SUNSYSTEM®

INSTALLATION and OPERATION MANUAL
HYGIENIC COMBI TANKS
HYG series/ HYG-B series

Capacity, L	500	800	1000	1500



HYG/HYG-B
without coil



HYG R/HYG-B R
with one coil



HYG R2/HYG-B R2
with two coils

model: .....

.....

v. 0.1.

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Dear Customers,
We strongly hope that the appliance you have bought from us will contribute to creating comfort at you homes and decreasing the energy expenditure.

This manual contains important information for the safe and correct installation, start-up and trouble-free operation and maintenance of the water heater.
Hygienic Combi Tanks can be used only in the manner described in this manual – to produce and accumulate sanitary hot water and hot water for space-heating system.
The application and any other was the area of operation is not recommended by the manufacturer and is not responsible for the occurrence of defects or failures.

2. Instructions to installer



The preparation, installation and commissioning must be performed by an authorized installer / service.

During installation and operation, the country specific requirements and regulations must be observed:
• local construction regulations on installation of water tank; weight of the boiler to comply with the stability of the floor of the room where it will be installed.
• regulations and norms concerning the fitting of theinstallation with safety devices.
• safety during installation - personal protective equipment



Use only original SUNSYSTEM parts

2.1. Requirements to Hygienic Combi Tank installation room

When choosing a room for tank installation observe the following requirements:

- to have a drainage channel. Some maintenance procedures require draining of all water from the tank.
- Thermal insulation of the room. This provides efficiency of the appliance and prevents the water from freezing.

2.2. Requirements for installation

- The length of connecting pipes between the water tank and consumer must be as short as possible.
- Before connecting the water tank to the installation, check all screw connections (plug and etc.). In very rare cases - during transportation, loading and unloading operations - the screw connections may be loosen.
- Before commissioning, check the installation for leaks
- Do not exceed the working pressure of 3 bar for buffer tank and 6 bar for hygienic stainless steel coil.
- If there is a risk of freezing of water in the tank - drain the tank completely or let the water tank works continuously.

3. Description of water tank

Hygienic Combi tanks are used To produce and accumulate sanitary hot water and hot water for space-heating system.
Coil-in-Tank construction- Flexible stainless-steel coil for sanitary hot water +Buffer tank powering space-heating system. Sanitary water heats up instantaneously as it flows through the large surface stainless coil. Thus water is delivered hot while still fresh and clean of depositions.

HYG series -Inlet/Outlet arrangement –180 angle degrees.
HYG-B series -Inlet/Outlet arrangement –90 angle degrees.

HYG /HYG -B models, the heat source is an electric heater.
HYG R/ HYG-BR models have a built-in heat exchanger (coil type) designed to connect to a solar installation or boiler. Option for installation of an electric heating element.
HYG R2 / HYG-BR2 models have two built-in heat exchanger (coil type) for connection to the solar system and boiler. Option for installation of an electric heating element.

3.1. Removable insulation and outer casing

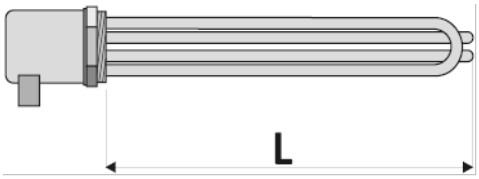
The quality of the insulation of a water heater is a key factor for its heat conservation capability and energy efficiency.
All **Hygienic Combi tanks HYG series/HYG-B series** have Removable insulation with thickness 100 mm (DIN 4753, part 8) and outer casing of PVC with RAL 9006 color.

3.2. Water tank

Floor standing. Water tank is made of low-carbon steel S235JR,
DHW tube of sanitary grade stainless steel -316L, heats up instantaneously.
All threads are internal (see technical parameters).

3.3. Electric heating element

Outlet connection of electric heating element 1 ½“ :
3000W/230V; 4500W/230V; 6000W/230V; 7500W/400V.

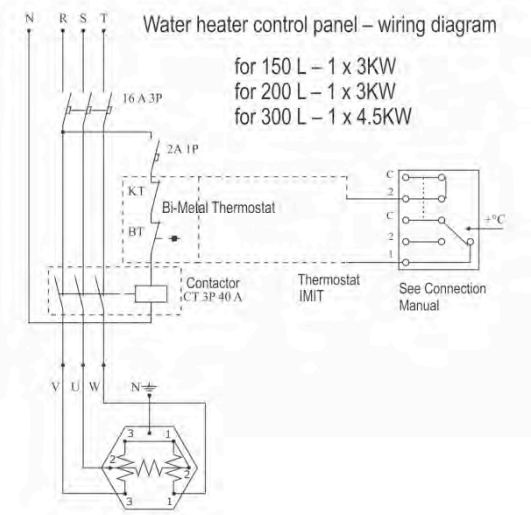


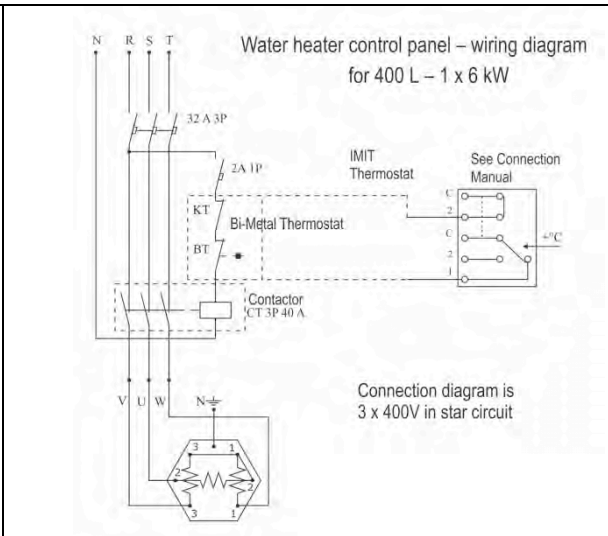
Water tank Capacity, L	Connection	Length L, mm	Current, W	Voltage, V
500	1 ½“	410	6000	230/400
800÷ 1500	1 ½“	590	7500	230/400

