



WATER HEATER TANK WARRANTY

- > SAFETY INSTALLATION CONDITIONS
 - > SAFETY RECOMMENDATIONS FOR THE INSTALLATION AND MAINTENANCE OF THE WATER HEATER TANK
-



Read carefully the safety installation manual, maintenance and warranty terms before installing the device, so as to avoid possible damage and to protect yourself from any risks.

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IMPORTANT INFORMATION

WATER HEATER TANK WARRANTY

THE COMPANY OFFERS THE FOLLOWING WARRANTY:

> For the heat tank five (5) years warranty.

FURTHERMORE, THE WARRANTY IS VALID ONLY WHEN THE FOLLOWING TERMS ARE SATISFIED:

1. The heat tank must be installed and maintained by specified and certified personnel.
2. The magnesium bar of the heat tank, must necessarily be checked every year and it must be replaced instantly if it has been outworn to a percentage above 50% or it has been covered by the accumulation of salts.
3. The standard of the water quality used by the system should not be lower than the potable (page 4 table)
4. The tank should be grounded.
5. The water supply pressure should not exceed 10 bars, otherwise a pressure reducer should be installed.
6. System temperature and pressure should not exceed the specifications as indicated in the device's technical manual.
7. The tank should always have safety valves that will protect the system from the maximum temperature and maximum operating pressure. For the proper operation of the heat tank, it is necessary to check the safety valves and in case of malfunction must be replaced .
8. The area where the system is to be installed must have a functional water drainage on the floor.
9. The user must take all appropriate measures to exclude the overheating phenomenon.
10. The hydraulic connections to the tank must be such as to exclude the phenomenon of electrolysis.
11. The tank should not be damaged by a drop or a hit during transport or installation.
12. Maintenance of the heat tank must be in accordance with the maintenance schedule which the installer has design.
13. The installer and maintainer should record the tasks and the reason why they were called in the maintenance book. This record file is a key element of the warranty and should be made available on request.
14. All repairs or maintenance must be carried out using quality spare parts which are specific indicated in the device's maintenance book. Under no circumstances should you exercise any welding on the tank's metal structure. You risk to

deteriorate or destroy the tank.

15. The installation must meet the conditions described in the installation manual which is an integral part of the warranty.
16. The tank does not feature a heating element. Upon request by the user a heating element may be placed in any of the free sockets indicated only by a certified installer and a certified electrician. Only special heating element shall be placed in the tank. The certified installer is responsible to indicate the appropriate position and type of the heating element – always guided by the instructions provided by the heating element manufacturer. The constant and unreasonable use of the heating element may cause damage to the tank and will set it beyond warranty.

CAUTION!



Safety tips

The active part of the heating element shall not be inside the socket (tank's coupling or neck). Instead it shall be as closer as possible to the center of the tank, so as the heated water can be naturally alternated over the heating element's surface.

The tank shall always be placed on a totally flat surface (without any inclination) so that no air is captured in the couplings or any other part, especially if this part is close to the heating element.

The heating element shall always be totally covered by water.

ATTENTION!



Very poor water quality at the water outlet can result in salt formation and salts may block the safety valve. In this case, the tank remains unprotected against very high temperatures above 90°C and high pressure (greater than 10 bars).

ATTENTION!



In order to avoid the excessive maximum working pressure in the tank the studier when choosing the initial water pressure for the installation should take into consideration the pressure increase after the water heating. Furthermore, an expansion tank shall be installed.



THE WARRANTY DOES NOT COVER:

- > The magnesium rod in the tank.
- > Damage to the heating element.
- > Damage to safety valves (if are included in the tank's packaging) of the tank, by excessive concentration of salts or external bodies.
- > Tank damage due to excessive pressure of the water supply network.
- > Damage of the tank caused by overheating.
- > Damage caused by unauthorised third party intervention.
- > Damage caused by improper maintenance.
- > Damage caused by extreme operating conditions and extrinsic factors (*vandalism, fire, etc.*).
- > The sealing flange

NOTE:

In the event of a breakdown, the workshop's fees and transport costs are borne by the customer in any case. The manufacturer reserves the right to change the terms without notice.

WATER SPECIFICATIONS TABLE

ELEMENT	PRICES
pH	7-9
Total hardness	6-15° dH
Chlorides	< 100 mg/l
Free chlorine	< 0,5 mg/l
Sulphates	< 80 mg/l
Conductance	< 650 mS/cm 25°C

SAFE INSTALLATION CONDITIONS

This is an integral part of the warranty to which it refers. It is not an installation guide. It refers to the appropriate conditions for a safe and right installation.

GENERAL INSTRUCTIONS

1. This manual is an essential and indispensable part of this device. It has to be carefully kept and always accompany the device.
2. Please read the instructions and warnings carefully. They contain crucial information concerning the safe installation, operation and maintenance of this new device.
3. The responsibility of installation lies with the buyer and has to be performed by an authorized specialist.
4. Using the device for reasons other than those specified in the manual is strictly prohibited. The manufacturer shall not be held liable for any damage caused by improper or unjustifiable use or by failure to comply with the instructions in the manual.
5. Installation, maintenance, and other special work on the device have to be performed by a specialist, always in compliance with existing instructions provided by the manufacturer.
6. Faulty installation may cause personal injury or damage your property. The manufacturer shall not be held liable for such damage.
7. Keep all packaging materials (*clips, plastic bags, polystyrene foam*) out of reach of children, as hazards may occur.

8. All repairs must be performed exclusively by an authorized specialist, using only the appropriate parts. Failing to comply with the instructions above may affect your safety and relieves the manufacturer of all responsibility.

