



FLEXIHEAT UK LTD

Flexible Heating & Dehumidification Solutions

01202 822221

www.flexiheatuk.com

Ecocond Condensing Boiler for Oil or Gas

The **ECOCOND** boiler is a product of high specifications, extensive research and long accumulated experience. The design and its whole construction are a combination of knowledge and experience on the steel boilers. **ECOCOND** comes up to the newest concepts of boiler manufacturing.

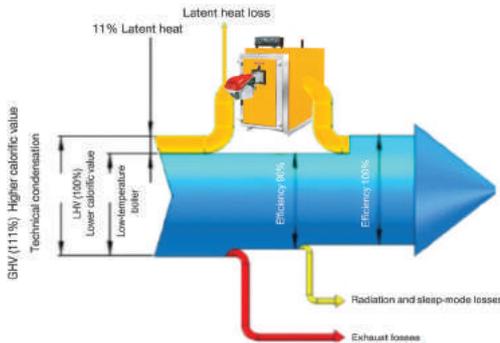
OPERATING PRINCIPLE

New generation condensing boilers are also called hi-tech boilers, because they have been designed and produced thanks to a great technological impulse.

Condensing boilers' principle is based on the exploiting of the heat from exhaust gases through technical solutions taking residual heat and transferring it to cold water entering the boiler.

The process seems quite easy, however there is more heat to be exploited: emissions latent heat in the vapor produced during combustion, which is 11%. With traditional boilers, potential energy on emission gases cannot be recovered and is dismissed in the environment, because the emissions are ejected at temperatures higher than 120°C; on the contrary the condensing boiler principle allows heat recovery from emissions, by cooling them below their dew point, and exhausting them below 65°C. In this way it is possible to recover the latent heat by the heat exchanger within the boiler., dissipating colder emissions in the atmosphere (50-60°C compared to 120-180°C in a current non-condensing boiler) thus respecting the environment. Thanks to Lower Heating Value (LHV) definition which does not include latent heat, so that condensing boiler efficiency exceeds 100% and they have about 25% higher annual efficiency than traditional boilers.

Heat recovery from exhaust condensation



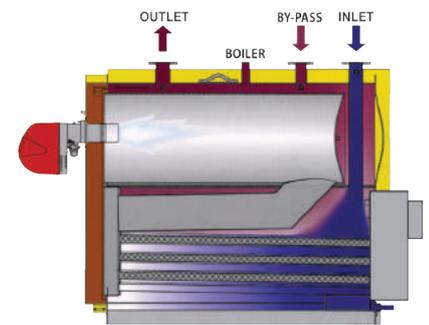
POWER RANGE

The new boiler serie **ECOCOND** with its 30 models covers a power range from 23 to 2.100 KW, in order to choose the most suitable boiler for the different requirements of the heating system.

APPLICATIONS

According to DIN 4751 **ECOCOND** boiler is intended for water heating (up to 105°C), for central heating installations, as well as for other similar use. The maximum operating pressure allowed is 5 bars.

There is also **PRESS** boiler serie with working pressure up to 8 bar (after demand).



ADVANTAGES

- Firm construction.
- Reliability.
- Energy savings.
- Friendly to the environment.
- Perfect design.
- Easy maintenance.
- Rich heating surface.
- Three passes of burned gases.
- Uniform thermal charge.
- Long lifespan without problems.

CONSTRUCTION MATERIALS

ECOCOND

- Sheet metal: AISI 316 Stainless Steel
- Seamless tubes: AISI 316, EN 10204
- Gas turbolators: INOX AISI 316
- Door: heat - resistant material PLICAST - LW - MIX - 124 (PLIBRICO)



EASY MAINTENANCE

The door of ECOCOND boiler opens to the left or to the right, so that there is easy access to the combustion chamber for cleaning and is also equipped with a PYREX covered hole for easy visual inspection of the flame during operation. The smoke chamber cover is fastened with screws and has a special cleaning opening, which also acts as expansion opening.