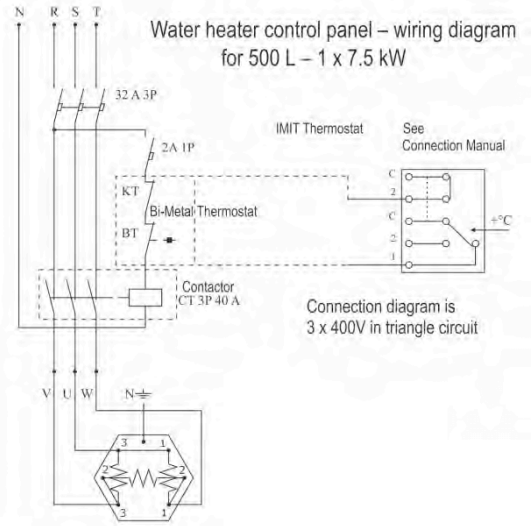
In the table of technical parameters is specified location for installation of electric heating element

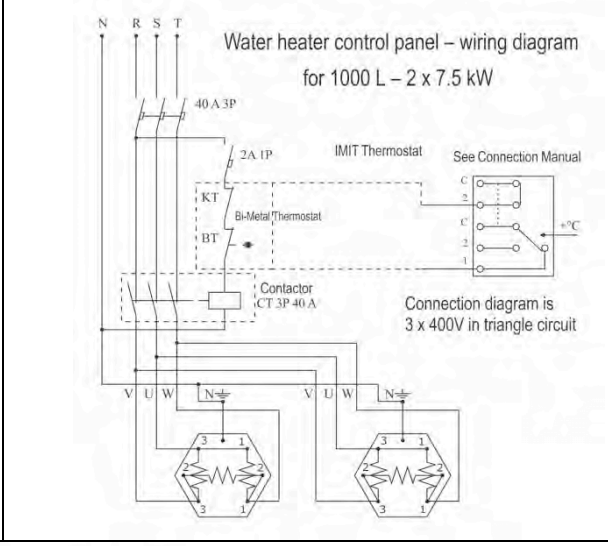
The connection of the electric heating element to the electric power supply must be done by a qualified electricians.
When connect the heating element to the electric network, make sure that it is properly grounded.

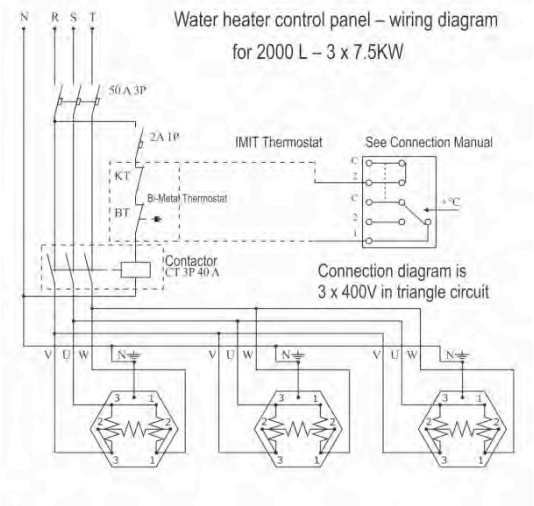
Wiring diagrams











3.4. Thermostat

Included at standard water tank package.

The thermostat may be adjusted by the user within the range 30°C ÷ 80°C, and the thermal protection would go off in case the water reaches 95°C.

This is an adjustable double THERMOSTAT which is designed to regulate the water temperature and ensures safety tolerance; it can be manually adjusted (TLSC model) or automatically adjusted (TLSC/A model).

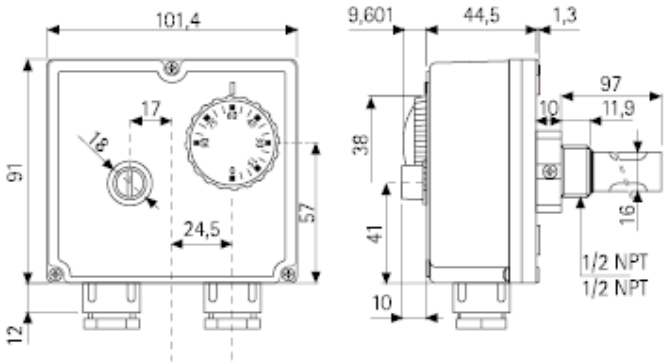
<table>
<tr>
<td></td>
<td>

Fig 1</td>
</tr>
<tr>
<td>CONFORMITY TO STANDARDS
This product is in conformity with:
- EN 60730-1 and subsequent editions;
- EN 60730-2-9

CONFORMITY TO REGULATIONS
This product complies with:
- Low Voltage Directive 73/23 EEC
- Electromagnetic Compatibility Directive 89/336/EC</td>
<td>TECHNICAL CHARACTERISTICS
Temperature range – regulation- 0°C ÷ 90°C;
limit - 90°C ÷ 110°C;
Tolerance
Regulation ± 5k,
limit – 15 k; -6 k (depends on the type)

Temperature differential
Regulation 6 ± 2 k; 4 ± 1 k (depends on the type)
Limit 25 ± 8 k; 15 ± 8 k (depends on the type)</td>
</tr>
<tr>
<td>Automatic adjustment (TLSC/A) and manual adjustment (TLSC).
Degree of protection = IP 40
Insulation class = I.
Temperature change rate = <1K/min.
Maximal temperature point: 80°C
Maximal temperature for electric lamp: 125°C
Accumulation temperature: 15°C ÷ 55°C
Maximum pressure of the cartridge: 10 bar
Constant time: < 1“</td>
<td>Electric connection:
C-1 ADJ.:10(2,5)A/250V°;
C-2 ADJ.:6(2,5)A/250V~;
C-1LIM.:0,5A/250V~;
C2LIM.:10(2,5)A/250V~;
Terminal – circuit breaker or switch-on contacts.
Switch-on action – 2B.
Place of installation – normal.
Type of wire – M20 x 1.5.</td>
</tr>
</table>

WARNING !
All installation operations, including manual adjustments, must be fulfilled by a qualified specialist following all safety conditions.