CAUTION!



The installation must comply with local regulations, concerning hydraulic and electrical installations. Removing the packaging must be done on site, in order to protect the device from being damaged.

RISK TO HEALTH



Improper installation work can contaminate the potable water.

- Install the hot water tank hygienically and thoroughly and in accordance with current standards
- Rinse the hot water tank and piping thoroughly with potable water.

Install and equip the potable water pipes according to your country's applicable regulations and instructions.

INSTALLATION & SPACE REQUIREMENTS FOR THE INSTALLATION



Before installing the water heater tank, you have to choose the right location carefully and check the surface, to ensure it can bear the device's weight. The water heater tank must be installed on a flat surface with adequate bearing capacity.

INSTALLATION PARTICULARITIES

In case the chosen surface is not compatible with the standard equipment provided, another kind of equipment will have to be used. Responsibility for choosing the equipment lies solely on the installation expert and not on the manufacturer. It is up to the installation expert, whether they will suggest using another kind of equipment to the customer, to which the customer has to have agreed upon prior to the installation.

WORKING CONDITIONS

Keep the installation area clean and free of objects that may hinder the installation process. Do not allow other people, apart from the installation expert, to get near the tools, as well as the installation location. Use only parts that are compatible with the water heater you bought. The use of other parts or unsuitable tools may cause accidents or pose other hazards.

PERSONNEL REQUIREMENTS

The installation of water heaters has to be performed exclusively by authorized installation experts (*technicians*). Always wear protective glasses, suitable working attire, protective shoes and helmet. In hazardous locations, all protection measures must be taken and only special equipment must be used.

DEVICE TRANSPORTATION:

Transportation and handling of the tank

Abrupt movements must be avoided during the transportation of the tank, as they may result in fall and damage.

- You must be extremely careful while lifting the tank and always take precautions, in order to avoid possible accidents, injuries and other hazards.
- To avoid damaging the tank, do not remove the packaging, until it reaches the installation location.
- Do not place the tank on hard or uneven surfaces.

RECOMMENDED SYSTEM INSPECTIONS



ATTENTION!

BECAUSE SYSTEM MAINTENANCE AND CONTROL ARE DEPENDING FROM EVERY LOCAL CLIMATE DATA, WATER QUALITY AND THE OWNERS USAGE THE MAINTENANCE FREQUENCY IS PART OF THE AGREEMENT BETWEEN THE SYSTEM OWNER AND THE MAINTAINER INSTALLATION AND SYSTEM CONTROLS MUST ALWAYS BE PERFORMED BY AUTHORIZED SPECIALISTS. THE DATA OF MAINTENANCE SHOULD BE ALWAYS RECORDED IN THE MAINTENANCE BOOK FROM THE INSTALLER.

SYSTEM CHECK UPS

- Annually – preferably before the start of the high usage period to ensure that the heater operates properly and all the parts are in good working condition.
- Maintenance periods are determined upon delivery of the heater. During maintenance, you have to make sure that the following parts work properly:
 - Pressure reducer
 - Heat exchanger circuit
 - All joints and pipes for leaks
 - Magnesium anodes
 - Pipes insulation
 - Safety valves
 - Sealing flange

ATTENTION!



IN CASE THAT ALL THE NECESSARY MEASURES ARE NOT TAKEN AND THE SYSTEM IS OVERHEATED, EXCEEDING THE SAFETY TEMPERATURE OF 95°C, THEN THE SYSTEM IS OUT OF THE WARRANTY.

Devise maintenance

The water heater tank maintenance must be performed according to the plan determined upon delivery. The maintenance book must always be completed after the maintenance man's visit.

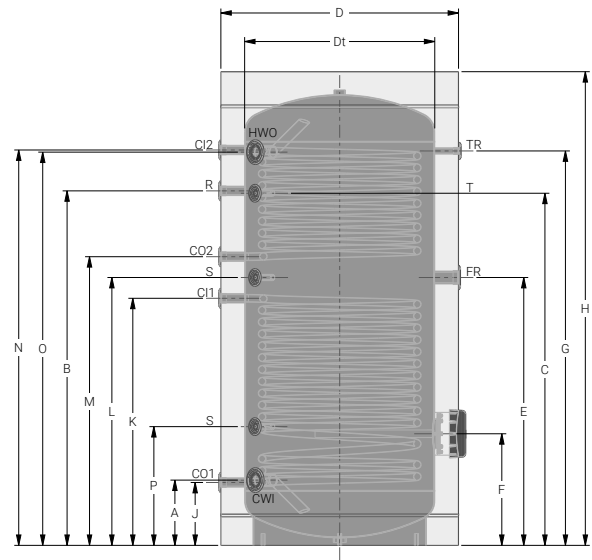
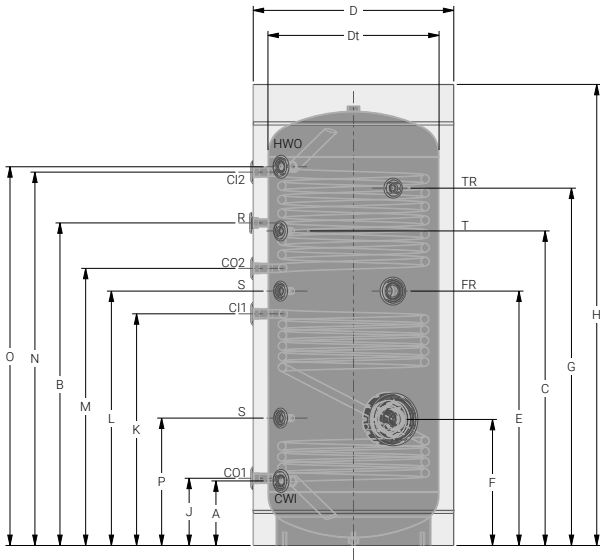
Dismantling and Disposal

All the device's materials have to be properly disposed of, according to existing legislation. Uninstalling, transportation and other costs must be paid by the owner.