CONTROL PANEL

ECOCOND boilers are accompanied by a control panel, which is equipped with all the necessary instruments-functions.



The control panel includes: general switch, safety thermostat, burner thermostat, water pump thermostat, thermometer and operation lamps.

There is also provision for additional installation of all automatizations of a modern boiler facility for automatic function and energy saving.

INSULATION

The boilers carry a heavy insulation of 80 mm of aluminium covered glass wool. There is also insulation on the boiler's door and smoke chamber in order to minimize the thermal radiation losses.

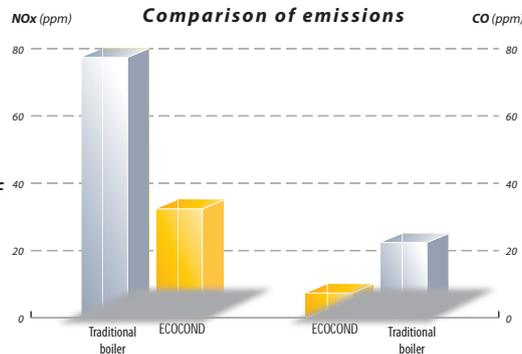
FUEL

ECOCOND boilers operate with heating oil, in accordance to DIN 51603, with natural gas, or liquid gas according to specifications DVGW of Germany and DIN 4788.

SPECIFICATIONS

Our boilers are manufactured following the German specification DIN 4702. The manufacturing process is based on the European Norm DIN EN ISO 9001, as to the equipment, the manufacture and the control of subassemblies, as well as to specialized personnel and the design.

ECOCOND Boilers have the quality mark CE.



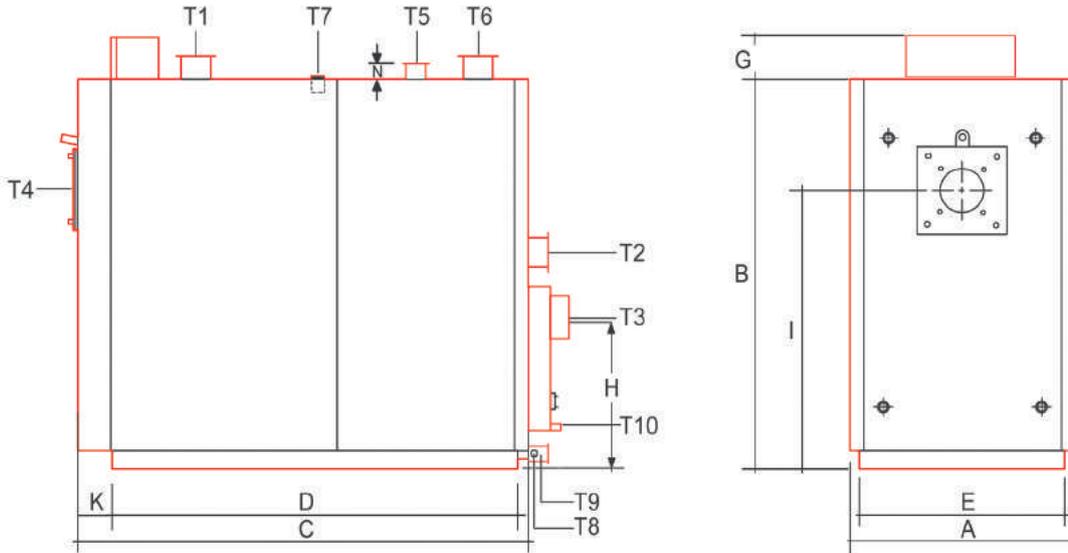
Ecocond Condensing Boiler for Oil or Gas

