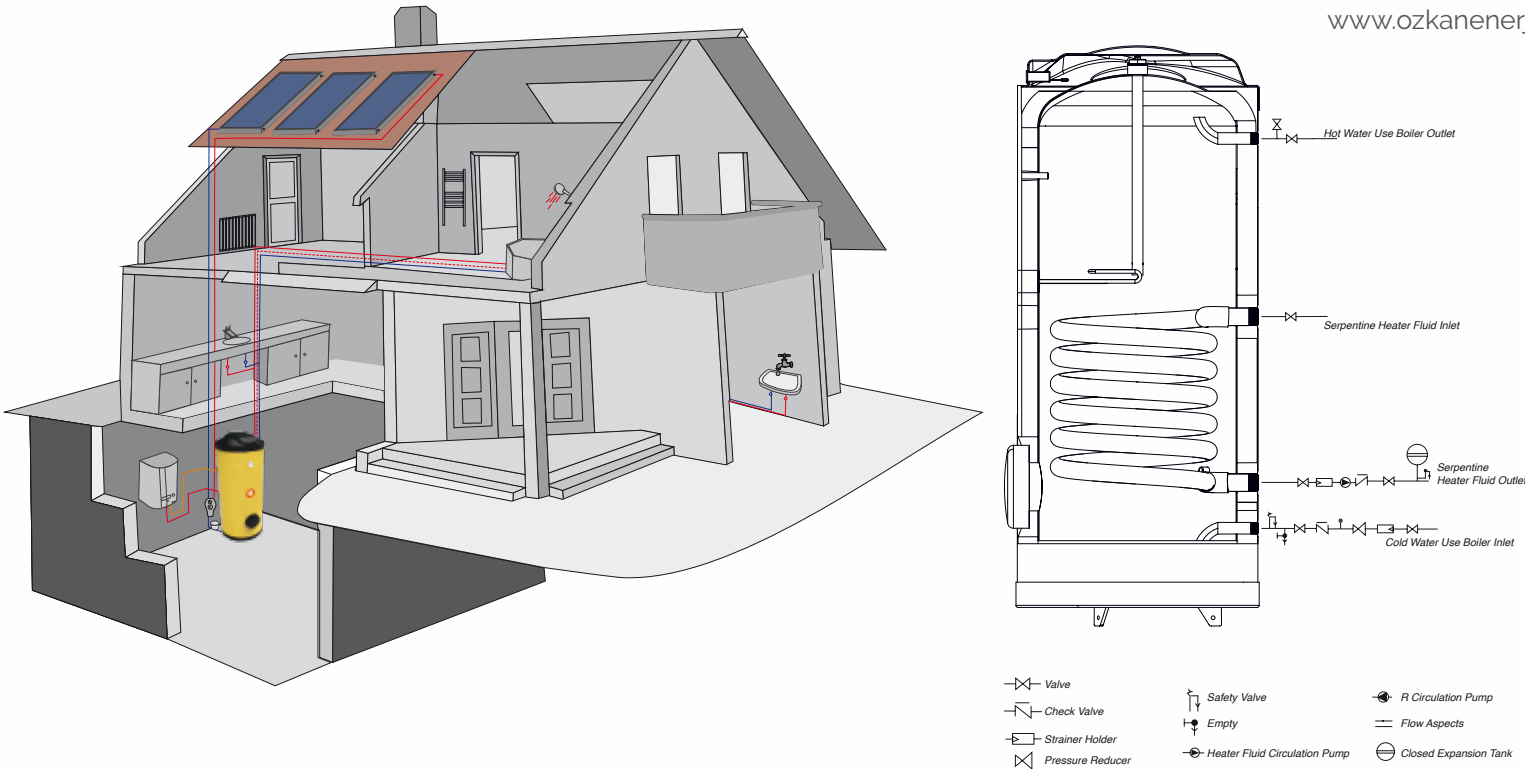
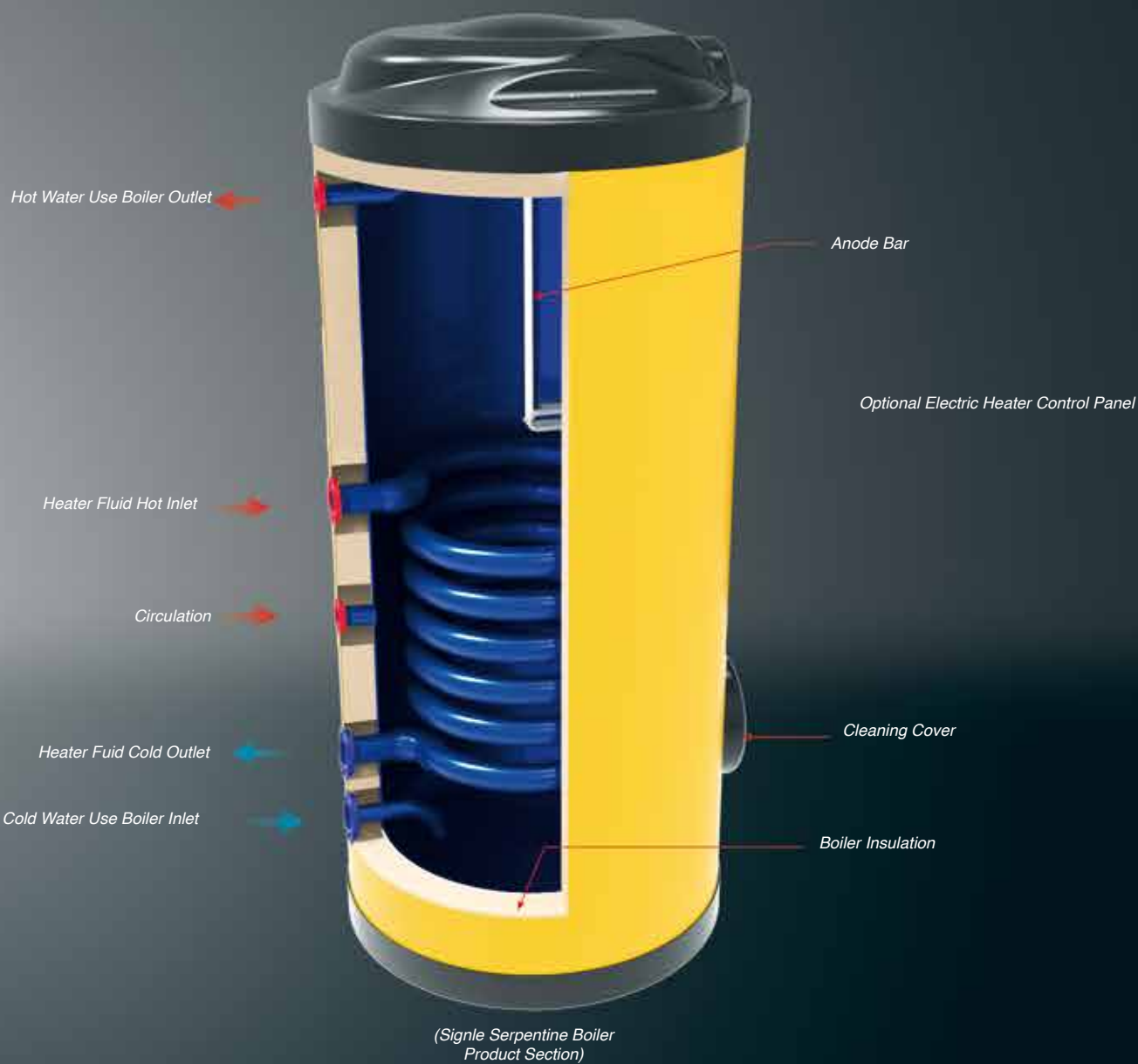
Working Principle

They are pressure vessels that heat and store water in apartments and all kinds of facilities with a central hot water system thanks to the specially designed serpentine for the production and storage of clean hot water.

A single serpentine boiler is a type of boiler which provides water heating and storage process with only one serpentine in it.

There is an electronic controller in the forced circulation that controls the system. Thanks to this device, the temperatures of the collector and the boiler are measured and the necessary temperature is transferred to the boiler by means of the circulation pump. Such systems, like natural circulation systems, do not necessarily have to lift the tank to a higher level than the collector.

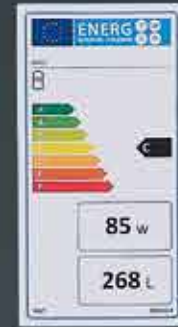
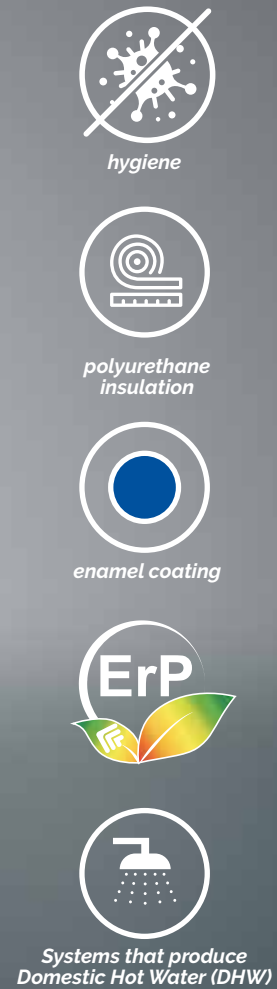




100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

Type	OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
Capacity	100	160	200	300	400	500	600	800	1000	1500	2000	2500	3000	4000	5000	6000
Diameter (D)	480	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1160	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Heating Area 1 (Serpentine-WAT1 bottom)	0.59 m²	0.82 m²	0.99 m²	1.60 m²	1.82 m²	2.28 m²	2.50 m²	3.26 m²	3.53 m²	3.97 m²	4.95 m²	5.92 m²	7.39 m²	8.5 m²	11.74 m²	12.66 m²
Flange (ØT)	DN 100	DN 100	DN 100	DN 100	DN 100	DN 200	DN 200	DN 200	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400
(M)	320	320	336	336	387	387	477	488	717	716	755	753	1200	1380	1550	
Max. Boiler Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Boiler Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Boiler Working Temperature	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Serpentine Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Serpentine Working Temperature	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C
Weight	65	95	105	120	175	185	200	275	330	510	560	595	835	1475	1650	1800