INSTALLATION AND CONNECTION Safety instructions:

Before connecting the thermostat, make sure that THE UNIT TO BE THERMALLY CONTROLLED (water heater, pump, etc.) IS NOT CONNECTED to the power supply network, and is in compliance with the instructions in Figure

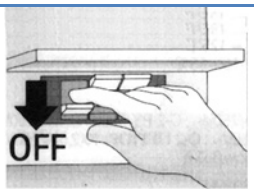


fig 2

A) See fig 3 and fig 4

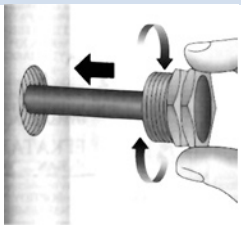


fig 3

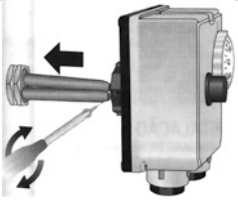


fig 4

B) Unscrew the three bolts and remove the front part of the thermostat. Unravel the power supply wires and connect them to the terminals of the thermostat (Figure 5) following the instructions.



fig 5

NOTE: See Figure 6.
To close the front part, the cartridge opening must align with the coupling of the adjustment knob.



fig 6

CONNECTION (Figure 7)
LIMITATION
TERMINAL 2 – opens the circuit when the temperature rises.
TERMINAL C – common contact.
THERMOSTAT
TERMINAL 1 – opens the circuit when the temperature rises.
TERMINAL 2 – closes the circuit when the temperature rises
TERMINAL C – common contact

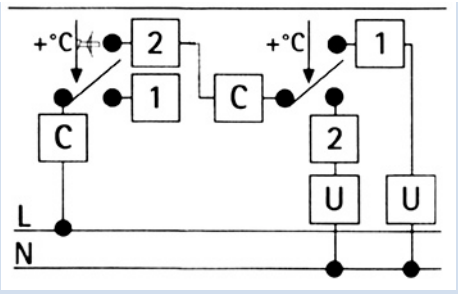


fig 7

TEMPERATURE ADJUSTMENT (see Figure 8)
A – Reset button (only for TLSC)
B – Knob for temperature adjustmentct

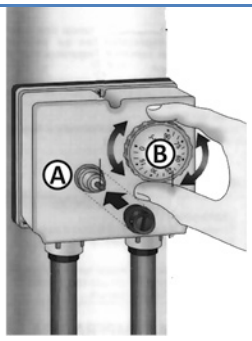
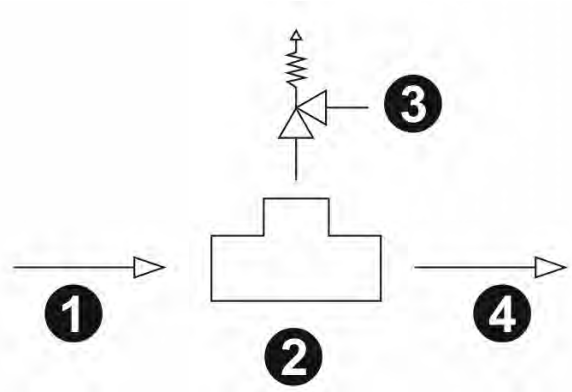


Fig 8

3- Connecting of safety relief valve to Hygienic Combi Tank

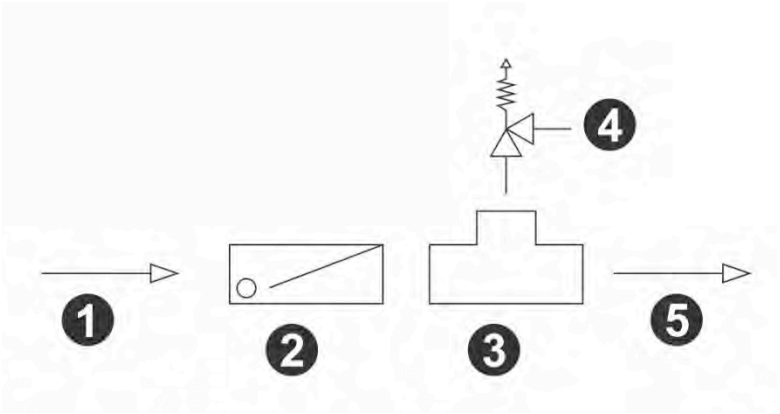
3.1 Connecting of Buffer tank



Legend:

1	Heating system
2	Tee
3	Safety (relief) pressure valve
4	Heat carrier inlet

3.2 Connecting of Stainless HYG coil



Legend:

1	Cold water inlet - water supply
2	Check (return) valve
3	Tee
4	Safety (relief) pressure valve
5	Cold water inlet - HYG coil

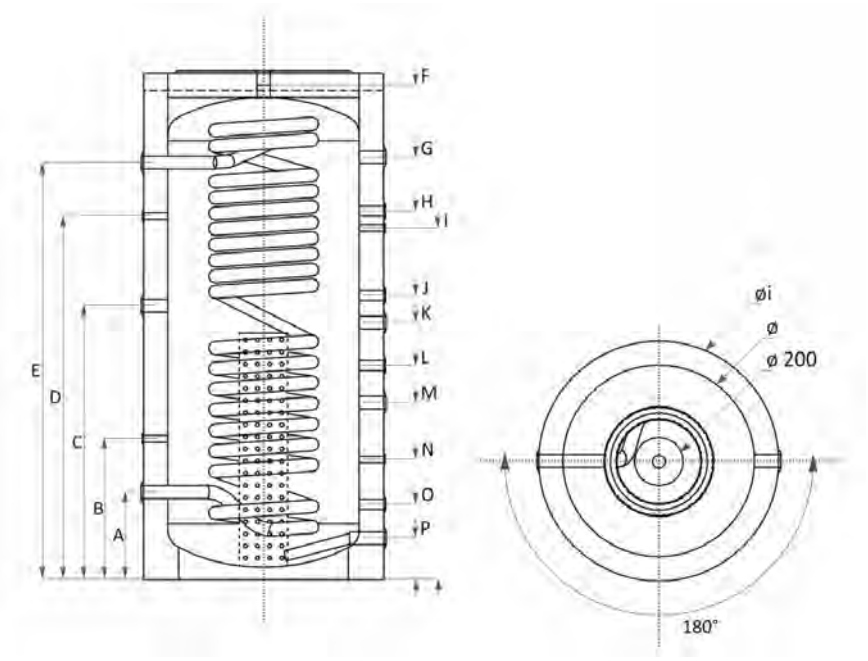
Stop (Shut-off) valves should never be installed between a safety (relief) valve and the tank. It is recommended once a year to check the operation of the safety valve.