Dimension Table

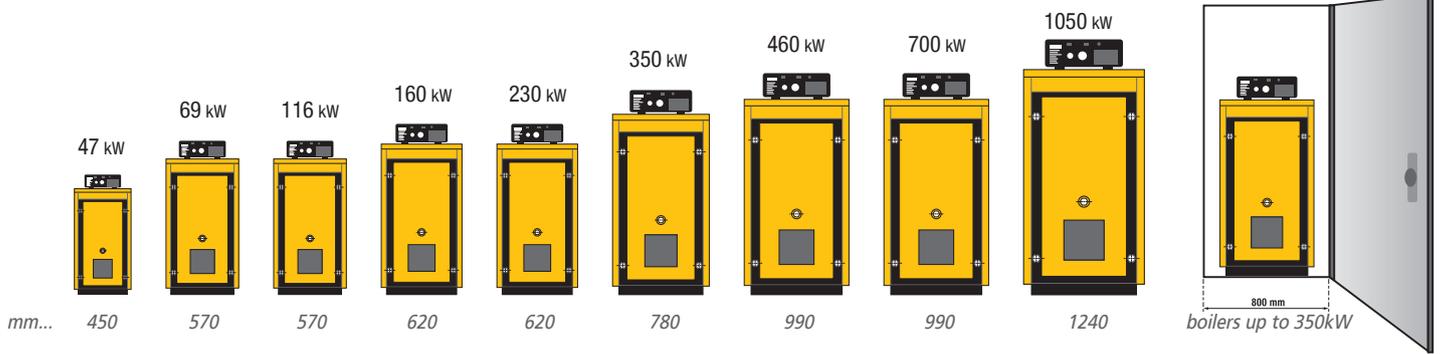
Boiler Type	kW	Mcal/h	A	B	C	D	E	F	G	H	I	K	L	M	N	T1-T2	T3	T4	T5	T6	T7	T8	T9	T10
ECOCOND 18	18,0	15,5	500	980	770	480	450	-	163	330	555	150	490	-	-	1/4"	139	106	1/4"	1"	1/2"	1/2"	2"	1/2"
ECOCOND 23	23,2	20	500	980	870	580	450	-	163	330	555	150	490	-	-	1/4"	139	106	1/4"	1"	1/2"	1/2"	2"	1/2"
ECOCOND 35	34,9	30	500	980	970	680	450	-	163	330	555	150	490	-	-	1/4"	139	132	1/4"	1"	1/2"	1/2"	2"	1/2"
ECOCOND 47	46,5	40	500	980	1070	780	450	-	163	330	555	150	490	-	-	1/2"	139	132	1/4"	1"	1/2"	1/2"	2"	1/2"
ECOCOND 58	58,1	50	620	1080	1010	660	570	250	163	300	585	150	530	270	120	1/2"	159	132	1"	1/4"	1/2"	1/2"	2 1/2"	1/2"
ECOCOND 69	68,8	60	620	1080	1110	760	570	350	163	300	585	150	530	270	120	1/2"	159	132	1"	1/4"	1/2"	1/2"	2 1/2"	1/2"
ECOCOND 81	81,4	70	620	1080	1210	860	570	450	163	300	585	150	530	270	120	1/2"	159	132	1"	1/4"	1/2"	1/2"	2 1/2"	1/2"
ECOCOND 93	93,0	80	620	1080	1310	960	570	550	163	300	585	150	530	270	120	2"	159	132	1"	1/4"	1/2"	1/2"	2 1/2"	1/2"
ECOCOND 116	116,3	100	690	1200	1350	965	620	550	163	270	660	170	580	270	120	2"	193	151	1/4"	1 1/2"	1/2"	1/2"	3"	1/4"
ECOCOND 140	139,5	120	690	1200	1450	1065	620	650	163	270	660	170	580	270	120	2"	193	151	1/4"	1 1/2"	1/2"	1/2"	3"	1/4"
ECOCOND 160	162,8	140	690	1200	1550	1165	620	750	163	270	660	170	580	270	120	2"	193	151	1/4"	1 1/2"	1/2"	1/2"	3"	1/4"
ECOCOND 190	186,0	160	690	1200	1700	1315	620	900	163	270	660	170	580	270	120	2 1/2"	193	151	1/4"	1 1/2"	1/2"	1/2"	3"	1/4"
ECOCOND 210	209,3	180	690	1200	1800	1415	620	1000	163	270	660	170	580	270	120	2 1/2"	193	151	1/4"	1 1/2"	1/2"	1/2"	3"	1/4"
ECOCOND 230	233	200	850	1400	1600	1010	780	680	163	400	760	250	680	270	140	2 1/2"	244	185	1/4"	2"	1/2"	1/4"	DN100	1/4"
ECOCOND 260	256	220	850	1400	1850	1260	780	930	163	400	760	250	680	270	140	2 1/2"	244	185	1/4"	2"	1/2"	1/4"	DN100	1/4"