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



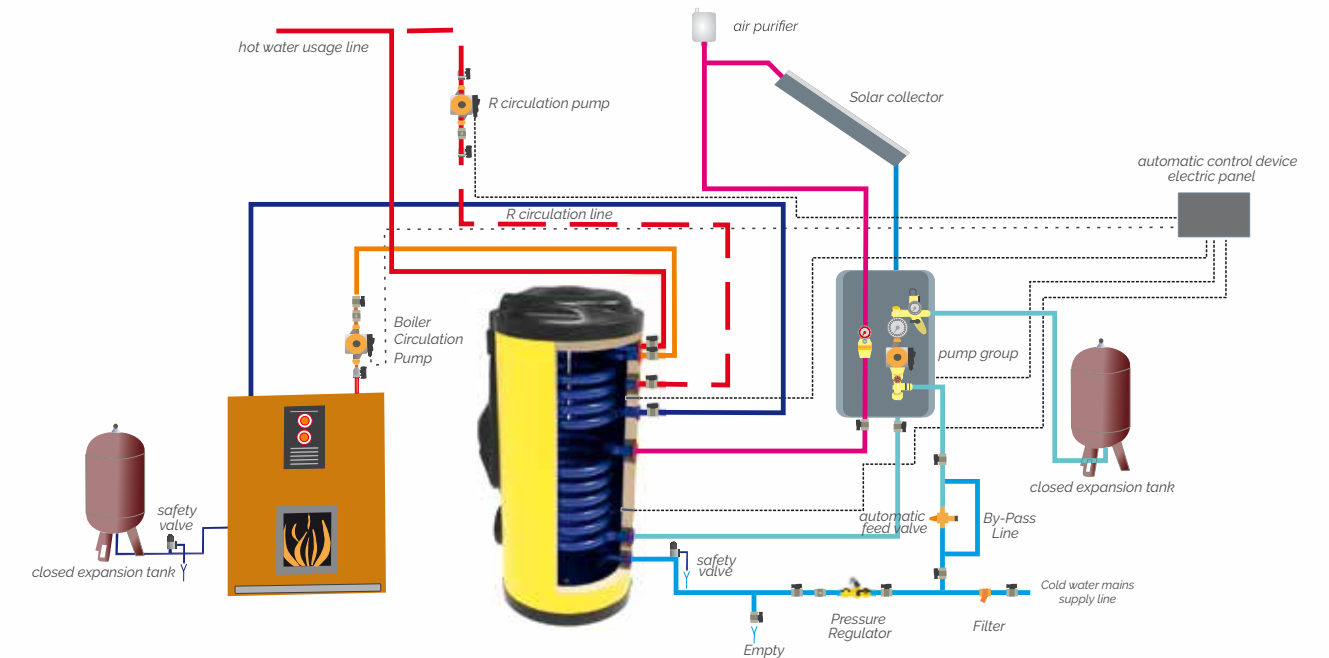
Advantages

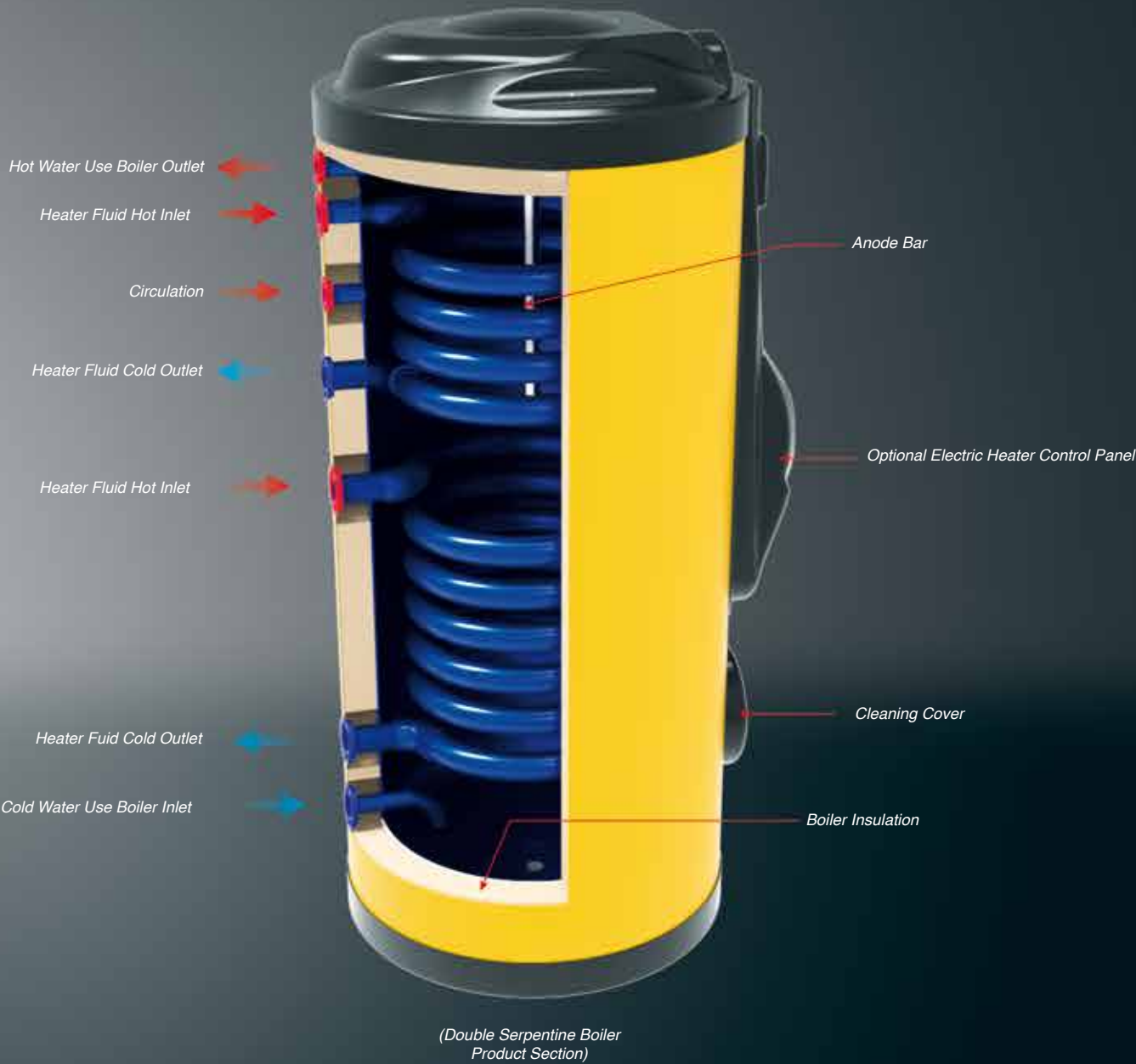
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process; the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

Working Principle

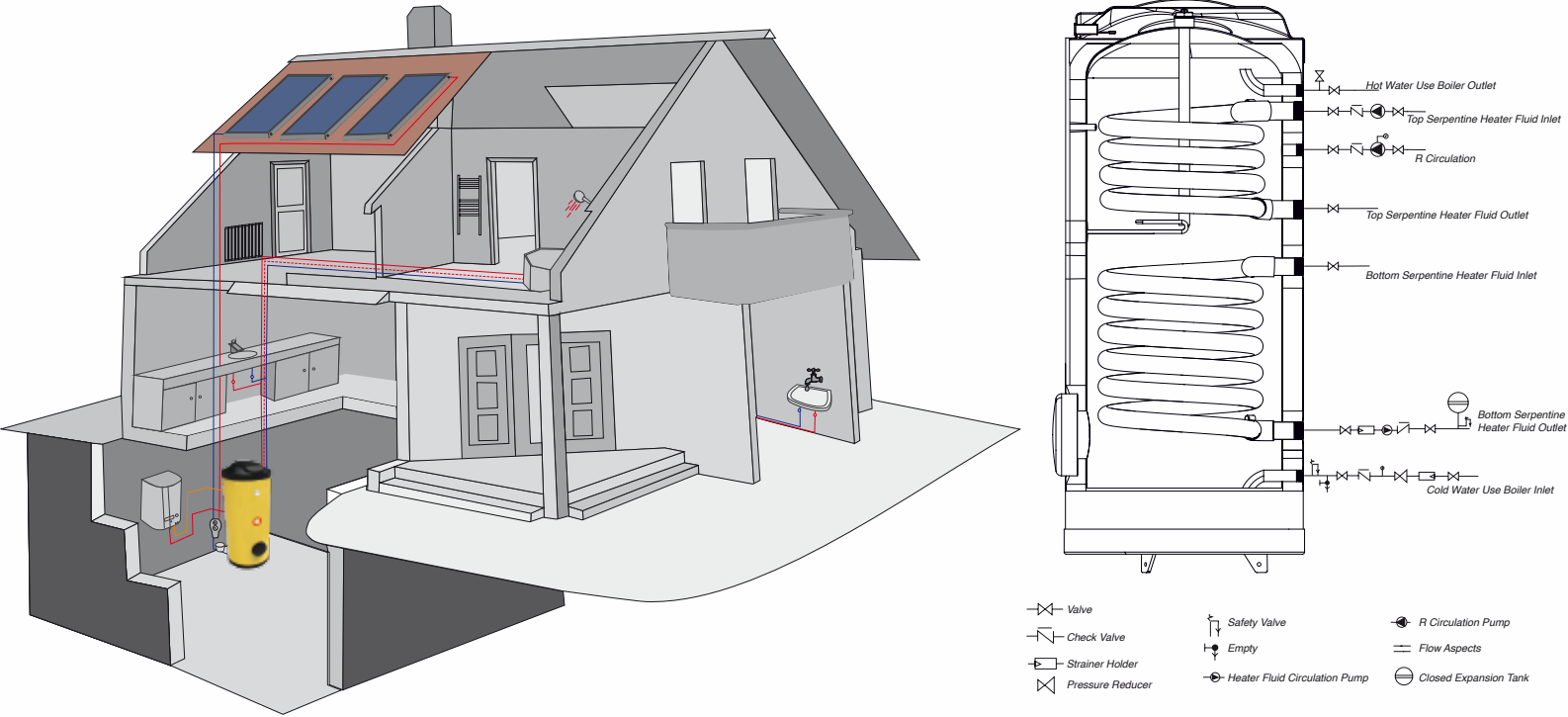
They are pressure vessels that heat and store water in apartments and all kinds of facilities with a central hot water system thanks to the specially designed serpentine for the production and storage of clean hot water.

The double serpentine boiler is a kind of boiler that performs the heating process by means of the double serpentine in the boiler (for example, Those working with 2 heat sources such as solar energy, natural gas, solid fuel heater) in order to make the instant heating more powerful.





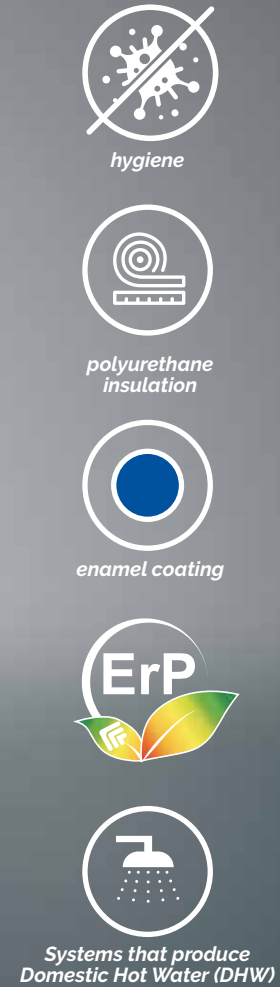
(Double Serpentine Boiler Product Section)



100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

Type	OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
Capacity	160	200	300	400	500	600	800	1000	1500	2000	2500	3000	4000	5000	6000
Diameter (D)	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Heating Area 1 (Serpentine-WAT1 bottom)	0.82 m²	0.99 m²	1.60 m²	1.82 m²	2.28 m²	2.50 m²	3.26 m²	3.53 m²	3.97 m²	4.95 m²	5.92 m²	7.39 m²	8.5 m²	11.74 m²	12.66 m²
Heating Area 2 (Serpentine-WAT2 top)	0.61 m²	0.80 m²	0.98 m²	1.15 m²	1.38 m²	1.60 m²	1.65 m²	1.80 m²	2.67 m²	2.73 m²	3 m²	3.46 m²	4.25 m²	6 m²	6.3 m²
Flange (ØT)	DN 100	DN 100	DN 100	DN 100	DN 100	DN 200	DN 200	DN 200	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400
(M)	320	336	336	387	387	387	477	488	717	716	755	753	1200	1380	1550
Max. Boiler Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Boiler Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Boiler Working Temperature	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Serpentine Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Serpentine Working Temperature	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C
Weight	107	112	140	175	195	220	295	355	540	585	630	855	1800	2150	2300

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



Heat indicator

Optional Resistance (Electric Heater)
Port

Cleaning Cover



Advantages

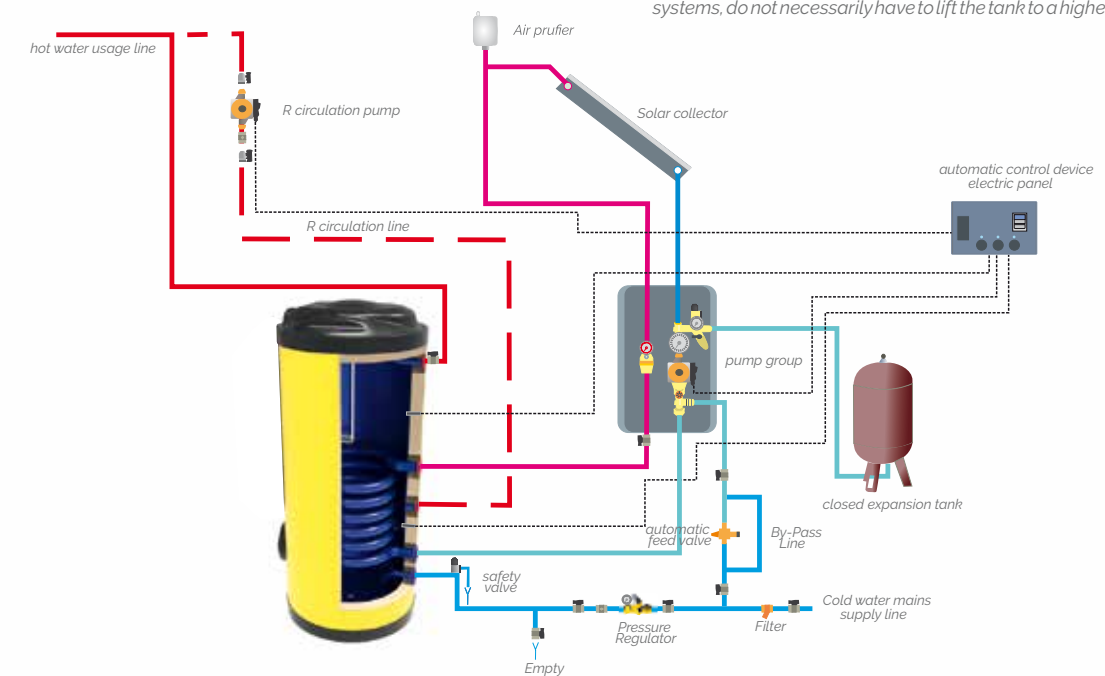
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process, the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