During of the constant evolution and improvement of the products and services, the manufacturer reserves the right to change or modify the information or of the specifications mentioned herein manual without prior notice or other obligation

DIMENSION & EXPLANATORY BOARD



TYPE	150L	200L	300L	500L
PART NUMBER	BLS2-C 150	BLS2-C 200	BLS2-C 300	BLS2-C 500
Tank capacity (Liter)	136	192	280	446
Coil S1/S2 capacity (Liter)	4,66 / 2,67	5,98 / 4,66	9,91 / 5,98	12,55 / 7,27
K Coil S1 inlet (CI1)	547	669	818	866
N Coil S2 inlet (CI2)	849	1114	1343	1396
J Coil S1 outlet (CO1)	217	209	218	251
M Coil S2 outlet (CO2)	669	834	1043	1036
- Coil S1/S2 surface (m2)	0,731 / 0,42	0,938 / 0,731	1,555 / 0,938	1,97 / 1,14
B Recirculation (R)	3/4" 759	3/4" 989	3/4" 1243	1" 1206
A Cold Water Inlet (CWI)	1" 217	1" 209	1" 218	1" 241
O Hot Water Outlet (HWO)	1" 854	1" 1140	1" 1383	1" 1416
C Thermostat (T)	753	1039	1198	1176
G Thermometer (TR)	839	1135	1318	1336
P Sensor (S)	347	314	443	476
L Sensor (S)	608	749	931	951
E Free outlet (FR)	1 1/2" 608	1 1/2" 749	1 1/2" 931	1 1/2" 951
To connect S1 to a boiler with 80°C and water 15/60°C (kW/l/h)	13,1 900	14,4 900	22,9 900	25,8 900
To connect S2 to a boiler with 80°C and water 15/60°C (kW/l/h)	10,4 900	13,6 900	16,4 900	19,2 900
F Boiler cleaning hole	Ø140 385	Ø140 402	Ø140 453	Ø140 471
Anode	22x200 22x200	22x400 22x200	32x500 22x400	32x500 32x500
H Total height	1120	1400	1620	1700
D External Diameter	560	600	630	750
Dt Internal Diameter	450	480	520	640
Tilt height (mm)	1217	1475	1728	1838
Weight (kg)	71	92	122	161

Material: Steel Sheet

Welding: Automatic Metal Welding

Protection Coating: High Quality Glass – Enamel and protection Anode

Maximum Working Pressure: 10 bar

Water Test Pressure: 15 bar

Maximum Operating Temperature: 95°C

Insulation: Polyurethane foam of 55 mm thickness, Density 52 kg/m³ (150–500L) -
Removable Soft Polyurethane foam of 100 mm thickness, Density 20 kg/m³ (750–1000L)

Coil: Steel tube

Maximum Coil Test Pressure: 25 bar

Electric Resistance: Upon Request

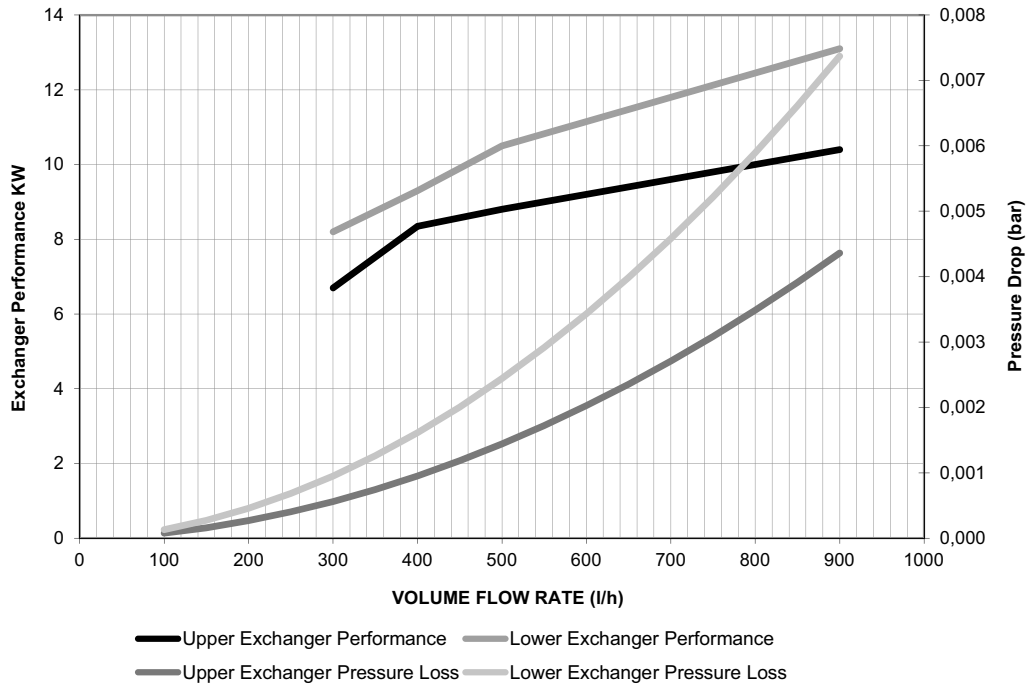
External Cover: Soft pvc, color of your choice

For all the boilers enameled and combination ones it is necessary to install an expansion vessel, a security valve and a protection anode for the hot domestic water.