ECOCOND 290	291	250	850	1400	2100	1510	780	1180	163	400	760	250	680	270	140	2 1/2"	293	185	1/4"	2"	1/2"	1/4"	DN100	1/4"
ECOCOND 350	349	300	850	1400	2350	1760	780	1430	163	400	760	250	680	270	140	3"	293	185	1/4"	2"	1/2"	1/4"	DN100	1/4"
ECOCOND 400	407	350	1060	1800	2050	1270	990	750	163	550	1050	330	850	330	160	3"	343	260	1/2"	3"	1/2"	1/4"	DN125	1"
ECOCOND 460	465	400	1060	1800	2300	1520	990	1000	163	550	1050	330	850	330	160	DN100	343	260	1/2"	3"	1/2"	1/4"	DN125	1"
ECOCOND 520	523	450	1060	1800	2300	1520	990	1000	163	550	1050	330	850	330	160	DN100	343	260	1/2"	3"	1/2"	1/4"	DN125	1"
ECOCOND 580	581	500	1060	1800	2550	1770	990	1250	163	550	1050	330	850	330	160	DN100	343	260	1/2"	3"	1/2"	1/4"	DN125	1"
ECOCOND 700	698	600	1060	1800	2800	2020	990	1500	163	550	1050	330	850	330	160	DN100	343	260	DN65	3"	1/2"	1/4"	DN125	1"
ECOCOND 800	814	700	1060	1800	3050	2270	990	1750	163	550	1050	330	850	330	160	DN125	343	260	DN65	3"	1/2"	1/4"	DN125	1"
ECOCOND 930	930	800	1330	2100	2850	1770	1240	1050	163	600	1140	400	980	400	160	DN125	395	340	DN80	4"	1/2"	1/4"	DN150	1"
ECOCOND 1050	1047	900	1330	2100	2850	1770	1240	1050	163	600	1140	400	980	400	160	DN125	395	340	DN80	4"	1/2"	1/4"	DN150	1"
ECOCOND 1160	1163	1000	1330	2100	3100	2020	1240	1300	163	600	1140	400	980	400	160	DN125	483	340	DN80	4"	1/2"	1/4"	DN150	1"
ECOCOND 1500	1453	1300	1330	2100	3600	2520	1240	1800	163	600	1140	400	980	400	160	DN150	483	340	DN80	4"	1/2"	1/4"	DN150	1"
ECOCOND 1745	1745	1500	1330	2100	3850	2770	1240	2050	163	600	1140	400	980	400	160	DN150	483	340	DN100	4"	1/2"	1/4"	DN150	1"
ECOCOND 1919	1919	1650	1330	2100	4100	3020	1240	2300	163	600	1140	400	980	400	160	DN150	483	340	DN100	4"	1/2"	1/4"	DN150	1"
ECOCOND 2100	2093	1800	1690	2500	3700	2520	1780	1900	163	750	1250	400	1170	400	160	DN150	483	340	DN100	4"	1/2"	1/4"	DN150	1"