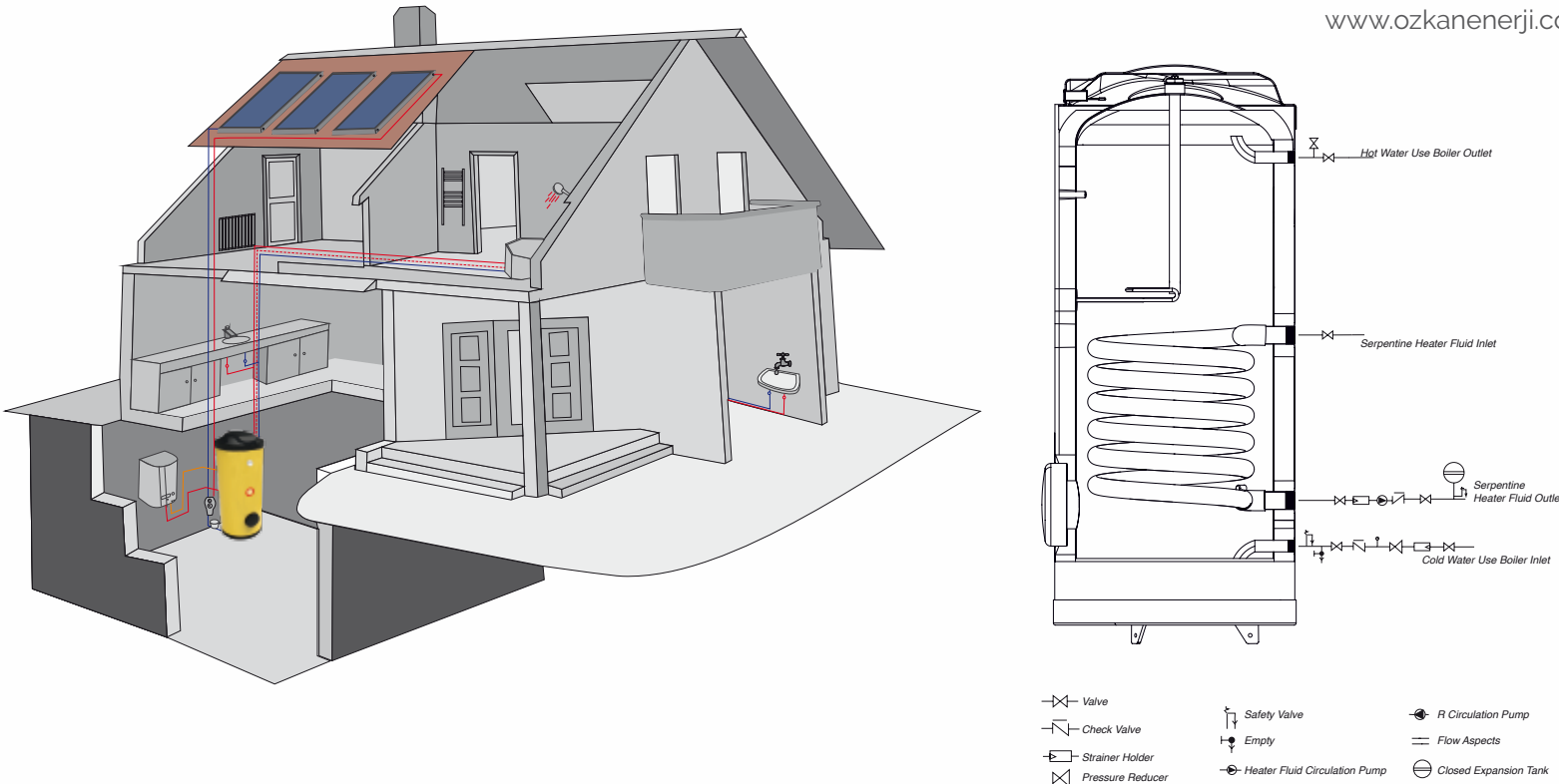
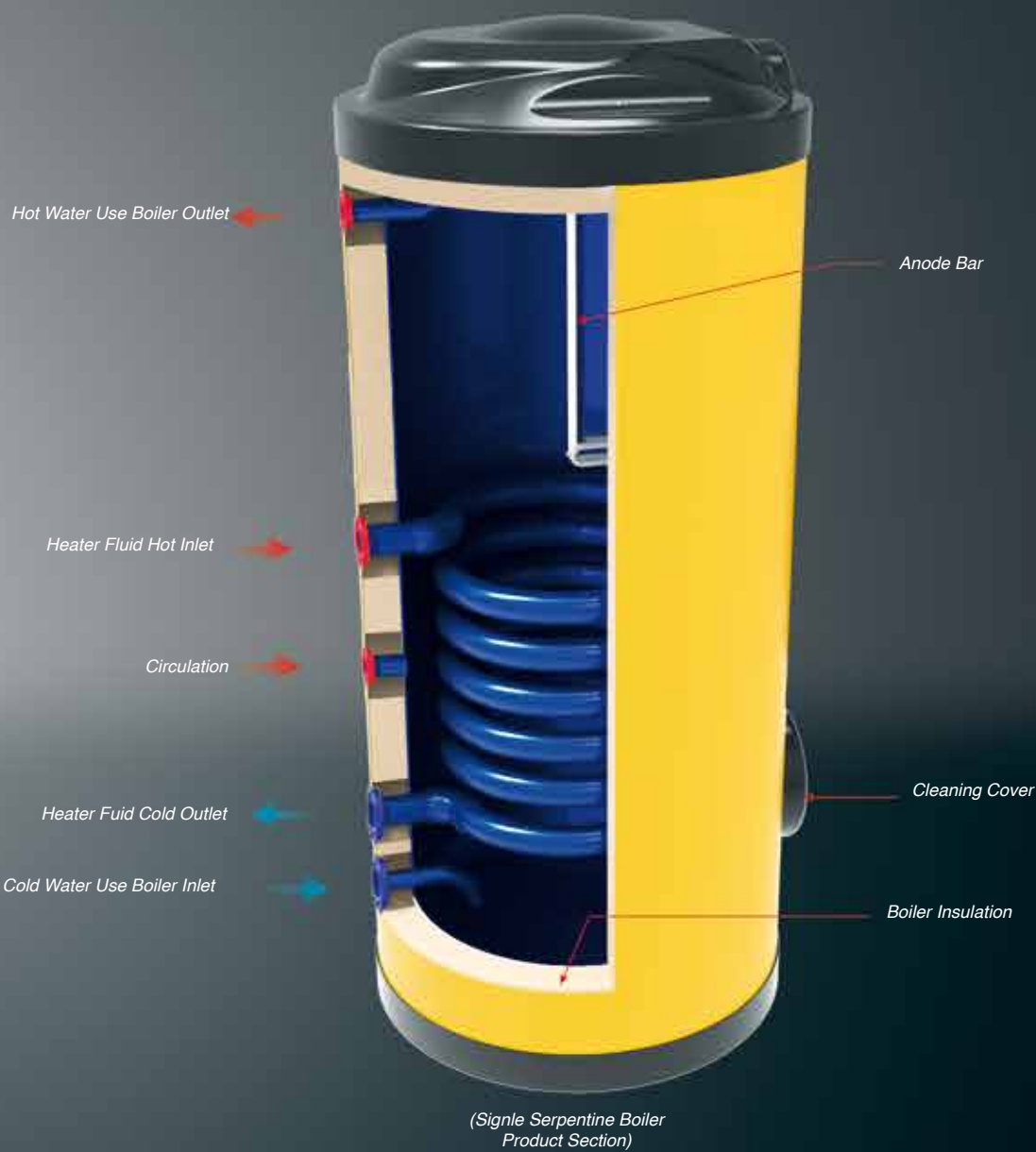
Working Principle

They are pressure vessels that heat and store water in apartments and all kinds of facilities with a central hot water system thanks to the specially designed serpentine for the production and storage of clean hot water.

A single serpentine boiler is a type of boiler which provides water heating and storage process with only one serpentine in it.

There is an electronic controller in the forced circulation that controls the system. Thanks to this device, the temperatures of the collector and the boiler are measured and the necessary temperature is transferred to the boiler by means of the circulation pump. Such systems, like natural circulation systems, do not necessarily have to lift the tank to a higher level than the collector.





100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

Type	OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
Capacity	100	160	200	300	400	500	600	800	1000	1500	2000	2500	3000	4000	5000	6000
Diameter (D)	480	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1160	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Heating Area 1 (Serpentine-WAT1 bottom)	0.59 m²	0.82 m²	0.99 m²	1.60 m²	1.82 m²	2.28 m²	2.50 m²	3.26 m²	3.53 m²	3.97 m²	4.95 m²	5.92 m²	7.39 m²	8.5 m²	11.74 m²	12.66 m²
Flange (ØT)	DN 100	DN 100	DN 100	DN 100	DN 100	DN 200	DN 200	DN 200	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400
(M)	320	320	336	336	387	387	477	488	716	716	755	753	1200	1380	1550	
Max. Boiler Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Boiler Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Boiler Working Temperature	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Serpentine Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Serpentine Working Temperature	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C
Weight	65	95	105	120	175	185	200	275	330	510	560	595	835	1475	1650	1800