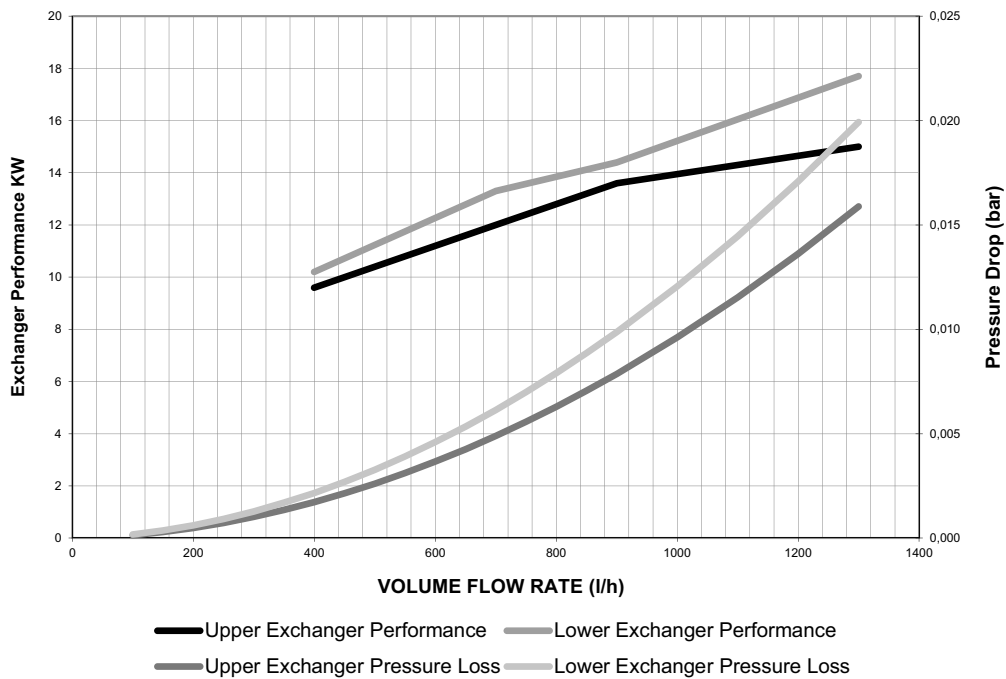
TYPE		750L		1000L	
PART NUMBER		BLS2-C 750		BLS2-C 1000	
	Tank capacity (Liter)	716		828	
	Coil S1/S2 capacity (Liter)	15,2 / 8,59		19,1 / 12,55	
K	Coil S1 inlet (CI1)	1"	942	1"	1040
N	Coil S2 inlet (CI2)		1422		1664
J	Coil S1 outlet (CO1)		292		265
M	Coil S2 outlet (CO2)		1082		1215
-	Coil S1/S2 surface (m2)	2,38 / 1,348		3 / 1,97	
B	Recirculation (R)	1"	1272	1"	1492
A	Cold Water Inlet (CWI)	1 1/2"	292	1 1/2"	275
O	Hot Water Outlet (HWO)		1422		1655
C	Thermostat (T)	1/2"	1272	1/2"	1482
G	Thermometer (TR)		1382		1660
P	Sensor (S)		492		500
L	Sensor (S)		1012		1127
E	Free outlet (FR)	1 1/2"	1012	1 1/2"	1127
	To connect S1 to a boiler with 80°C and water 15/60°C (kW/l/h)	30,15 900		38,5 900	
	To connect S2 to a boiler with 80°C and water 15/60°C (kW/l/h)	20,5 900		25,5 900	
F	Boiler cleaning hole	Ø170	502	Ø170	470
	Anode	32x500	32x500	32x500	32x500
H	Total height	1780		2020	
D	External Diameter	1000		1000	
Dt	Internal Diameter	800		800	
	Tilt height (mm)	2040		2230	
	Weight (kg)	247		277	