4. Technical parameters HYG series

4.1. HYG – without coil



		HYG 500/20	HYG 800/33	HYG 1000/33	HYG 1500/49
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	480/20	767/33	967/33	1451/49
Height H / Min. vertical clearance	mm	1610/1660	1860/1910	2010/2090	2170/2220
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	4,5	7,5	7,5	11
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	-	ø200	ø200	ø200
Thermometer		option			
Electric heater		option			
Weight/insulation	Kg	110/12.3	144/16,4	170/18	301/23,2

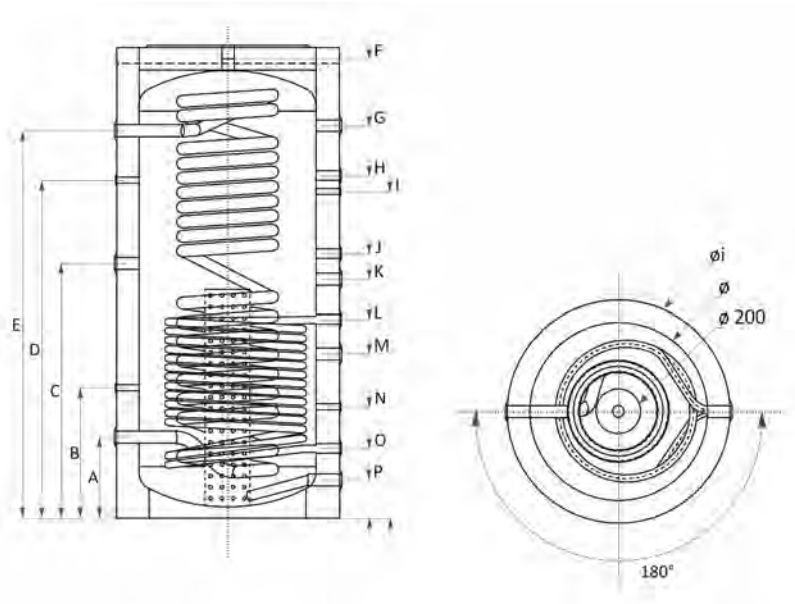


		HYG 500/20	HYG 800/33	HYG 1000/33	HYG 1500/49
Cold water inlet HYG	A, mm	G1"/275	G1"/330	G1"/360	G1"/392
Sensor sleeve	B, mm	G½"/410	G½"/570	G½"/580	G½"/875
Electric heating element (optional)	C, mm	G1½"/790	G1½"/920	G1½"/1130	G1½"/1130
Sensor sleeve	D, mm	G½"/1120	G½"/1290	G½"/1500	G½"/1500
Hot water outlet HYG	E, mm	G1"/1308	G1"/1486	G1"/1581	G1"/1700
Air vent sleeve	F, mm	G1½"/1610	G1½"/1860	G1½"/2040	G1½"/2170
Boiler heat carrier inlet	G, mm	G1½"/1370	G1½"/1573	G1½"/1742	G1½"/1808
Sleeve	H, mm	G1½"/1270	G1½"/1389	G1½"/1521	G1½"/1653
Sensor sleeve	I, mm	G½"/1120	G½"/1290	G½"/1450	G½"/1525
Sleeve	J, mm	G1½"/990	G1½"/1071	G1½"/1172	G1½"/1305
Boiler heat carrier	K, mm	G1½"/880	G1½"/980	G1½"/1060	G1½"/1085
Sleeve	L, mm	G1"/770	G1"/820	G1"/880	G1"/895
Boiler heat carrier	M, mm	G1½"/620	G1½"/670	G1½"/730	G1½"/765
Sensor sleeve	N, mm	G½"/460	G½"/465	G½"/495	G½"/520
Sleeve	O, mm	G1"/250	G1"/310	G1"/310	G1"/375
Boiler heat carrier outlet	P, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235

4.2. HYG R – with one coil



		HYG R 500/20	HYG R 800/33	HYG R 1000/33	HYG R 1500/49
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	480/20	767/33	967/33	1451/49
Height H / Min. vertical clearance	mm	1610/1660	1860/1910	2010/2090	2170/2220
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	4,5	7,5	7,5	11
Lower heat exchanger coil S1					
Heat exchange surface	m^2	1.7	2.9	3.0	3.4
Coil capacity	L	10.5	17.9	18.5	21.0
Operating pressure/Max. coil temp.	bar/°C	16/110	16/110	16/110	16/110
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	-	ø200	ø200	ø200
Thermometer			option		
Electric heater			option		
Weight/insulation	Kg	140/12.3	179/16,4	212/ 18	343/23,2