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



Serpentine Boiler



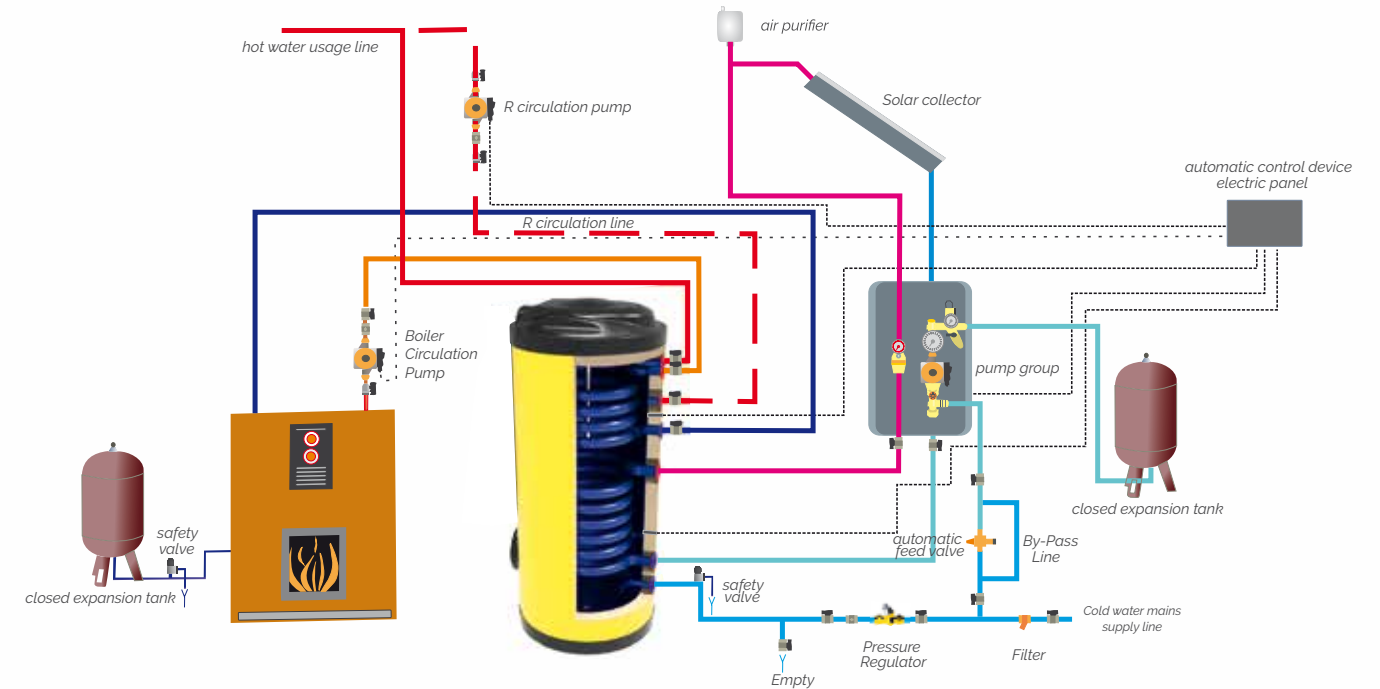
Advantages

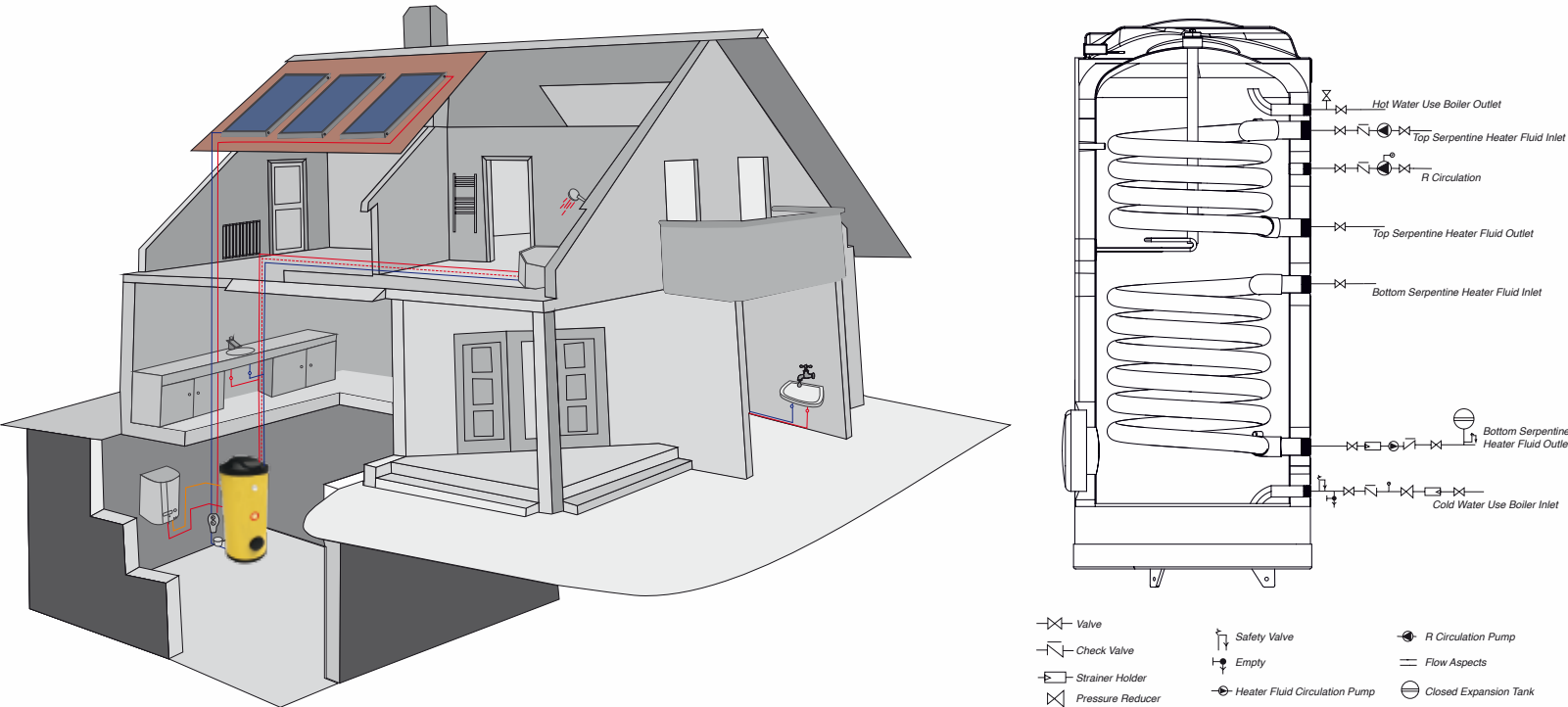
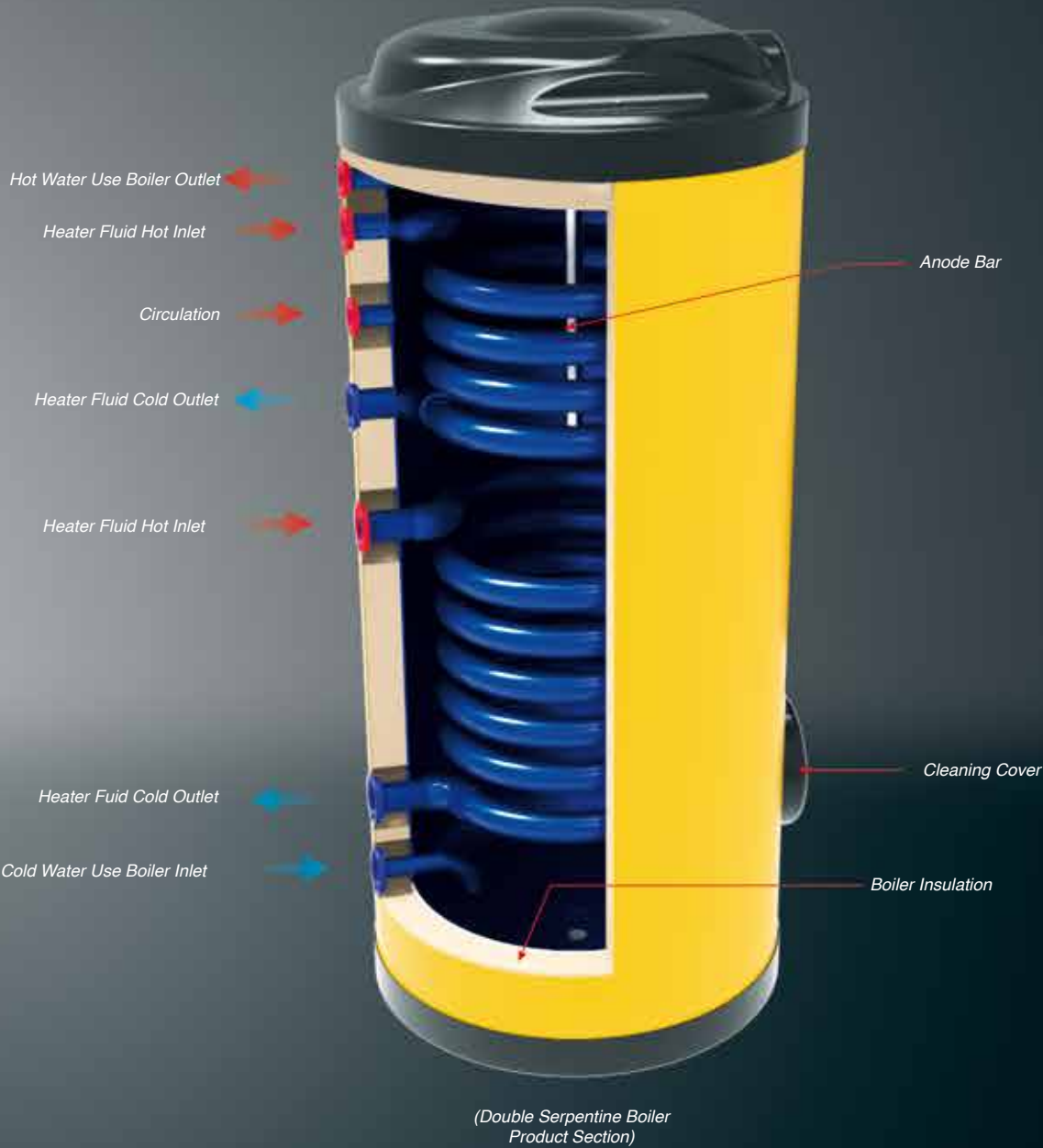
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process, the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

Working Principle

They are pressure vessels that heat and store water in apartments and all kinds of facilities with a central hot water system thanks to the specially designed serpentine for the production and storage of clean hot water.

The double serpentine boiler is a kind of boiler that performs the heating process by means of the double serpentine in the boiler (for example, Those working with 2 heat sources such as solar energy, natural gas, solid fuel heater) in order to make the instant heating more powerful.

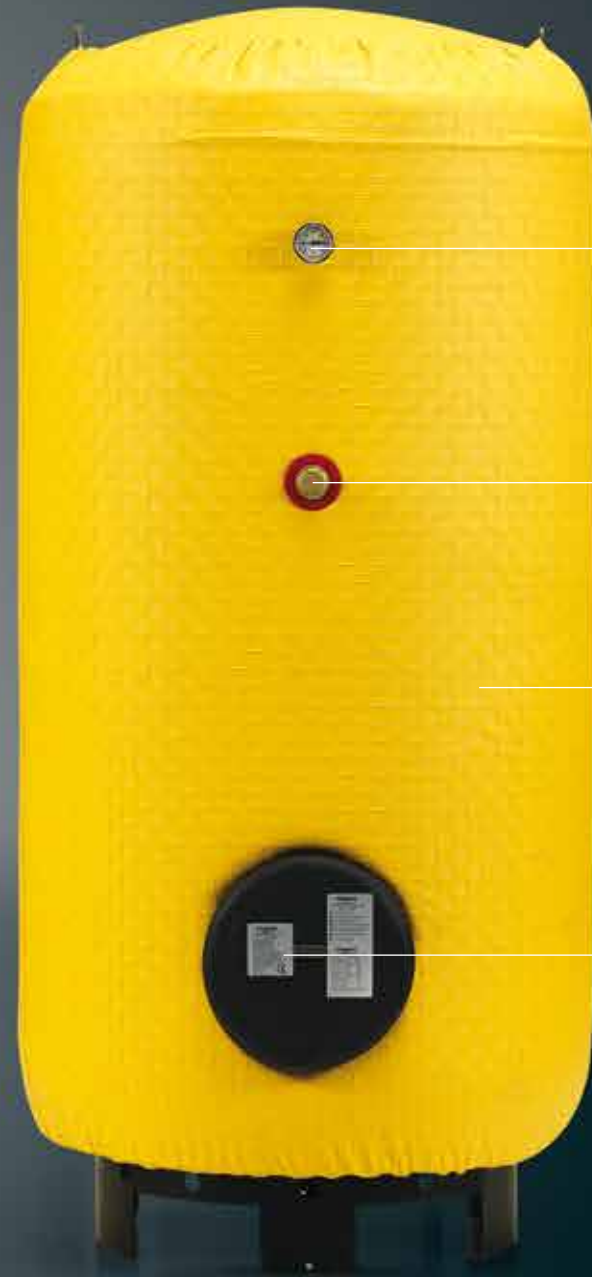




100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

Type	OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
Capacity	160	200	300	400	500	600	800	1000	1500	2000	2500	3000	4000	5000	6000
Diameter (D)	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Heating Area 1 (Serpentine-WAT1 bottom)	0.82 m²	0.99 m²	1.60 m²	1.82 m²	2.28 m²	2.50 m²	3.26 m²	3.53 m²	3.97 m²	4.95 m²	5.92 m²	7.39 m²	8.5 m²	11.74 m²	12.66 m²
Heating Area 2 (Serpentine-WAT2 top)	0.61 m²	0.80 m²	0.98 m²	1.15 m²	1.38 m²	1.60 m²	1.65 m²	1.80 m²	2.67 m²	2.73 m²	3 m²	3.46 m²	4.25 m²	6 m²	6.3 m²
Flange (ØT)	DN 100	DN 100	DN 100	DN 100	DN 100	DN 200	DN 200	DN 200	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400	DN 400
(M)	320	336	336	387	387	387	477	488	717	716	755	753	1200	1380	1550
Max. Boiler Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Boiler Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Boiler Working Temperature	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C	95 °C
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Serpentine Test pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Max. Serpentine Working Temperature	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C	145 °C
Weight	107	112	140	175	195	220	295	355	540	585	630	855	1800	2150	2300

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



Heat indicator

Optional Resistance (Electric Heater)
PortSponge Insulation
Winlex Leather Cover

Cleaning Cover



Advantages

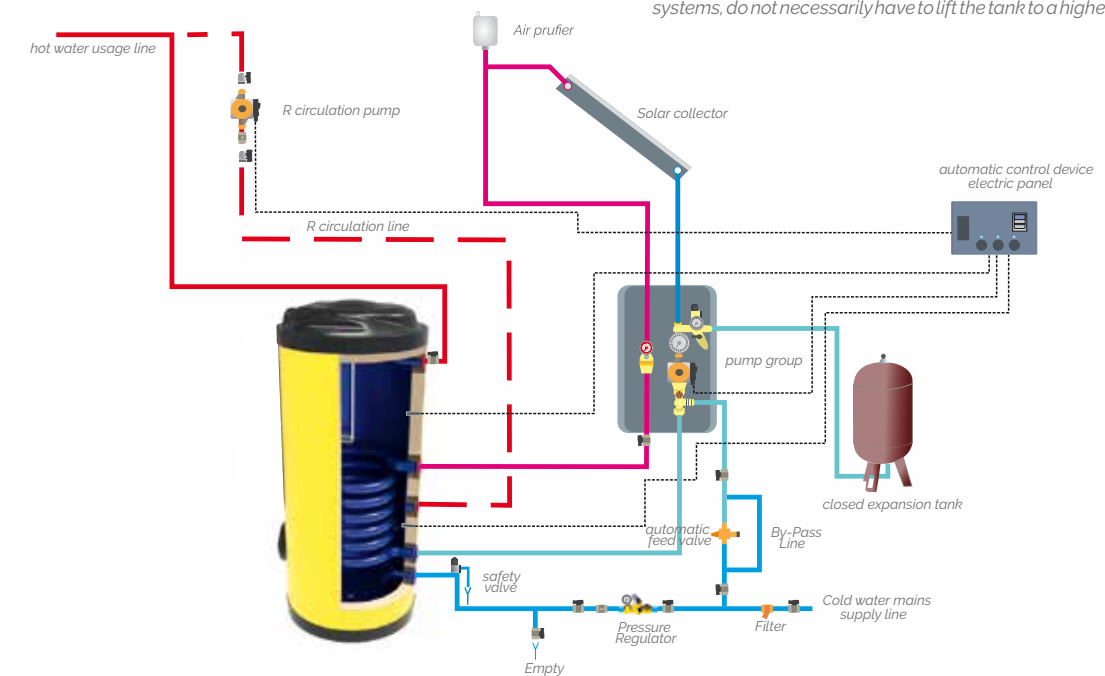
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process, the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