150L & 200L EXCHANGER PERFORMANCE CURVES

BLS 150L- Exchanger performance curves - Pressure Drop

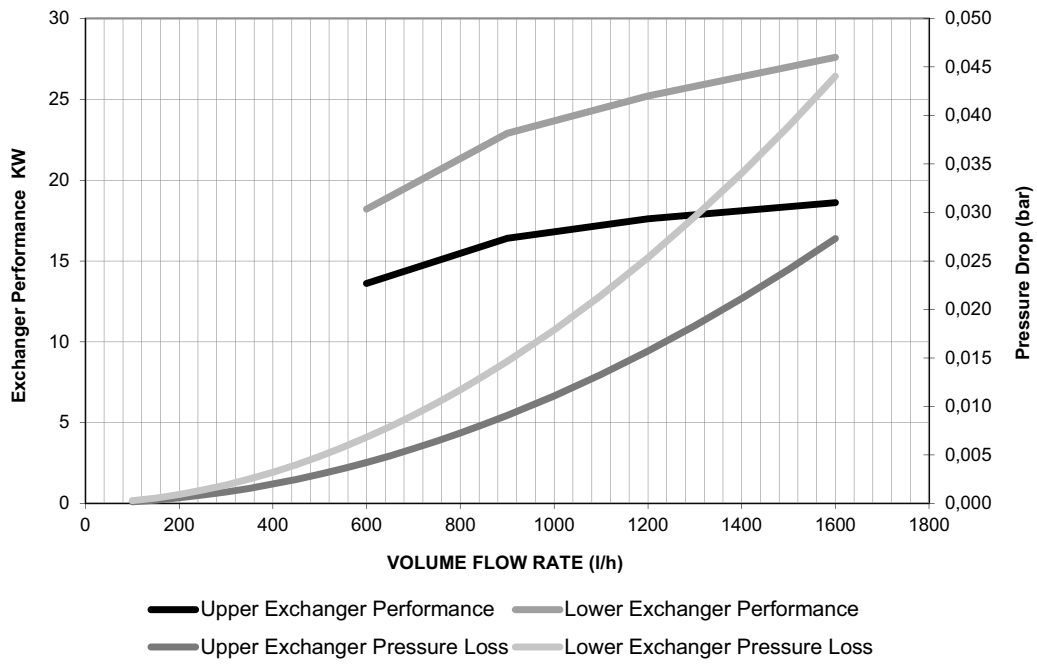


BLS 200L- Exchanger Performance Curves - Pressure Drop

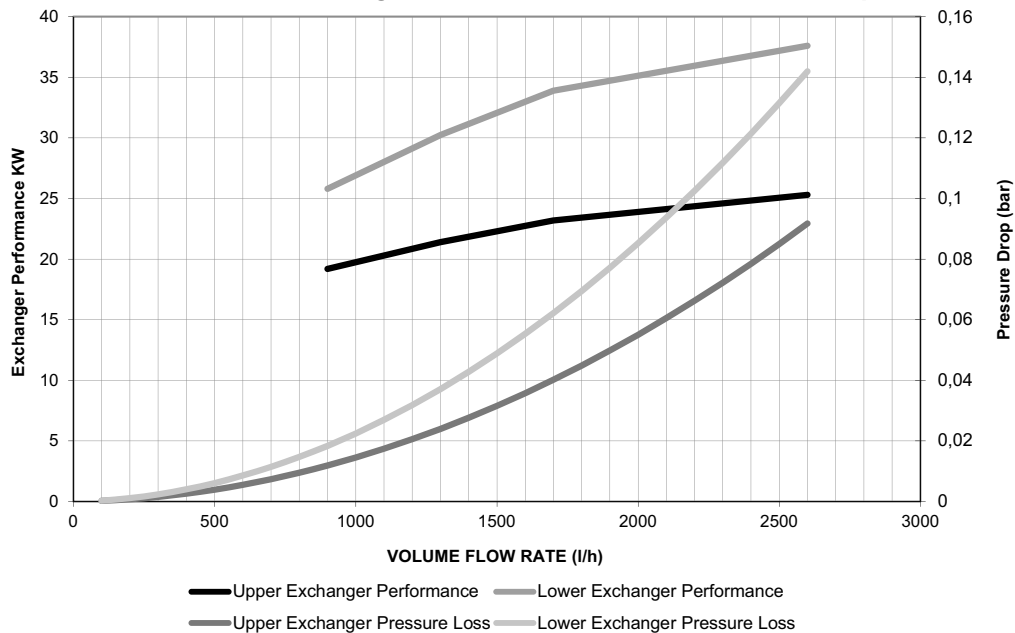


300L & 500L EXCHANGER PERFORMANCE CURVES

BLS 300L- Exchanger Performance Curves – Pressure Drop

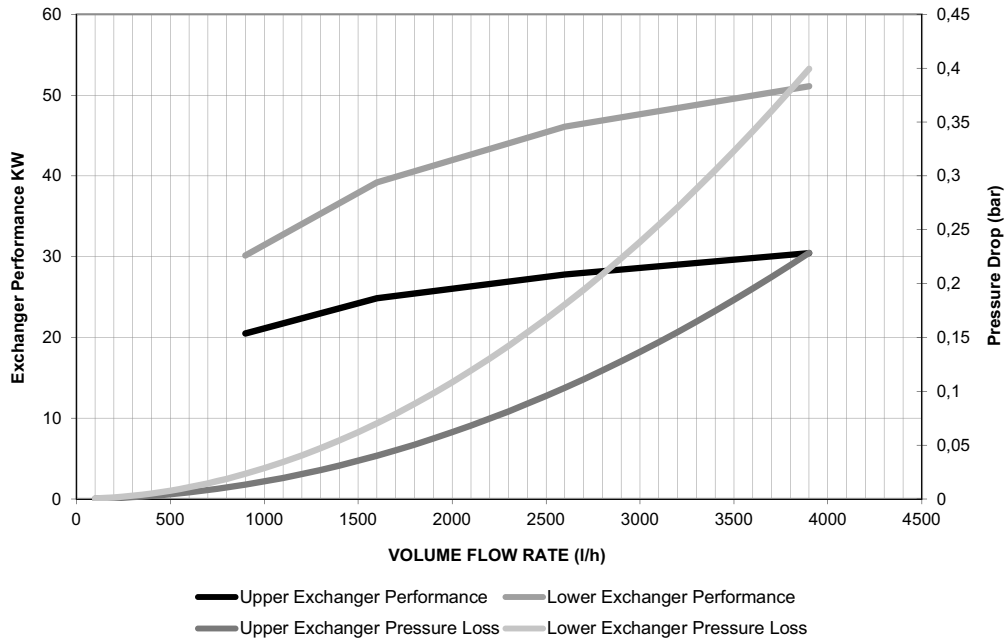


BLS 500L- Exchanger Performance Curves – Pressure Drop

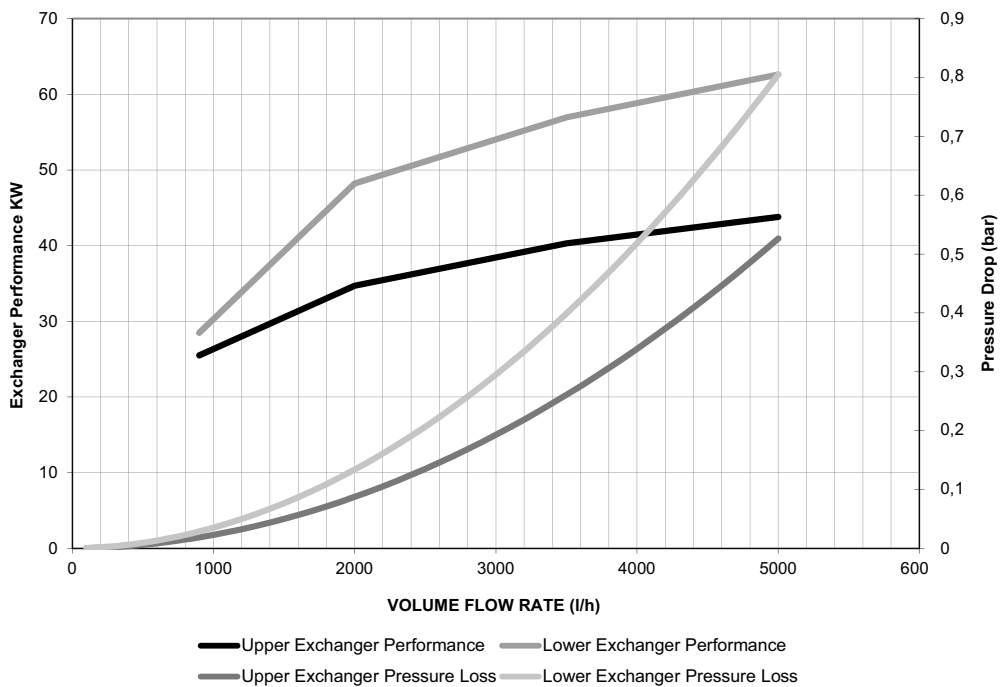


750L & 1000L EXCHANGER PERFORMANCE CURVES

BLS 750L- Exchanger Performance Curves – Pressure Drop



BLS 1000L- Exchanger Performance Curves – Pressure Drop



TRANSFERRING THE HOT WATER TANK

The hot water tank should be transferred to the area where it will be placed on its special transfer pallet. Transfer and placement should be carried out by specialised personnel with the appropriate equipment. The area where the tank will be installed should have the required specifications for a boiler room.

USER NOTE



For tank installation and maintenance, the required free space around and above the tank should be ensured during planning, so as to allow carrying out the required procedures.