* The above dimensions are indicative and it is possible that they change in the future without warning, if new improvements require it.

series ECOCOND



Boilers width ECOCOND (without covers)



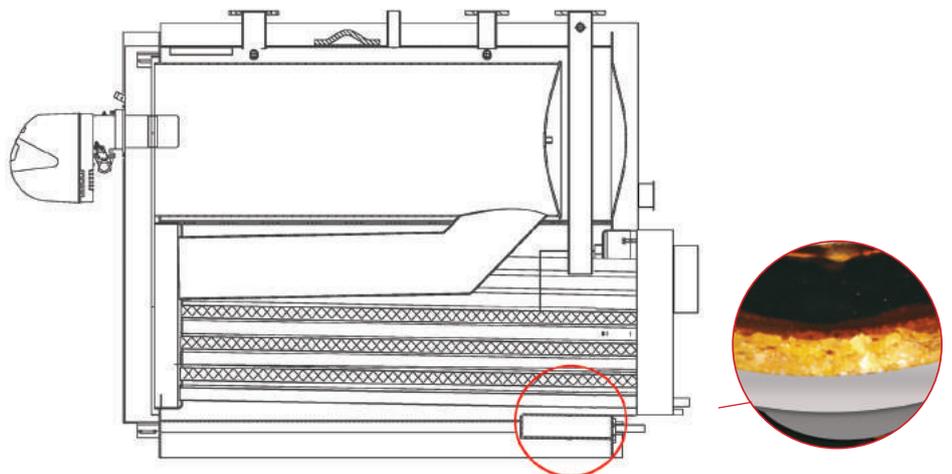
Collection zone

In the lower back part of the boiler, there is a zone that allows the collection of the impurities that is gathered in the installation.

There is a flanged opening that permits the inspection and access for examination of the interior and for its cleaning.

However, this opening must only be used when there is the need for emergency intervention.

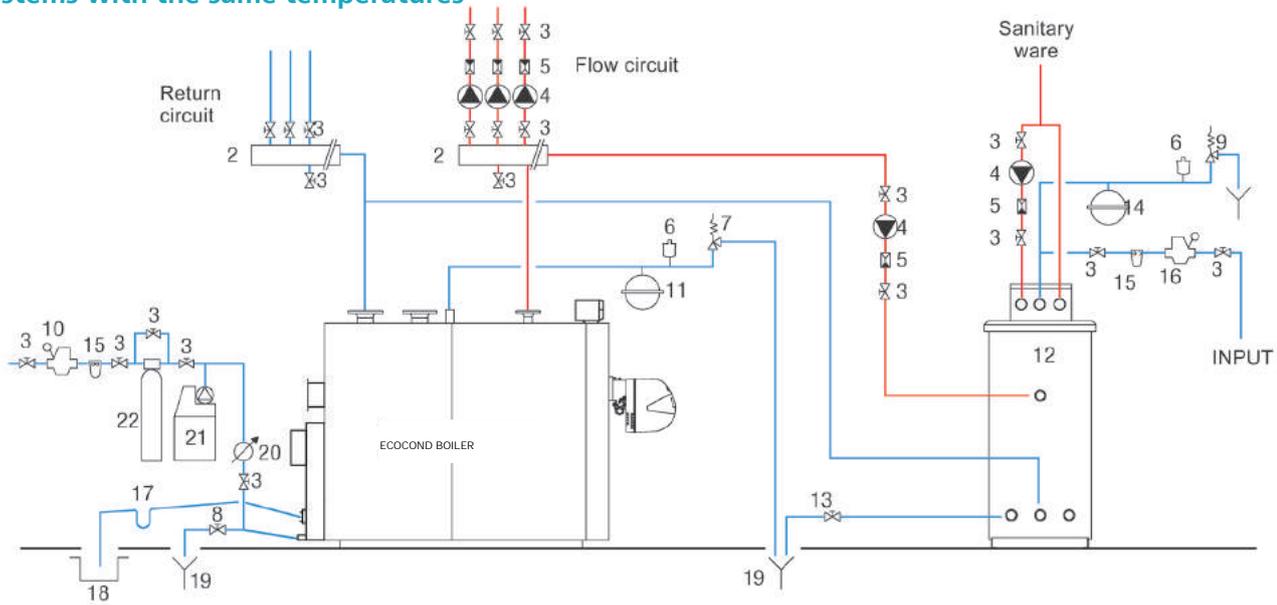
In the drawing beside, you can see the position, the shape and an example of applied inspection in a test installation.