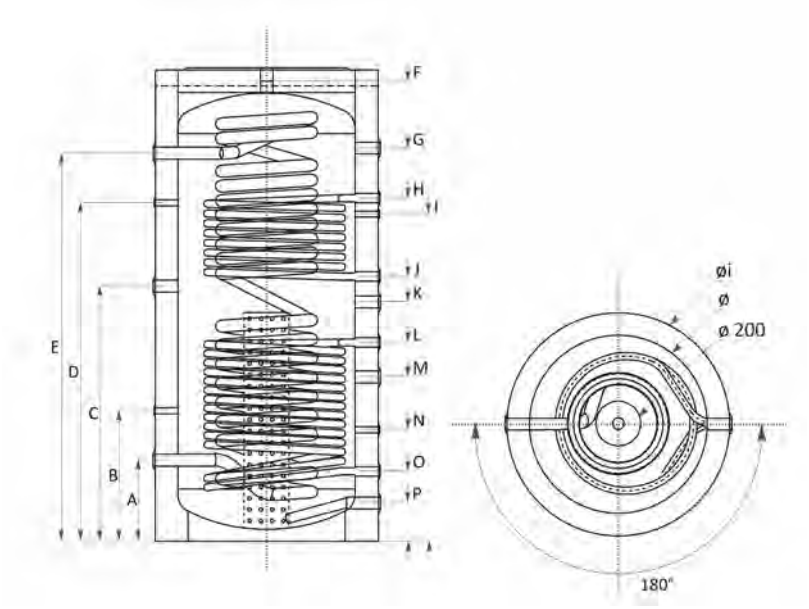


		HYG R 500/20	HYG R 800/33	HYG R 1000/33	HYG R 1500/49
Cold water inlet HYG	A, mm	G1"/275	G1"/330	G1"/360	G1"/392
Sensor sleeve	B, mm	G½"/410	G½"/570	G½"/580	G½"/875
Electric heating element (optional)	C, mm	G1½"/790	G1½"/920	G1½"/1130	G1½"/1130
Sensor sleeve	D, mm	G½"/1120	G½"/1290	G½"/1500	G½"/1500
Hot water outlet HYG	E, mm	G1"/1308	G1"/1486	G1"/1581	G1"/1700
Air vent sleeve	F, mm	G1½"/1610	G1½"/1860	G1½"/2040	G1½"/2170
Boiler heat carrier inlet	G, mm	G1½"/1370	G1½"/1573	G1½"/1742	G1½"/1808
Sleeve	H, mm	G1½"/1270	G1½"/1389	G1½"/1521	G1½"/1653
Sensor sleeve	I, mm	G½"/1120	G½"/1290	G½"/1450	G½"/1525
Sleeve	J, mm	G1½"/990	G1½"/1071	G1½"/1172	G1½"/1305
Boiler heat carrier	K, mm	G1½"/880	G1½"/980	G1½"/1060	G1½"/1085
Lower coil inlet S1/sleeve	L, mm	G1"/770	G1"/820	G1"/880	G1"/895
Boiler heat carrier	M, mm	G1½"/620	G1½"/670	G1½"/730	G1½"/765
Sensor sleeve	N, mm	G½"/460	G½"/465	G½"/495	G½"/520
Lower coil outlet S1/sleeve	O, mm	G1"/250	G1"/310	G1"/310	G1"/375
Boiler heat carrier outlet	P, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235

4.3. HYG R2 – with two coils



		HYG R2 500/20	HYG R2 800/33	HYG R2 1000/33	HYG R2 1500/49
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	480/20	767/33	967/33	1451/49
Height H / Min. vertical clearance	mm	1610/1660	1860/1910	2010/2090	2170/2220
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	4,5	7,5	7,5	11
Lower heat exchanger coil S1					
Heat exchange surface	m^2	1.7	2.9	3.0	3.4
Coil capacity	L	10.5	17.9	18.5	21.0
Upper heat exchanger coil S2					
Heat exchange surface	m^2	1.0	1.8	2.0	2.4
Coil capacity	L	6.2	11.1	12.3	14.8
Operating pressure/Max. coil temp.	bar/°C	16/110	16/110	16/110	16/110
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	-	ø200	ø200	ø200
Thermometer			option		
Electric heater			option		
Weight/insulation	Kg	151/12.3	203/16,4	238/ 18	375/23,2



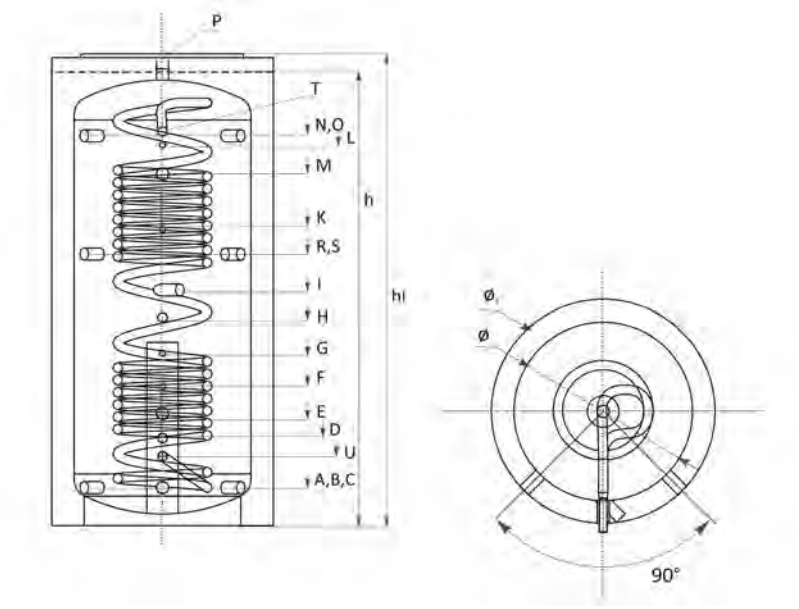
		HYG R2 500/20	HYG R2 800/33	HYG R2 1000/33	HYG R2 1500/49
Cold water inlet HYG	A, mm	G1"/275	G1"/330	G1"/360	G1"/392
Sensor sleeve	B, mm	G½"/410	G½"/570	G½"/580	G½"/875
Electric heating element (optional)	C, mm	G1½"/790	G1½"/920	G1½"/1130	G1½"/1130
Sensor sleeve	D, mm	G½"/1120	G½"/1290	G½"/1500	G½"/1500
Hot water outlet HYG	E, mm	G1"/1308	G1"/1486	G1"/1581	G1"/1700
Air vent sleeve	F, mm	G1½"/1610	G1½"/1860	G1½"/2040	G1½"/2170
Boiler heat carrier inlet	G, mm	G1½"/1370	G1½"/1573	G1½"/1742	G1½"/1808
Upper coil inlet S2/sleeve	H, mm	G1½"/1270	G1½"/1389	G1½"/1521	G1½"/1653
Sensor sleeve	I, mm	G½"/1120	G½"/1290	G½"/1450	G½"/1525
Upper coil outlet S2/sleeve	J, mm	G1½"/990	G1½"/1071	G1½"/1172	G1½"/1305
Boiler heat carrier	K, mm	G1½"/880	G1½"/980	G1½"/1060	G1½"/1085
Lower coil inlet S1/sleeve	L, mm	G1"/770	G1"/820	G1"/880	G1"/895
Boiler heat carrier	M, mm	G1½"/620	G1½"/670	G1½"/730	G1½"/765
Sensor sleeve	N, mm	G½"/460	G½"/465	G½"/495	G½"/520
Lower coil outlet S1/sleeve	O, mm	G1"/250	G1"/310	G1"/310	G1"/375
Boiler heat carrier outlet	P, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235