CAUTION!



RISK OF INJURY by not securing the tank adequately during transport.

- Use only suitable means for transportation.
- Secure the transported load against falling.

CAUTION!



RISK OF INJURY from carrying heavy loads.

- Lifting and transfer should be always carried out by specialised persons.

USER NOTE



Where possible, transport the hot water tank fully packed to the installation room. This ensures protection during transportation.

POSITIONING THE HOT WATER TANK

The hot water tank is designed for vertical and can be installed in accordance with its dimensions. The floor has to be level and durable. Please see in the next page the guide for the proper placement of a vertical tank.

CAUTION!



BOILER DAMAGE from frost.

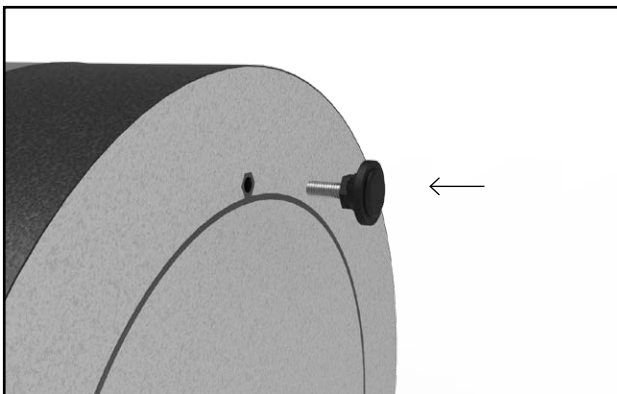
- The installation area must be dry and protected from freezing.

CAUTION!

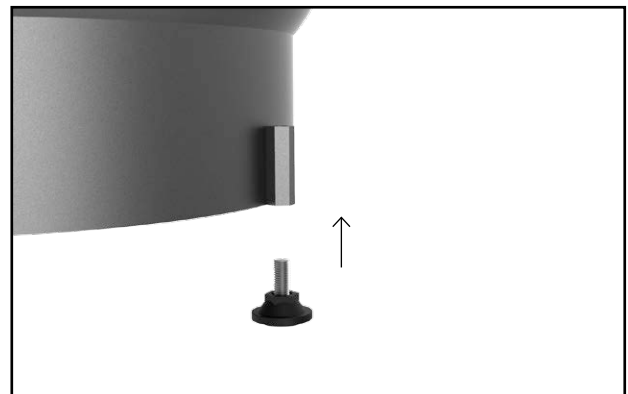


BOILER DAMAGE from corrosion.

- Use the hot water tank in closed loop systems only.
- Do not use open expansion vessels.