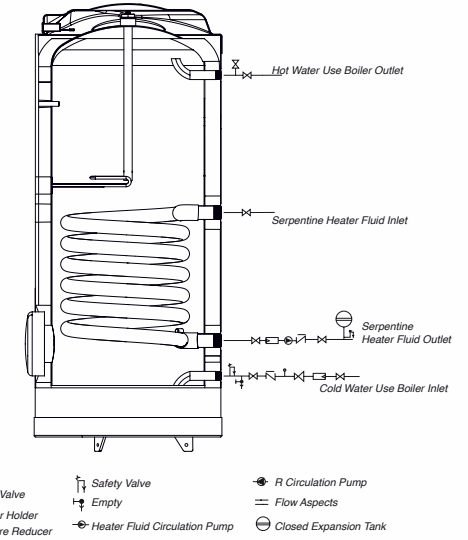
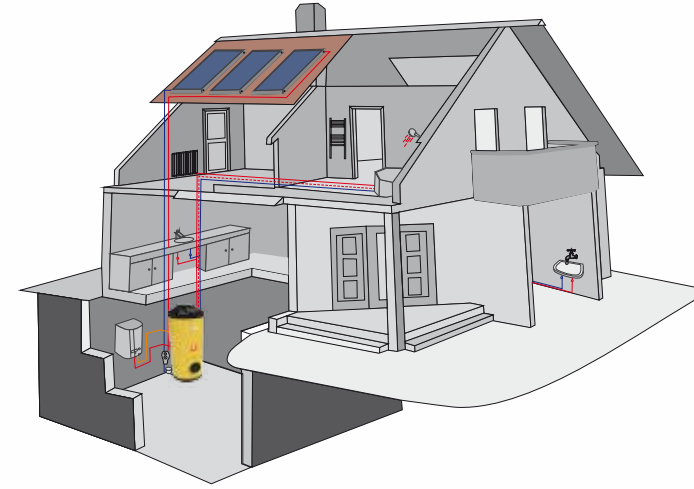
Working Principle

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There is an electronic controller in the forced circulation that controls the system. Thanks to this device, the temperatures of the collector and the boiler are measured and the necessary temperature is transferred to the boiler by means of the circulation pump. Such systems, like natural circulation systems, do not necessarily have to lift the tank to a higher level than the collector.





100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

KULLANIM SUYU GİRİŞİ 10- ÇIKIŞI 45°C KALORİFER İÇİN			OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
SÜREKLİ REJİMDE 90 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (100-80 °C)- 2.DEVRE (10-45 °C)	BOTTOM (ALT)	kW	28,18	39	48,55	79,39	89,88	112,52	123,35	165,74	178,59	201,59	251,65	301,04	375,454	408,94	564,21	608,68
	It/h	693,48	959,73	1194,73	1953,5	2211,8	2768,9	3035,28	4078,39	4394,74	4960,65	6192,5	7407	9238,81	1000,63	13883,23	14997,92	
SÜREKLİ REJİMDE 80 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (90-70 °C)- 2.DEVRE (10-45 °C)	BOTTOM (ALT)	kW	22,88	31,66	39,42	64,46	72,98	91,36	100,15	134,57	145,55	163,68	204,33	244,43	304,85	332,04	458,11	494,22
	It/h	563,07	779,25	970,06	1586,2	1795,9	2248,2	2464,5	3311,46	3581,78	4027,81	5028,01	6014,69	7501,47	8170,68	11272,92	12161,36	
SÜREKLİ REJİMDE 70 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (80-60 °C)- 2.DEVRE (10-45 °C)	BOTTOM (ALT)	kW	17,27	23,91	29,76	48,67	55,1	68,98	75,62	101,61	123,59	123,59	154,28	184,56	230,186	250,72	345,91	373,17
	It/h	425,16	588,39	732,47	1197,7	1356,1	1697,6	1860,88	2500,04	3041,31	3041,31	3796,53	4541,55	5664,18	6169,49	8591,11	9182,75	
KULLANIM SUYU GİRİŞİ 10- ÇIKIŞI 60°C KALORİFER İÇİN			OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
SÜREKLİ REJİMDE 90 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (100-80 °C)- 2.DEVRE (10-60 °C)	BOTTOM (ALT)	kW	22,52	31,17	38,8	63,45	71,84	89,93	98,57	132,46	143,28	161,124	201,13	240,6	300,08	326,85	450,94	486,48
	It/h	387,98	536,94	668,42	1093	1237,5	1549,1	1698,14	2281,74	2468	2775,34	3464,52	4144,39	5168,84	5629,96	7767,54	8379,71	
SÜREKLİ REJİMDE 80 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (90-70 °C)- 2.DEVRE (10-60 °C)	BOTTOM (ALT)	kW	16,29	22,54	28,06	45,89	51,96	65,04	71,3	95,87	103,62	116,53	145,47	174,01	217,032	236,39	326,14	351,85
	It/h	280,6	388,34	483,43	790,5	895	1120,39	1228,18	1657,26	1784,98	2007,26	2505,71	2997,42	3738,36	4071,86	5617,84	6060,61	
SÜREKLİ REJİMDE 70 °C SERPANTİN KAZANA BAĞLANACAK 1.DEVRE (80-60 °C)- 2.DEVRE (10-60 °C)	BOTTOM (ALT)	kW	9,67	13,39	16,67	27,26	30,87	38,65	42,37	56,92	61,57	69,24	86,43	103,397	128,95	140,46	193,78	206,06
	It/h	166,73	230,74	287,24	469,68	531,79	665,71	729,76	980,55	1060,59	1192,67	1488,83	1781	2221,24	2419,4	3338	3601,08	
KULLANIM SUYU GİRİŞİ 10- ÇIKIŞI 45°C GÜNEŞ KOLLEKTÖRÜ İÇİN			OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
GÜNEŞ ENERJİSİ SİRKÜLASYON 1.DEVRE (70/60 °C) - 2.DEVRE (10-45 °C)	BOTTOM (ALT)	kW	15,71	21,74	27,06	44,25	50,11	62,72	68,76	92,39	99,23	112,37	140,28	167,81	209,29	227,96	314,52	339,3
	It/h	386,57	535	666	1089	1233	1543,49	1692	2273,47	2459,06	2765,29	3451,97	4129,37	5150,12	5609,57	7739,4	8349,36	
KULLANIM SUYU GİRİŞİ 10- ÇIKIŞI 60°C GÜNEŞ KOLLEKTÖRÜ İÇİN			OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
GÜNEŞ ENERJİSİ SİRKÜLASYON 1.DEVRE (70/60 °C) - 2.DEVRE (10-60 °C)	BOTTOM (ALT)	kW	8,27	11,45	14,25	23,31	26,39	33,04	36,22	48,67	52,64	59,2	73,902	88,404	110,25	120	168,73	182,03
	It/h	142,55	197,28	245,59	402	454,68	569,18	623,94	838,37	906,81	1019,73	1272,96	1522,75	1899,16	2058,69	2906,46	3131,52	
BASINÇ DEĞERLERİ			OG-01-101	OG-01-161	OG-01-201	OG-01-301	OG-01-401	OG-01-501	OG-01-601	OG-01-801	OG-01-1001	OG-01-1501	OG-01-2001	OG-01-2501	OG-01-3001	OG-01-4001	OG-01-5001	OG-01-6001
Sürekli rejimde ısıtıcı su debisi	BOTTOM (ALT)	m ³ /h	0.7	0.8	1.25	1.8	2.3	2.8	3	4.1	7	5	6.2	7.4	9.2	12.9	17.2	18.5
Serpantin Direnci (Basınç kaybı)	BOTTOM (ALT)	mmSS	102	152	80	1403	293	767	757	1751	2199	2921	4736	7632	13882	19464	26455	28595
Serpantin Direnci (Basınç kaybı)	BOTTOM (ALT)	Pa	1019	1522	803	14034	2933	7673	7573	17507	21989	29211	47350	76315	138822	194644	264554	285954

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



hygiene



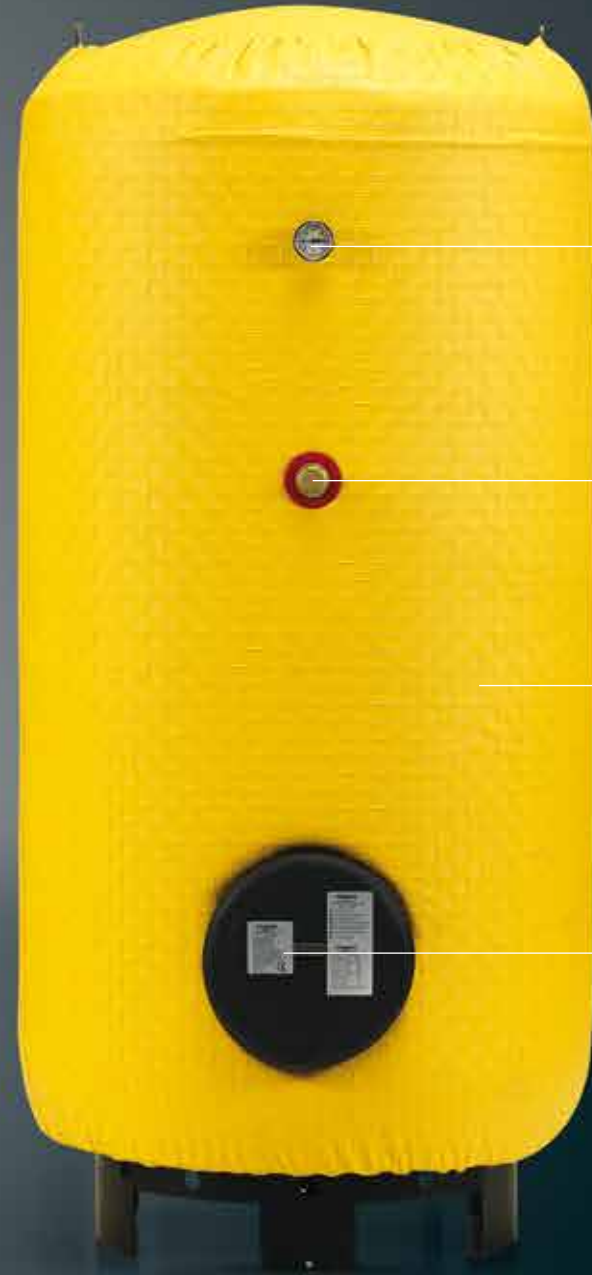
polyurethane insulation



enamel coating



Systems that produce Domestic Hot Water (DHW)