5. Technical parameters HYG-B series

5.1. HYG-B – without coil



		HYG B 500/27	HYG B 800/27	HYG B 1000/27	HYG B 1500/50
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	473/27	773/27	973/27	1450 /50
Height h / with insulation hi	mm	1700/1750	1840/1890	2040/2090	2170/2220
Min. vertical clearance	mm	1720	1865	2074	2262
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	6.10	6.10	6.10	11.5
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	ø140	ø140	ø140	ø140
Thermometer		option			
Electric heater		option			
Weight/insulation	Kg	135/12.3	165/16,4	175 / 18	290/23,2

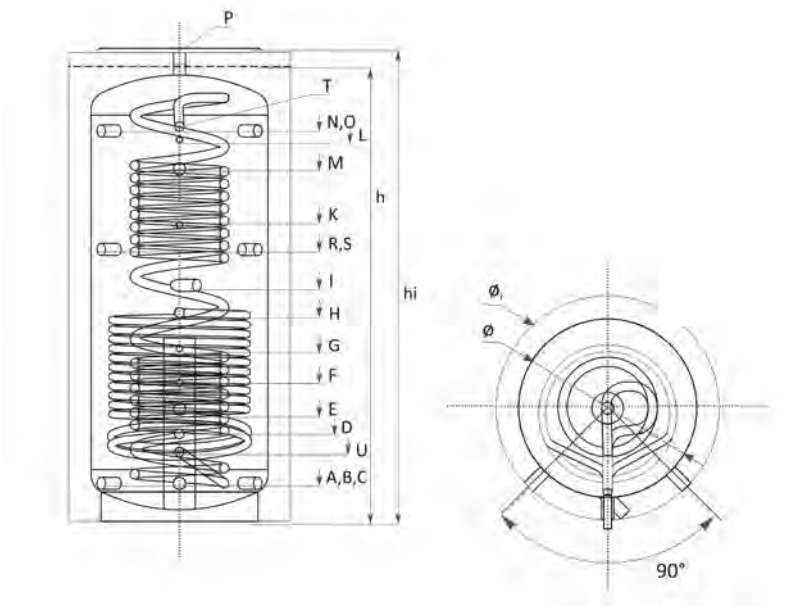


		HYG B 500/27	HYG B 800/27	HYG B 1000/27	HYG B 1500/50
Boiler heat carrier outlet	A, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	B, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	C, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Heat carrier outlet	D, mm	G1"/325	G1"/350	G1"/390	G1"/445
Boiler heat carrier	E, mm	G1½"/430	G1½"/470	G1½"/500	G1½"/690
Sensor sleeve	F, mm	G½"/540	G½"/590	G½"/620	G½"/800
Sensor sleeve	G, mm	G½"/650	G½"/710	G½"/770	G½"/920
Heat carrier intlet	H, mm	G1"/775	G1"/845	G1"/930	G1"/1045
Boiler heat carrier/Electric heating element	I, mm	G1½"/900	G1½"/930	G1½"/1050	G1½"/1280
Sensor sleeve	K, mm	G½"/1140	G½"/1160	G½"/1320	G½"/1520
Sensor sleeve	L, mm	G½"/1420	G½"/1520	G½"/1700	G½"/1790
Heat carrier intlet	M, mm	G1½"/1360	G1½"/1410	G1½"/1570	G1½"/1720
Boiler heat carrier inlet	N, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Boiler heat carrier inlet	O, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Air vent	P, mm	G1½"/1700	G1½"/1840	G1½"/2040	G1½"/2170
Boiler heat carrier	R, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Boiler heat carrier	S, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Hot water outlet HYG	T, mm	G1"/1480	G1"/1590	G1"/1760	G1"/1850
Cold water inlet HYG	U, mm	G1"/250	G1"/270	G1"/310	G1"/345

5.2. HYG BR – with one coil



		HYG BR 500/27	HYG BR 800/27	HYG BR 1000/27	HYG BR 1500/50
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	473/27	773/27	973/27	1450 /50
Height h / with insulation hi	mm	1700/1750	1840/1890	2040/2090	2170/2220
Min. vertical clearance	mm	1720	1865	2074	2262
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	6.10	6.10	6.10	11.5
Lower heat exchanger coil S1					
Heat exchange surface	m^2	1.7	2.4	2.48	3.4
Coil capacity	L	10.2	14.3	15.2	20.6
Operating pressure/Max. coil temp.	bar/°C	16/110	16/110	16/110	16/110
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	ø140	ø140	ø140	ø140
Thermometer				option	
Electric heater				option	
Weight/insulation	Kg	150/12,3	170/16,4	200/18	290/23,2