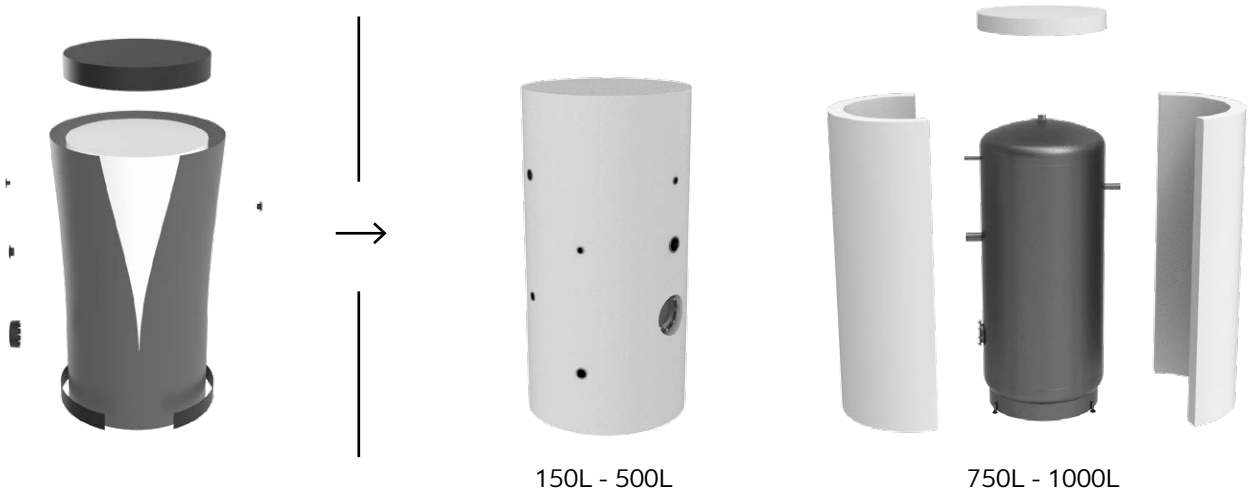


150L - 500L



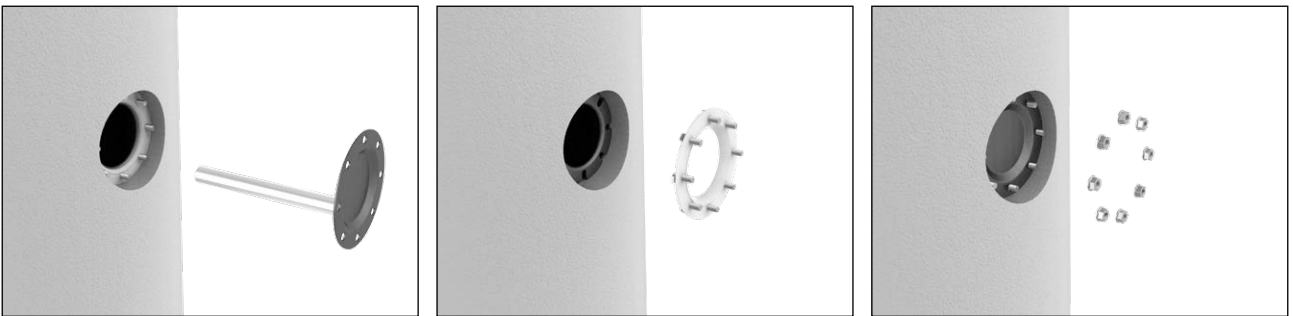
750L - 1000L

COVER AND INSULATION PLACEMENT & REMOVAL

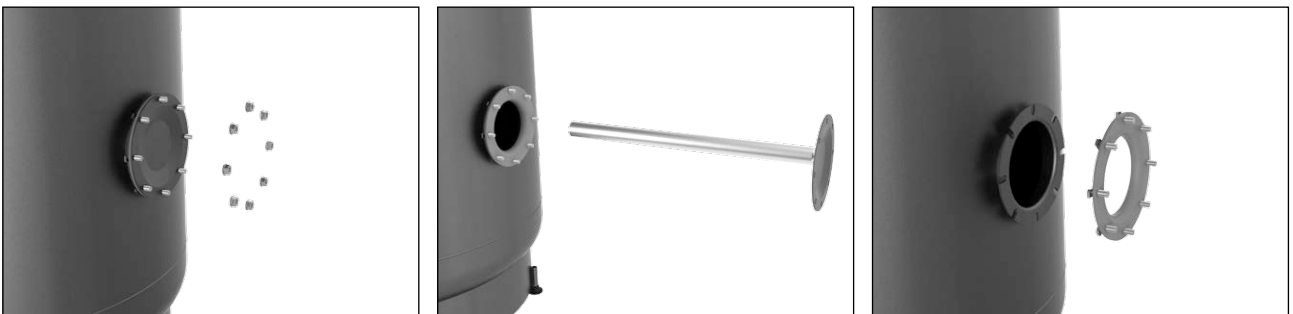


FLANGE REMOVAL

150L - 500L



750L - 1000L



INITIAL START OF HOT WATER TANK

Before putting the hot water tank into operation, check its impermeability to avoid leaks during operation.

- Vent the hot water tank by opening the vent/bleed valve or the highest faucet.
- Before heating up, check that the boiler, the hot water tank and piping are completely filled with water by opening the vent/bleed valve.
- Check all connections, piping and the cleaning port for leaks.

LEAK TEST

Check all connections, the cleaning port, and the anode for leaks.

USER NOTE



Carry out the hot water tank leak test with potable water only. The maximum test pressure must not exceed 10 bars.