Heat indicator

Optional Resistance (Electric Heater) Port

Sponge Insulation
Winlex Leather Cover

Cleaning Cover



Serpentine Boiler



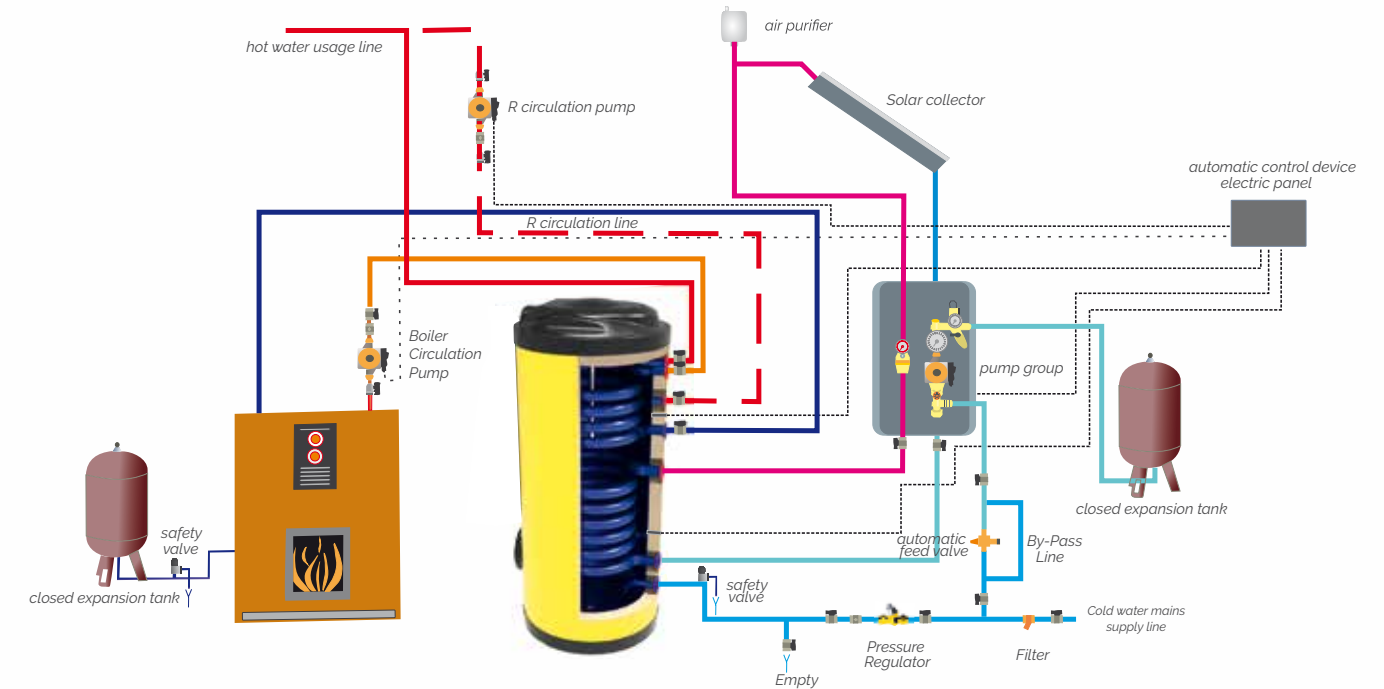
Advantages

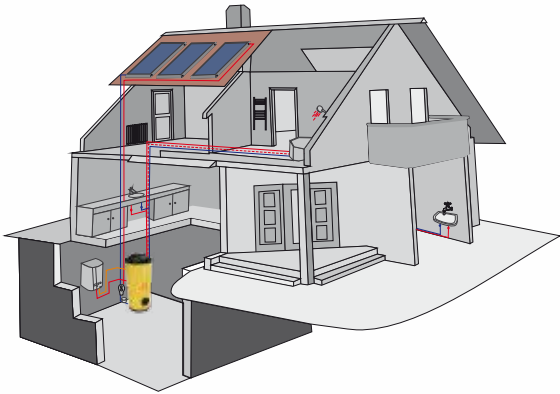
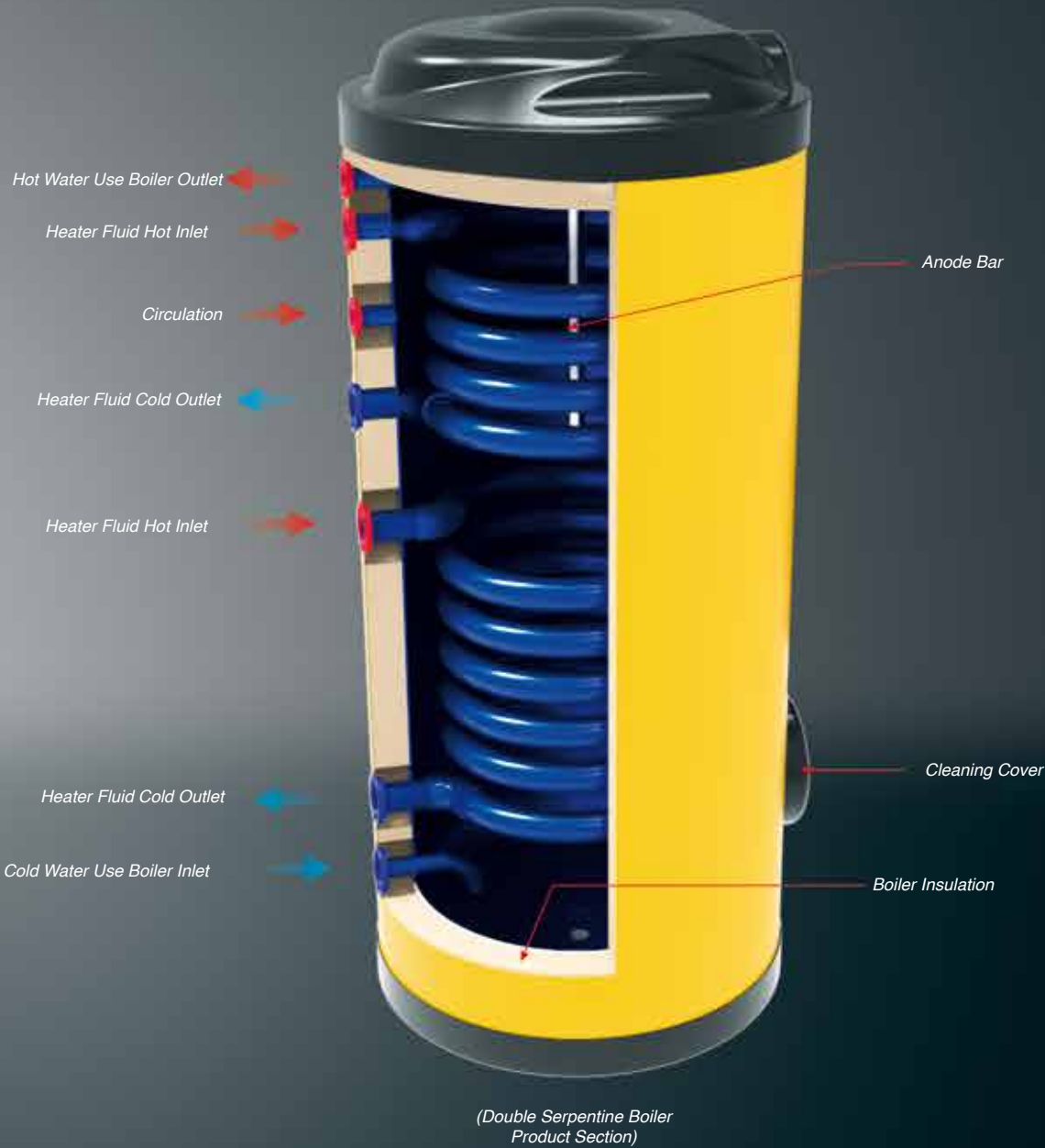
The inner surfaces of the boiler tanks are covered with a titanium-based enamel (Glassy Surface). By applying this process, the resistance against corrosion is increased in accordance with the usage purposes of boilers. As the surface roughness of the tank is reduced by this process, the accumulation of material and bacteria on the surface during its use is reduced to a large extent and system hygiene is ensured. Fast boilers prevent the formation of quenching zones thanks to their special serpentine designs. Titanium enamel coating prevents bacterial growth and corrosion.

Working Principle

They are pressure vessels that heat and store water in apartments and all kinds of facilities with a central hot water system thanks to the specially designed serpentine for the production and storage of clean hot water.

The double serpentine boiler is a kind of boiler that performs the heating process by means of the double serpentine in the boiler (for example, Those working with 2 heat sources such as solar energy, natural gas, solid fuel heater) in order to make the instant heating more powerful.





100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath
800-6000 Lt. Above the soft sponge - Winlex insulation

USAGE WATER INLET 10 - OUTLET 45 °C RADIATOR			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
For 90 °C heating circuit fluid temperature Primary circuit: 100-80 °C - Secondary circuit: 10-45 °C	BOTTOM	kW	29,18	40,68	48,55	57,08	68,03	79,06	83,88	91,66	135,63	138,68	152,88	175,88	207,86	293,23	360,04
		lt/h	718,25	1000,1	1194,73	1404,62	1674,24	1945,08	2064,16	2255,6	3337,62	3412,53	3762,11	4328,09	5144,87	7215,62	8859,68
For80 °C heating circuit fluid temperature Primary circuit: 90-70 °C - Secondary circuit: 10-45 °C	BOTTOM	kW	23,7	33,02	39,42	46,34	55,24	64,19	68,11	74,42	110,131	112,6	124,37	142,81	168,77	238,09	292,34
		lt/h	583,18	812,76	970,07	1140,48	1359,4	1479,64	1676	1831,44	2709,39	2770,81	3054,65	3514,205	4153,03	5858,74	7193,64
For70 °C heating circuit fluid temperature Primary circuit: 80-60 °C - Secondary circuit: 10-45 °C	BOTTOM	kW	17,89	24,94	29,77	35	41,71	48,47	51,42	56,198	83,15	85,02	93,73	107,83	127,43	179,77	220,74
		lt/h	440,35	613,7	732,48	861,15	1026,45	1192,74	1265,51	1382,87	2046,25	2092,17	2306,49	2653,44	3135,85	4423,79	5431,75
USAGE WATER INLET 10 - OUTLET 60 °C RADIATOR			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
For 90 °C heating circuit fluid temperature Primary circuit: 100-80 °C - Secondary circuit: 10-60 °C	BOTTOM	kW	23,32	32,51	38,8	45,62	54,38	63,19	67,04	73,26	108,4	110,84	122,94	140,5	166,13	234,36	287,76
		lt/h	401,84	560,02	668,42	785,85	936,69	1088,44	1154,84	1261,94	1867,3	1909,28	2104,79	2421,44	2861,62	4036,93	4956,73
For80 °C heating circuit fluid temperature Primary circuit: 90-70 °C - Secondary circuit: 10-60 °C	BOTTOM	kW	16,87	23,51	28,07	33	39,33	45,7	48,49	52,98	78,405	80,16	88,37	101,67	120,16	169,5	208,12
		lt/h	290,63	405,04	483,43	568,36	677,46	787,21	835,23	912,69	1350,52	1380,13	1522,28	1751,3	2069,66	2919,7	3584,95
For70 °C heating circuit fluid temperature Primary circuit: 80-60 °C - Secondary circuit: 10-60 °C	BOTTOM	kW	10,03	13,59	16,68	19,6	23,37	27,15	28,81	31,36	46,41	47,63	52,51	60,41	71,39	100,7	123,66
		lt/h	172,68	234,13	287,24	337,7	402,53	467,24	496,28	540,27	799,43	820,46	904,5	1040,58	1229,74	1734,82	2130,09
USAGE WATER INLET 10 - OUTLET 45 °C SOLAR COLLECTOR			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
For 90 °C heating circuit fluid temperature Primary circuit: 100-80 °C - Secondary circuit: 10-45 °C	BOTTOM	kW	21,74	27,06	44,25	50,11	62,72	68,76	92,39	99,23	112,37	140,28	167,81	209,29	232,15	320,3	345,54
		lt/h	535	666	1089	1233	1543,49	1692	2273,47	2459,06	2765,29	3451,97	4129,37	5150,12	5712,69	7881,69	8502,85
USAGE WATER INLET 10 - OUTLET 60 °C SOLAR COLLECTOR			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
For 90 °C heating circuit fluid temperature Primary circuit: 100-80 °C - Secondary circuit: 10-60 °C	BOTTOM	kW	11,45	14,25	23,31	26,39	33,04	36,22	48,67	52,64	59,2	73,902	88,404	110,25	122,3	168,73	182,03
		lt/h	197,28	245,59	402	454,68	569,18	623,94	838,37	906,81	1019,73	1272,96	1522,75	1899,16	2106,62	2906,44	3135,52
PRESSURE VALUES			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
Continuous heating water flow rate	BOTTOM	m ³ /h	0,6	0.7	1	1,3	1,6	1,85	2.3	2.5	2.8	3.5	4.1	5.2	6,42	8,22	9,54
Serpentine Resistance (Pressure Loss)	BOTTOM	mmSS	23	25	135	183	215	354	544	676	854	1556	2370	4312	5412	6721	7358
Serpentine Resistance (Pressure Loss)	BOTTOM	Pa	230	250	1152	1830	2150	3540	5440	6759	8544	15583	23696	43119	54121	67210	73582
PRESSURE VALUES			OG-02-162	OG-02-202	OG-02-302	OG-02-402	OG-02-502	OG-02-602	OG-02-802	OG-02-1002	OG-02-1502	OG-02-2002	OG-02-2502	OG-02-3002	OG-02-4002	OG-02-5002	OG-02-6002
Continuous heating water flow rate	TOP	m ³ /h	0,9	1.01	1,20	1,6	1,73	1,7	2.15	2.35	3.48	3.55	3.92	4.51	5,32	6,4	7,2
Serpentine Resistance (Pressure Loss)	TOP	mmSS	34	38	65	115	153	163	227	291	791	845	1000	1427	1625	1830	2115
Serpentine Resistance (Pressure Loss)	TOP	Pa	342	381	650	1115	1532	1630	2270	2909	7906	8450	9995	14267	16250	18325	21150

Note: In order to transfer the heat quantities corresponding to the temperatures specified for the boilers in the different capacities above to the heated water, the temperature of the starting heating fluid indicated at the bottom of each table must reach the boiler. In the case of not reaching the specified amount, the heat energy can not be transferred in the committed amount in the above tables.



hygiene



polyurethane insulation



enamel coating



Systems that produce Domestic Hot Water (DHW)



four seasons

Accumulation tank

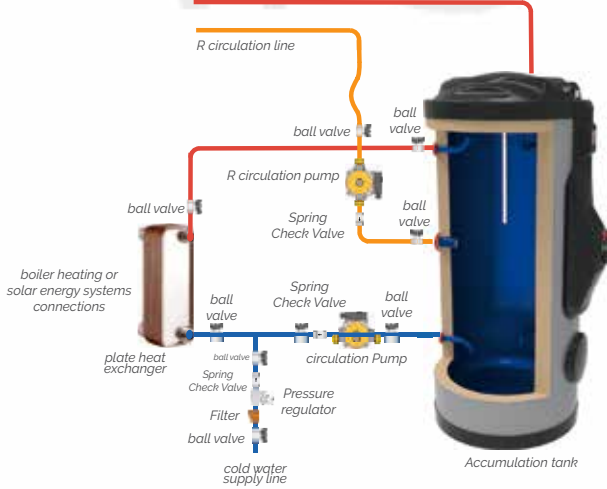


Advantages

Accumulation tanks are the installation equipment that stores the energy and the water that it gets from the heat sources with the highest efficiency. By prolonging the life of heating resources, it saves money and reduces the cost of heating. In areas where boilers are inadequate, accumulation tanks are used with exchangers and offer very efficient effects.