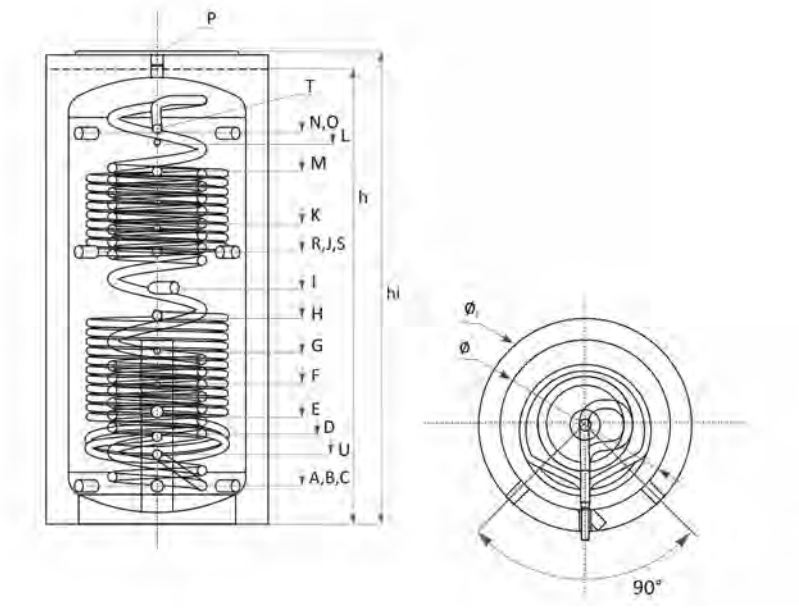


		HYG BR 500/27	HYG BR 800/27	HYG BR 1000/27	HYG BR 1500/50
Boiler heat carrier outlet	A, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	B, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	C, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Heat carrier outlet/Lower coil S1	D, mm	G1"/325	G1"/350	G1"/390	G1"/445
Boiler heat carrier	E, mm	G1½"/430	G1½"/470	G1½"/500	G1½"/690
Sensor sleeve	F, mm	G½"/540	G½"/590	G½"/620	G½"/800
Sensor sleeve	G, mm	G½"/650	G½"/710	G½"/770	G½"/920
Heat carrier intlet/ Lower coil S1	H, mm	G1"/775	G1"/845	G1"/930	G1"/1045
Boiler heat carrier/Electric heating element	I, mm	G1½"/900	G1½"/930	G1½"/1050	G1½"/1280
Sensor sleeve	K, mm	G½"/1140	G½"/1160	G½"/1320	G½"/1520
Sensor sleeve	L, mm	G½"/1420	G½"/1520	G½"/1700	G½"/1790
Heat carrier intlet	M, mm	G1½"/1360	G1½"/1410	G1½"/1570	G1½"/1720
Boiler heat carrier inlet	N, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Boiler heat carrier inlet	O, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Air vent	P, mm	G1½"/1700	G1½"/1840	G1½"/2040	G1½"/2170
Boiler heat carrier	R, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Boiler heat carrier	S, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Hot water outlet HYG	T, mm	G1"/1480	G1"/1590	G1"/1760	G1"/1850
Cold water inlet HYG	U, mm	G1"/250	G1"/270	G1"/310	G1"/345

5.3. HYG BR2 – with two coils



		HYG BR2 500/27	HYG BR2 800/27	HYG BR2 1000/27	HYG BR2 1500/50
Capacity	L	500	800	1000	1500
Buffer capacity/DHW coil capacity	L	473/27	773/27	973/27	1450 /50
Height h / with insulation hi	mm	1700/1750	1840/1890	2040/2090	2170/2220
Min. vertical clearance	mm	1720	1865	2074	2262
Diameter D /with insulation	mm	ø 650/850	ø 790/990	ø 790/990	ø 1000/1200
DHW tube surface	m^2	6.10	6.10	6.10	11.5
Lower heat exchanger coil S1					
Heat exchange surface	m^2	1.7	2.4	2.48	3.4
Coil capacity	L	10.2	14.3	15.2	20.6
Upper heat exchanger coil S2					
Heat exchange surface	m^2	1.0	1.8	1.71	2.0
Coil capacity	L	6.2	10.46	10.5	12.1
Operating pressure/Max. coil temp.	bar/°C	16/110	16/110	16/110	16/110
Operating pressure/Max. buffer temp.	bar/°C	3/95	3/95	3/95	3/95
Operating pressure/Max. DHW tube temp.	bar/°C	6/95	6/95	6/95	6/95
Continuous outflow 10/45 °C when the bufferis charged to 65°C	L/h	1080	1400	1840	2800
Continuous outflow 10/38 °C when the bufferis charged to 65°C	L/h	1350	1750	2300	3500
Recommended boiler size, connected to the buffer	kW	44	57	75	114
Single discharge capacity (up to 38 °C) when the buffer is charged to 65 °C	L	375	580	790	1150
ΔT temp. difference b/n buffer and DHW at flow rate30/40/50 l/min.		6/8/12	3,5/5/8	3,5/5/8	2/3/5
Water stratification unit	mm	ø140	ø140	ø140	ø140
Thermometer		option			
Electric heater		option			
Weight/insulation	Kg	160/12,3	200/16,4	230 / 18	360/23,2



		HYG BR2 500/27	HYG BR2 800/27	HYG BR2 1000/27	HYG BR2 1500/50
Boiler heat carrier outlet	A, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	B, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Boiler heat carrier outlet	C, mm	G1½"/150	G1½"/170	G1½"/170	G1½"/235
Heat carrier outlet/Lower coil S1	D, mm	G1"/325	G1"/350	G1"/390	G1"/445
Boiler heat carrier	E, mm	G1½"/430	G1½"/470	G1½"/500	G1½"/690
Sensor sleeve	F, mm	G½"/540	G½"/590	G½"/620	G½"/800
Sensor sleeve	G, mm	G½"/650	G½"/710	G½"/770	G½"/920
Heat carrier intlet/ Lower coil S1	H, mm	G1"/775	G1"/845	G1"/930	G1"/1045
Boiler heat carrier/Electric heating element	I, mm	G1½"/900	G1½"/930	G1½"/1050	G1½"/1280
Heat carrier outlet/ Upper coil S2	J, mm	360/23,2	G1"/1050	G1"/1210	G1"/1405
Sensor sleeve	K, mm	G½"/1140	G½"/1160	G½"/1320	G½"/1520
Sensor sleeve	L, mm	G½"/1420	G½"/1520	G½"/1700	G½"/1790
Heat carrier intlet/ Upper coil S2	M, mm	G1½"/1360	G1½"/1410	G1½"/1570	G1½"/1720
Boiler heat carrier inlet	N, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Boiler heat carrier inlet	O, mm	G1½"/1450	G1½"/1550	G1½"/1740	G1½"/1820
Air vent	P, mm	G1½"/1700	G1½"/1840	G1½"/2040	G1½"/2170
Boiler heat carrier	R, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Boiler heat carrier	S, mm	G1½"/1030	G1½"/1050	G1½"/1210	G1½"/1405
Hot water outlet HYG	T, mm	G1"/1480	G1"/1590	G1"/1760	G1"/1850
Cold water inlet HYG	U, mm	G1"/250	G1"/270	G1"/310	G1"/345

6. Transport and packaging

We recommend to transport the water tank to the installation site in its packaging placed on the pallet, and stretch foil.
During transport and installation, depending on the weight, appropriate safety equipment must be used in accordance with Directive 2006/42/EC.
When transporting items weighing more than 30 kg, the use of pallet jack, fork truck or other hoisting devices is a must.