SAFETY RELIEF VALVE

(supplied by the customer)



- Place a sign with the following indication on the safety relief valve: “Don’t close the blow-off line. Water leakage may occur during heating for security reasons.”
- The blow-off line cross-section should be at least equal to the output cross-section of the safety relief valve.
- Check regularly the operational readiness of the safety relief valve with manual test.

OPERATING TIPS

Inform the facility owner that

- the relief valve blow-off line always needs to be kept clear.
- the proper functioning of the relief valve should be checked at regular intervals with manual test.
- the local heating contractor should be notified if the thermal safety cut-out on the boiler is triggered repeatedly.

SHUTDOWN TIPS

In the case of long periods of absence of the facility owner we recommend the following:

- Keep the hot water tank in operation.

If you ever need to shut down the hot water tank, when you start using it again, observe the hygiene and potable water requirements applicable in your country.

CAUTION!



BOILER DAMAGE

The hot water tank can be permanently damaged by excessive pressure if the safety relief valve is blocked.

- Always keep the blow-off line of the safety relief valve open.

CAUTION!



BOILER DAMAGE

If the hot water tank ever has to remain empty for several days, signs of corrosion may appear due to residual moisture.

- Thoroughly dry the inside of the tank (e.g. with hot air) and keep the cleaning port cover open.

MAINTENANCE

Checking and cleaning of the hot water tank by an expert at least every two years is generally recommended. Please inform the facility owner accordingly. Shorter checking and cleaning intervals should be chosen in case of bad quality water (hard to very hard water) together with high operating temperatures.

Preparing the hot water tank for cleaning

- Disconnect the power supply of the heating system and disconnect all electrical power supply to the resistor, if present in the tank.
- Empty the hot water tank by closing the fresh water supply valve and drain the tank. For ventilation, open the vent/bleed valve or the highest faucet.
- Remove the casing lid and the thermal insulating element from the hot water tank.
- Unscrew the screws from the cleaning port cover.
- Remove the cleaning port cover.
- Unscrew the hex screws; remove the cleaning port gasket and the sealing gasket.

USER NOTE



The sealing gasket feature must have at least the same technical specification with the one provided by the tank producer.

CAUTION!

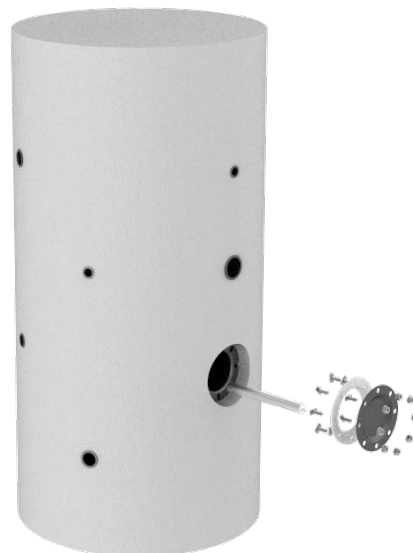


BOILER DAMAGE due to *unsatisfactory cleaning and maintenance.*

- *Carry out cleaning and maintenance of the hot water tank at least every two years.*
- *Immediately restore all faults to prevent damages!*

RECOMMENDATION

During the system's use there might be gathered precipitates, other materials and Biofilm in the tank. This is mainly due to the bad water quality, to the water supply network, to the water pipes and to the water heating exchanger inside the tank. The for mentioned phenomenon might deteriorate the water quality so it is recommended apart from the scheduled tank cleaning also a filter placement to the water inlet from the water network.



During maintenance, manhole sealing and sealing flange should be removed.

CLEANING THE HOT WATER TANK

Check the hot water tank interior for scale (salt) deposits. If there are scale deposits inside the hot water tank, these should be removed. You can increase the cleaning effect by heating up the empty hot tank; the thermo-shock effect releases scale deposits more easily from the heat exchanger coil. Remove the residues with a wet & dry vacuum cleaner with plastic suction tube. If the deposits inside the hot water tank are too hard, you can remove them with chemical cleaning. It is recommended to employ a specialised technical company for the chemical cleaning.

CAUTION!



DAMAGE OF THE INSTALLATION from damaged surface finish.

- Never use hard objects or objects with sharp edges to clean the interior walls of the hot water tank.
- If you observe or notice damage or destruction of the tank's finish, you should contact with the supplier from which it was bought to carry out the planned actions

CAUTION!



Under no circumstances should you exercise any welding on the tank's metal structure.

CAUTION!



PREVENT LEGIONELLA RISK IN THE HOT WATER TANK

The primary method used to control the risk from Legionella is water temperature control.

The water temperature at the bottom of the tank shall at least once per week, depending on the use and the water quality, reach or overpass 60°C for at least 30 minutes. This period shall be adjusted by the installer.

MAGNESIUM ANODE AND SEALING FLANGE CHECK

The magnesium anode is a protective anode, which is consumed during the operation of the hot water tank. The magnesium anode should be visually checked at least every year and replaced in case it is necessary. During magnesium anode check the elastic flange shall also be checked for any damages and it shall be replaced if necessary .

- Check the magnesium anode for decay. Replace the magnesium anode if its diameter has been reduced by more than 50%.

USER NOTE



Do not allow the contact of the magnesium anode with oil or other lubricants. Make sure that the rod is clean.

MAINTENANCE BOOK

DATE OF PURCHASE: OWNER DATA:

RETAILER:

.....

INSTALLER INFORMATION:

MAINTENANCE DATE	MAINTAINER INFORMATION	REASON OF VISIT	EXECUTED OPERATIONS	SPARE PARTS USED