Working Principle

Accumulation tanks are systems that store water by heating it in the tank with heats coming from various sources such as heat pumps, solid fuel boilers, solar energy, and plate heat exchanger.



(100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath)
(800-6000 Lt. Above the soft sponge - Winlex insulation)

Type	OG-03-100	OG-03-160	OG-03-200	OG-03-300	OG-03-400	OG-03-500	OG-03-600	OG-03-800	OG-03-1000	OG-03-1500	OG-03-2000	OG-03-2500	OG-03-3000	OG-03-4000	OG-03-5000	OG-03-6000
Capacity	100	160	200	300	400	500	600	800	1000	1500	2000	2500	2500	4000	5000	6000
Diameter (D)	480	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1160	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Anode (H)	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Flange (ØT) (M)	DN 100 320	DN 100 320	DN 100 336	DN 100 336	DN 100 387	DN 100 387	DN 200 387	DN 200 477	DN 200 488	DN 400 717	DN 400 716	DN 400 755	DN 400 753	DN 400 1200	DN 400 1380	DN 400 1550
Max. BoileOperation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. BoileTest pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Weight	57	74	81	99	135	150	170	230	260	335	480	555	650	785	900	1050



Accumulation tank

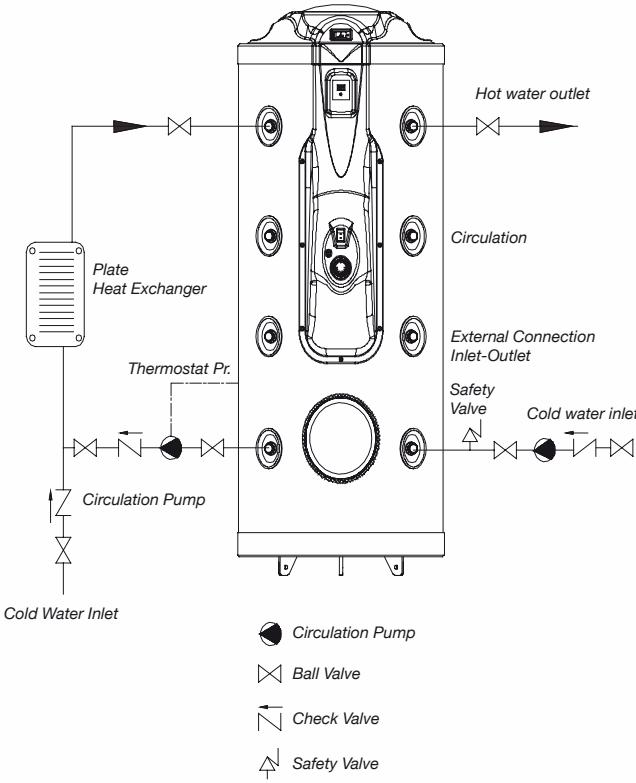


Advantages

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Working Principle

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(100-600 Lt. PU Polyurethane insulation - Painted Sheet Sheath)
(800-6000 Lt. Above the soft sponge - Winlex insulation)

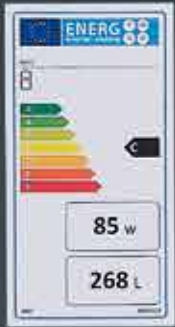
Type	OG-03-100	OG-03-160	OG-03-200	OG-03-300	OG-03-400	OG-03-500	OG-03-600	OG-03-800	OG-03-1000	OG-03-1500	OG-03-2000	OG-03-2500	OG-03-3000	OG-03-4000	OG-03-5000	OG-03-6000
Capacity	100	160	200	300	400	500	600	800	1000	1500	2000	2500	2500	4000	5000	6000
Diameter (D)	480	480	580	580	750	750	750	940	1000	1200	1350	1470	1470	1660	1660	1760
Width (E)	600	600	700	700	870	870	870	1100	1150	1350	1500	1620	1620	1820	1820	1920
Height (H)	1160	1610	1425	1900	1525	1825	2025	2010	2015	1988,5	2040	2145	2660	3000	3500	3750
Anode (H)	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Flange (ØT) (M)	DN 100 320	DN 100 320	DN 100 336	DN 100 336	DN 100 387	DN 100 387	DN 200 387	DN 200 477	DN 200 488	DN 400 717	DN 400 716	DN 400 755	DN 400 753	DN 400 1200	DN 400 1380	DN 400 1550
Max. BoileOperation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. BoileTest pressure	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar	18 bar
Serpentine Operation pressure	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Weight	57	74	81	99	135	150	170	230	260	335	480	555	650	785	900	1050



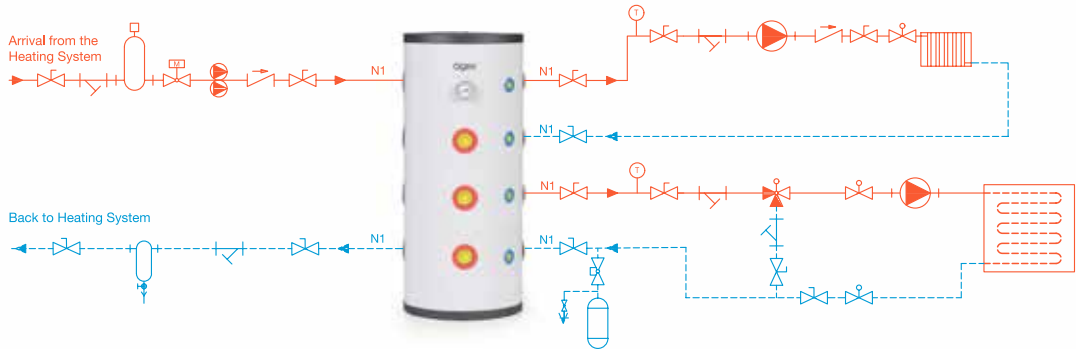
polyurethane insulation



Space Heating Systems



four seasons



50-600 Lt. Polyurethane (PU) insulation - Painted Metal Sheet Sheath
800-6000 Lt. Soft foam insulation - Winlex Sheath

Type	OG-04-054	OG-04-084	OG-04-104	OG-04-164	OG-04-204	OG-04-304	OG-04-404	OG-04-504	OG-04-604	OG-04-804	OG-04-1004	OG-04-1504
Capacity	50	80	100	160	200	300	400	500	600	800	1000	1500
Diameter (D)	400	400	400	400	480	480	646	646	646	790	850	1050
Width (E)	440	440	440	440	570	570	750	750	750	940	1000	1200
Height (H)	550	880	1100	1760	1425	1900	1525	1625	2025	2010	2015	1988
PU Insulation Thickness (mm)	20	20	20	20	45	45	50	50	50	Optional	Optional	Optional
Type of Material	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37
Outer Coating	Static Paint On Galvanized Sheet									Vinlex Cover on Soft Foam		
Cold-Hot Water Connection Dimensions	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Resistance Connection Dimensions	1 1/4"	1 1/4"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"
Max. Boiler Operation pressure	6 bar	6 bar	8 bar	8 bar	8 bar	8 bar	10 bar	10 bar	10 bar	10 bar	10 bar	10 bar
Max. Boiler Test pressure	8 bar	8 bar	10 bar	10 bar	10 bar	10 bar	13 bar	13 bar	13 bar	13 bar	13 bar	13 bar
Energy Efficiency Class	A/B/C	A/B/C	A/B/C	A/B/C	A/B/C	B/C	B/C	C	C	C	C	C

- hygiene
- polyurethane insulation
- enamel coating
- ErP
- Systems that produce Domestic Hot Water (DHW)



four seasons



200-600 Lt. Polyurethane (PU) insulation - Painted Metal Sheet Sheath
800-6000 Lt. Soft foam insulation - Winlex Sheath

Type	OG-05-205	OG-05-305	OG-05-405	OG-05-505
Tank Capacity (Lt.)	200	300	400	500
Type of Material	ST-37	ST-37	ST-37	ST-37
Max. Tank Pressure (Bar)	10	10	10	10
PU Insulation Thickness (mm)	50	50	55	55
Max. Operating Temperature (°C)	90	90	90	90
Height (H) mm.	1470	1710	1525	1825
Diameter (D) mm.	570	570	750	750
Serpentine Surface Area (m2)	2.1	3.2	3.8	4.2
Serpentine Pipe Diameter (inch)	1	1	5/4	5/4
Circulation Pipe Diameter (inch)	3/4	3/4	5/4	5/4
Hot Water Pipe Diameter (inch)	3/4	1	1	1
Cold Water Pipe Diameter (inch)	3/4	1	1	1
Resistance Inlet (inch)	6/4	6/4	6/4	6/4
Sensor Inlet (inch)	1/2	1/2	1/2	1/2
Energy Efficiency Class	A/B/C	B/C	C	C



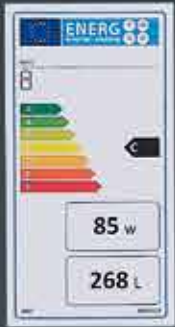
polyurethane insulation



Systems that produce Domestic Hot Water (DHW)

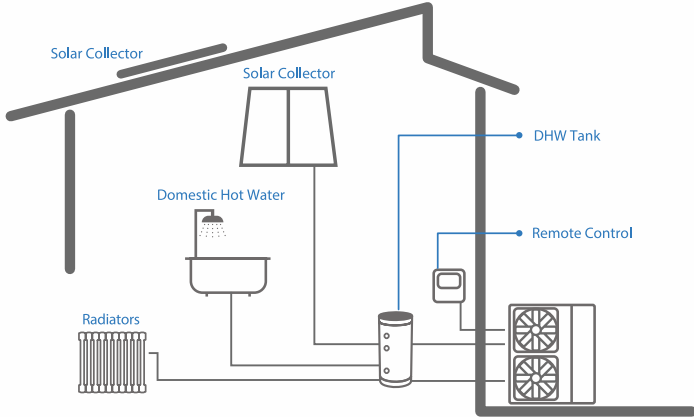


Space Heating Systems



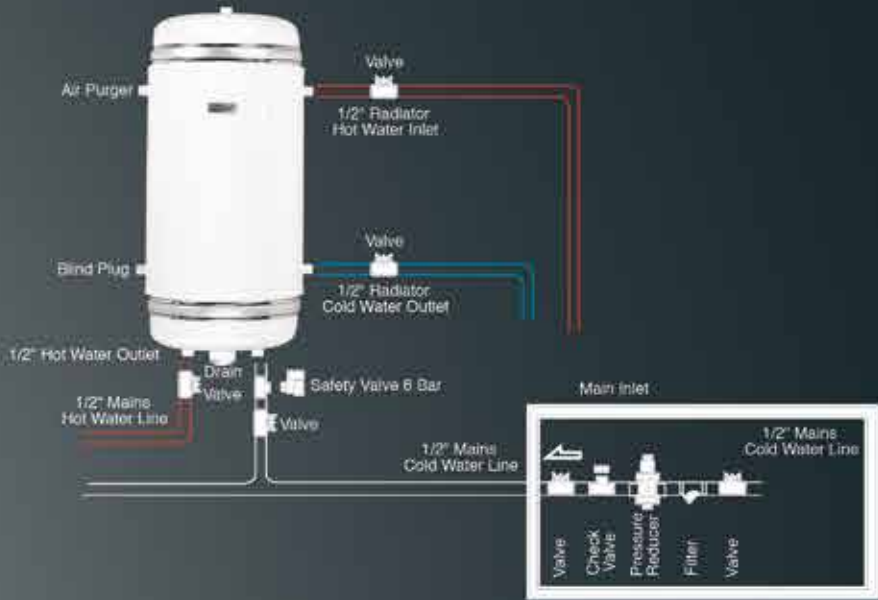
four seasons

BUFFER TANK&HEAT PUMP



200-600 Lt. Polyurethane (PU) insulation - Painted Metal Sheet Sheath
800-6000 Lt. Soft foam insulation - Winlex Sheath