Hygienic Combi Tanks can be with or without insulation. They are secured on a pallet packed with foil. Insulation, decorative cover and rosettes can be delivered separately.

Advantages:

- Easy transportation (takes less space at transportation).
- Easy conveyance to the place of installation.
- Easy and quick packing of water heaters with soft insulation. All necessary openings in the casing are made beforehand, and the installer has only to find them and take them out.
  The casing is fastened by a zipper at the assembly platform.

Pallet Dimensions	Capacity of Water tank, L			
	500	**800**	**1000**	**1500**
Without insulation, mm	650x650	790x790	790x790	1000x1000
With insulation, mm	900x900	1050x1050	1050x1050	1250x1250

7. WARRANTY

1) Manufacturing defects and materials guarantee

NES Ltd. expressly guarantees that the products it manufactures shall be free from defects in materials and workmanship which can prevent from normal operation under proper and normal use, installation and maintenance for the intended functions of the products, for a period set out in the warranty certificate of the respective water heater model you have bought. The warranty period begins from the date indicated in the purchase invoice. If a product or any component there of is determined to be defective in manufacture or materials, NES Ltd. will repair or replace the defective component or product

2) Exclusions and Limitations of Warranty Coverage

a) The customer can claim warranty during warranty period of respective product immediately after any defects have been determined, except for in case of noticeable defects at the moment of purchase, in which case the customer must make the claim at the shop immediately after noticing the defect as it is provided for in the general conditions of sale.

1) Accidents, installation on movable structures, negligence, improper care or nonconformity.
2) Failure to observe the installation, use and maintenance instructions set forth in the installation manual of respective product.
3) Improper installation and use as well as changes, especially if they are not made by authorized after-sale service personnel of NES Ltd.
4) Testing and operation pressures greater that values established by NES Ltd. and set forth in product manuals, or use of water with characteristic values exceeding:
- Dissolvable salts – 500 mg/l;
- Calcium carbonate – 200 mg/l;
- Free carbon dioxide – 50 mg/l;
- ph content – minimum 5 and maximum 12.

5) Freeze, flood, natural disasters or third party actions as well as any interventions into normal functioning conditions of water heaters and the control of NES Ltd.
The customer as well should monitor the anticorrosion system (magnesium anode). He should periodically check the magnesium anode and replace it depending on the geographic location at intervals depending on the type of water (soft of hard) of the region where the water heater is being used.

b) The warranty certificate is considered void for water heaters whose serial identification number has been modified, removed or blurred, or cannot be expressly attested.
c) Damages in the appearance of products shall not be considered as defects except for those ones which cause losses during operation or change technical characteristics of water heaters set forth in brochures.
d) NES Ltd. preserves the right, in case of replacement, to deliver another model of water heater in order to fulfill approved warranty claims when the original model is not being manufactured.

3) Claiming warranty

Every customer who has purchased a water heater from NES Ltd., and who has good reasons to lay a warranty claim, shall proceed as follows:
a) Immediately notify in writing:
   1) The installer, or the company that has sold the water heater to him, or
   2) The distributor firm, or
   3) The commercial representative of NES Ltd. in the region.

For this purpose the claimant shall fill out a claim form; the latter shall be accompanied by the document proving the purchase of the water heater (invoice) with the date of purchase in it.

b) After receiving the claim form, NES Ltd. considers it and makes decision whether the claim has grounds, and whether the defect is within the scope of the warranty set forth in this certificate for limited warranty; after which informs the customer as to its decision and the steps he shall do.
c) The return of a product cannot be done without written authorization issued by the Quality Department. The return procedure shall be according to RMA (Return Material Authorization).
d) If on customer's request, and when there is reason for urgency, the customer demands immediate replacement of the product he has claimed warranty for, before making the decision as to the claim, said request shall be accompanied by a Purchase requisition from the Commercial Department. After decision for satisfaction of the claim has been made, the Purchase requisition mentioned above will be annulled by issuing a receipt for returned goods; with this receipt the customer can purchase another product with the same price in case the claim has proved grounded.
e) NES Ltd. reserves the right to make in situ reports from the claims they have received for the purpose of checking every aspect that might be useful for better consideration of warranty claims; for this reason the customer shall not make any changes in installation conditions which are reasons for the claim without prior written consent of the Technical Department.

4. Limitation of liability

a) NES Ltd. is not liable before the customer, neither directly nor indirectly, for any non-fulfillment or delay at applying the warranty obligations which might originate from external pressure of other circumstances outside NES Ltd

b) The liability of NES Ltd. under this Warranty Certificate is limited to the abovementioned obligations and up to the sum in accordance with the purchase receipt of the product to be claimed; excluded is any liability for indirect damages such as loss of data at information applications, loss of production, thermal variations at the service, etc. which do not violate the applicable regulations of any country concerning product liability.

c) Abovementioned warranty limitations will be applied in any cases, and when they do not violate the regulations in any country concerning product liability. If this circumstance annuls some of preceding clauses, annulment will refer only to this clause, while the others will remain valid. In conclusion, excluded is application of any Regulation pointed out in this Warranty which violates the Law 23/July 10, 2003 and Directive 1999/44/EU concerning water heaters and their use on the territory of the EU.

d) Any other warranty right that is not mentioned in this Warranty Certificate is excluded