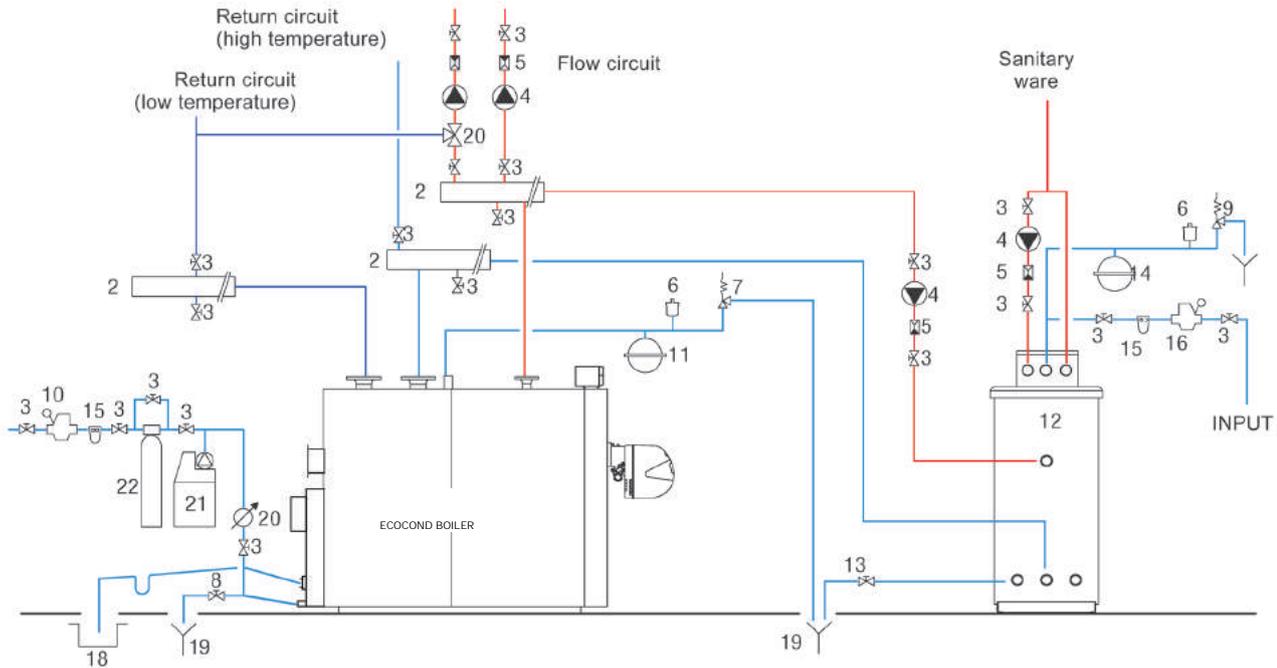
series ECOCOND

Boiler type	Nominal power		Power Range	Back pressure	Combustion chamber volume	Heated surface	Internal pressure fall	Water capacity	Weight	Max. working pressure	Condensation production
	kW	Mcal/h	Mcal/h	Mm H ₂ O	lit	m ²	(Δt-15°C) mmH ₂ O	lit	kg	bar	lit/h
ECOCOND 18	18,0	15,5	10 - 16	3 - 4	32	2,0	25	55	165	4	5,0
ECOCOND 23	23,2	20	15 - 20	3 - 4	40	2,4	30	65	182	4	6,1
ECOCOND 35	34,9	30	20 - 30	5 - 7	48	2,8	35	75	197	4	7,2
ECOCOND 47	46,5	40	30 - 40	5 - 7	56	3,2	40	84	213	4	8,0
ECOCOND 58	58,1	50	40 - 50	6 - 10	52	3,7	50	102	246	4	9,1
ECOCOND 69	68,8	60	50 - 60	6 - 10	65	4,1	60	114	275	4	10,4
ECOCOND 81	81,4	70	60 - 70	7 - 12	78	4,5	70	126	308	4	11,2
ECOCOND 93	93,0	80	70 - 80	7 - 12	91	5,0	80	144	329	4	12,3
ECOCOND 116	116,3	100	80 - 100	9 - 16	144	5,4	90	216	422	4	14,2
ECOCOND 140	139,5	120	100 - 120	9 - 16	161	6,0	100	242	454	4	17,1
ECOCOND 160	162,8	140	120 - 140	11 - 20	174	6,7	120	270	493	4	19,5
ECOCOND 190	186,0	160	140 - 160	11 - 20	205	7,6	130	295	519	4	23,4
ECOCOND 210	209,3	180	160 - 180	14 - 24	218	8,5	140	312	540	4	26,2
ECOCOND 230	233	200	180 - 200	16 - 26	206	10,0	150	373	676	4	27,9
ECOCOND 260	256	220	200 - 220	20 - 30	263	12,1	170	441	746	4	29,8
ECOCOND 290	291	250	220 - 250	25 - 35	320	14,2	190	616	820	4	32,7
ECOCOND 350	349	300	250 - 300	25 - 35	370	16,2	210	684	890	4	40,6
ECOCOND 400	407	350	300 - 350	30 - 40	446	19,1	230	648	1260	5	45,2
ECOCOND 460	465	400	350 - 400	30 - 40	518	22,2	250	699	1330	5	51,9
ECOCOND 520	523	450	400 - 450	35 - 45	518	25,1	270	746	1420	5	62,1