Type	OG-07-207	OG-07-307	OG-07-407	OG-07-507	OG-07-607	OG-07-807	OG-07-1007
Tank Capacity (Lt.)	200	300	400	500	600	800	1000
Type of Material	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37	ST-37
Max. Tank Pressure (Bar)	8	8	10	10	10	10	10
PU Insulation Thickness (mm)	50	50	55	55	55	Optional	Optional
Max. Operating Temperature (°C)	90	90	90	90	90	90	90
Height (H) mm.	1470	1710	1525	1825	2025	2010	2015
Diameter (D) mm.	480	480	646	646	646	790	850
Serpentine Surface Area (m2)	2,1	3,2	3,8	4,2	Optional	Optional	Optional
Serpentine Pipe Diameter (inch)	1	1	5/4	5/4	5/4	5/4	5/4
Circulation Pipe Diameter (inch)	3/4	3/4	5/4	5/4	5/4	5/4	5/4
Hot Water Pipe Diameter (inch)	1	1	1	1	1	1	1
Cold Water Pipe Diameter (inch)	1	1	1	1	1	1	1
Resistance Inlet (inch)	6/4	6/4	6/4	6/4	6/4	6/4	6/4
Sensor Inlet (inch)	1/2	1/2	1/2	1/2	1/2	1/2	1/2
Energy Efficiency Class	A/B/C	B/C	C	C	C	C	C
Inox 316L (Lt.)		16 Lt.		26,5 Lt	30 Lt	33 Lt	45 Lt
Inox 316L (m2)		3,2		4,5	5,2	5,8	7,6



Hot Water Boilers are used for water and space heating in buildings and apartments with central heating system.

The radiator in the place to be applied is dismantled and replaced with a bathroom boiler. The hot and cold water pipes of the flat are connected to the boiler.

With the burning of the heating boiler, both the ambient temperature and the hot water need of your flat are met.

BOILER PROPERTIES

- The main body for the room heating is not insulated, it is optionally insulated.
- The outer covering is specially painted with electrostatic paint for moist environment.
- Entry to the heating installation is provided for installation from both sides.



Nominal Volume	Main Body Thickness (mm)	Hull Thickness (mm)	Sheath Thickness (mm)	Facalities for heating max. working	Network for water Facali ies max. working
65 Lt.	2.5 mm	1.5 mm	1 mm	4 Bar	6 Bar



Hot Water Boilers are used for water and space heating in buildings and apartments with central heating system.

The radiator in the place to be applied is dismantled and replaced with a bathroom boiler. The hot and cold water pipes of the flat are connected to the boiler.

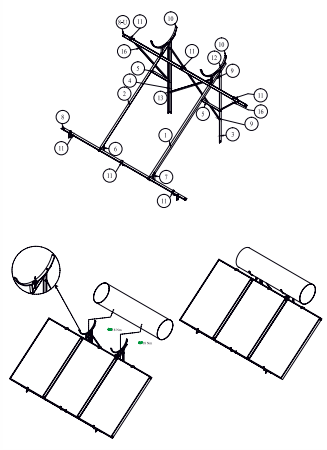
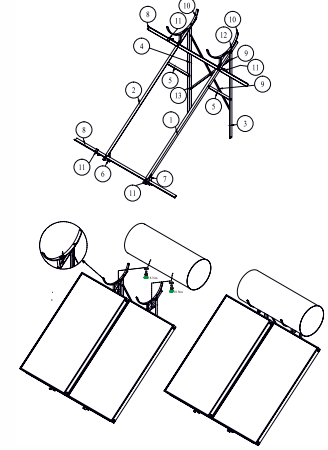
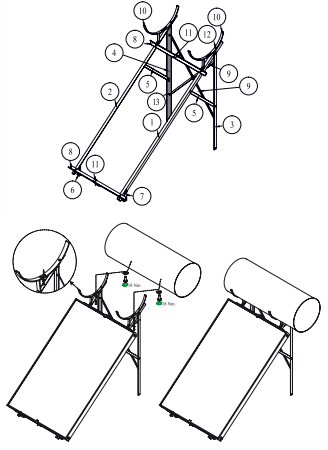
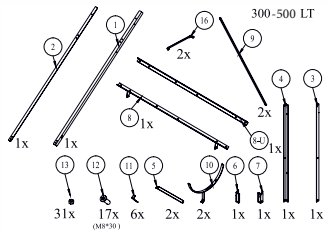
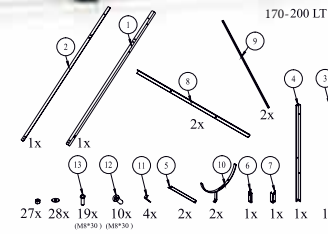
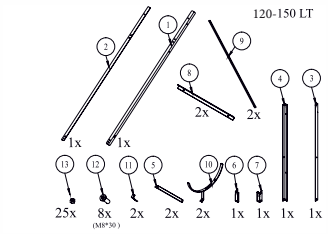
With the burning of the heating boiler, both the ambient temperature and the hot water need of your flat are met.

BOILER PROPERTIES

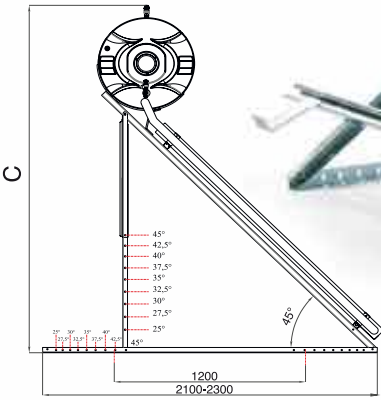
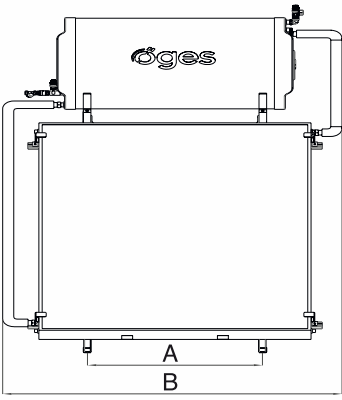
- The main body for the room heating is not insulated, it is optionally insulated.
- The outer covering is specially painted with electrostatic paint for moist environment.
- Entry to the heating installation is provided for installation from both sides.
- Heat Indicator
- Operating Voltage: 230 V AC
- Operating Power: 2000 W
- Protection: 16 AC Type
- AUTOMATIC INSURANCE



Nominal Volume	Main Body Thickness (mm)	Hull Thickness (mm)	Sheath Thickness (mm)	Facalities for heating max. working	Network for water Facal ies max. working
65 Lt.	2.5 mm	1.5 mm	1 mm	4 Bar	6 Bar



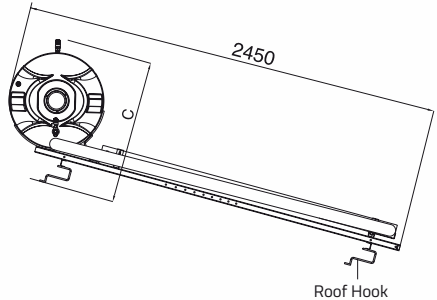
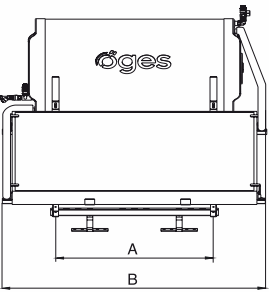
Straight Roof Mounting Stand



System Size	150 Lt	200 Lt	300 Lt
A	800 mm	1000 mm	1000 mm
B	1545 mm	1545 mm	2700 mm

C	150 Lt.	200 Lt.	300 Lt.
45°	2295 mm	2295 mm	2295 mm
42.5°	2230 mm	2230 mm	2230 mm
40°	2165 mm	2165 mm	2165 mm
37.5°	2120 mm	2120 mm	2120 mm
35°	2030 mm	2030 mm	2030 mm
32.5°	1970 mm	1970 mm	1970 mm
30°	1860 mm	1860 mm	1860 mm
27.5°	1775 mm	1775 mm	1775 mm
25°	1705 mm	1705 mm	1705 mm

Roof Mounting Stand



System Size	150 Lt	200 Lt	300 Lt
A	800 mm	1000 mm	1000 mm
B	1545 mm	1545 mm	2700 mm
C	900 mm	900 mm	900 mm
Roof Hook	4 Piece	4 Piece	4 Piece



Serpentine boiler resistance

Resistance is the generic name given to the resistance wires that convert electrical energy into heat energy. Resistance is a resistant product against high heat. The resistances include nickel, iron, chromium and aluminum alloys. It provides 2-2,5-5-7,5 Kw heating.



With or without pressure solar energy tank resistance

Copper resistance is the generic name given to the resistance wires that convert electrical energy into heat energy. Resistance is a resistant product against high heat. The resistances include nickel, iron, chromium and aluminum alloys. It provides 2-2,5 Kw heating.



Bathroom boiler resistance

Copper resistance is the generic name given to the resistance wires that convert electrical energy into heat energy. Resistance is a resistant product against high heat. The resistances include nickel, iron, chromium and aluminum alloys. It provides heating at 2-2,5 Kw power with 1-1/4" screw head.



Magnesium Anode

Magnesium anodes are used as galvanic anodes to provide cathodic protection in boilers and pressure vessels. Thanks to the cathodic protection, the inner surface of the boiler is protected from abrasions caused by heavy metals in the water. Therefore, for a long-life boiler, high quality magnesium anode bar should be used in boilers and the magnesium anode bar used should be well calculated according to the surface area where the measurements will affect.



Pressure System Mounting Connection Equipments

- 1- 1/2 strainer filter
- 2- 1/2 Nipple
- 3- 1/2 Check Valve
- 4- 1/2 - 3/4 Ineral T
- 5- 8 Bar Safety Valve

* Products must be used in order to ensure their survival and guarantee.



Mounting Connection Equipments

- 1- 3 Bar Safety Valve
- 2- 1/2 - 3/4 Proportional nipple
- 3- 3/4 Elbow



Pressure pump

The Solar Energy Pressure Pump, which is used to increase the hot water pressure which comes low to the taps and fixture in solar water heating systems, is preferred because of its strong and quiet operation. It is brought into use with its high pressing capacity of 30 liters per minute and easy installation. Solar Energy Pressure Pump has automatic and manual working mechanism.



Automation control panel

In industrial type forced circulation systems, it controls the pump group or the circulation pump between the solar collector and the boiler. If the collector temperature is higher than the determined difference for the boiler temperature, the pump group is activated. Otherwise the pump group will not start. In addition, it has the feature of limiting the running water temperature in the boiler to a certain value.



Red Concentrated Organic Solar Energy Liquid (Super)

- * Reduces the freezing temperature of the liquid in the system during cold weather.
- * Increases the efficiency of the summer-winter system by raising the boiling temperature during hot weather.
- * Prevents foaming and protects system components against corrosion.
- * Does not contain nitrite, amine or phosphorus which may harm the environment and human health in its formulation.

Protection limits

Antifreeze	20	25	35	50	60	65
Water (%)	80	75	65	50	40	35
Freezing Point °C	-10	-12	-20	-37	-40	-50



Red Concentrated Organic Solar Energy Liquid (Eco)

- * Reduces the freezing temperature of the liquid in the system during cold weather.
- * Increases the efficiency of the summer-winter system by raising the boiling temperature during hot weather.
- * Prevents foaming and protects system components against corrosion.

Protection limits

(%)	Freezing Point	Boiling Point	Corrosion Point
Antifreeze Ratio			
%100	-40 °C	108 °C	Full Protection



Red Concentrated Organic Solar Energy Liquid (Super)

- * Reduces the freezing temperature of the liquid in the system during cold weather.
- * Increases the efficiency of the summer-winter system by raising the boiling temperature during hot weather.
- * Prevents foaming and protects system components against corrosion.

Protection limits

Antifreeze	20	25	35	50	60	65
Water (%)	80	75	65	50	40	35
Freezing Point °C	-10	-12	-20	-37	-40	-50



Red Concentrated Organic Solar Energy Liquid (Eco)

- * Reduces the freezing temperature of the liquid in the system during cold weather.
- * Increases the efficiency of the summer-winter system by raising the boiling temperature during hot weather.
- * Prevents foaming and protects system components against corrosion.

Protection limits

(%)	Freezing Point	Boiling Point	Corrosion Point
Antifreeze Ratio			
%100	-40 °C	108 °C	Full Protection



Solar Energy Hot Water Systems - Boilers

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