ECOCOND 580	581	500	450 - 500	35 - 45	555	28,3	290	805	1550	5	72,8
ECOCOND 700	698	600	500 - 600	40 - 50	665	33,0	310	851	1710	5	84,4
ECOCOND 800	814	700	600 - 700	40 - 50	775	38,2	330	897	1840	5	87,5
ECOCOND 930	930	800	700 - 800	50 - 60	986	42,5	360	1260	2440	5	98,6
ECOCOND 1050	1047	900	800 - 900	50 - 60	986	45,4	390	1410	2590	5	114,2
ECOCOND 1160	1163	1000	900 - 1000	60 - 70	1182	51,0	420	1570	2710	5	128,3
ECOCOND 1500	1453	1300	1000 - 1300	60 - 70	1360	58,1	450	1720	2940	5	163,0
ECOCOND 1750	1745	1500	1300 - 1500	70 - 80	1585	64,2	470	1890	3180	5	188,0
ECOCOND 1900	1919	1650	1500 - 1650	70 - 80	1810	69,5	490	2080	3420	5	203,0
ECOCOND 2100	2093	1800	1650 - 1800	70 - 80	2185	76,3	510	2640	4470	5	235,0

Systems with the same temperatures



Systems with different temperatures



- 1 Boiler
- 2 Collectors system
- 3 Valves
- 4 Circuit system
- 5 Check Valves
- 6 Automatic vent valve
- 7 Safety valve for boiler
- 8 Boiler drain cock

- 9 Safety valve for tank
- 10 Loading system
- 11 Expansion vessel
- 12 Remote tank (BSS)
- 13 Boiler drain valve
- 14 Expansion vessel
- 15 Descaling filter

- 16 Pressure reducer
- 17 Siphon
- 18 Condensate drainage
- 19 Discharge
- 20 Valve with servomotor
- 21 Counter feedwater / reintegration

Schedule of necessary actions for installations with high hardness of water

- with thermal power <350kW and hardness of water >35°fr
- with thermal power >350kW and hardness of water >15°fr
- with power <350kW the use of filter is recommended
- with power >350kW the use of filter is obligatory

