

PRODUCT CATALOGUE



01 | 2019

 icicaldaie.com







HUMAN TECHNOLOGY

Specialists in excellent solutions

Specialists in the design and production of complete high-tech thermal systems.

Our extensive experience has allowed us to develop a range of highly qualified services capable of meeting any requirements in terms of system management, monitoring and maintenance.

Our extensive experience has allowed us to develop a range of highly qualified services capable of meeting any requirements in terms of system management, monitoring and maintenance.



icicaldaie.com

THE STRENGTH OF ICI CALDAIE

ICI Caldaie is a young and dynamic company, characterised by an indepth knowledge in the industrial field, great production capacity, customer support in the design phase and extreme flexibility in terms of design and production of non-standard boilers, entirely customised based on the customer's specific needs.

Complete system Technical support and constultancy

Each non-standard project is developed by our Technical Department Engineers, and our cutting-edge Research and Development laboratory is entrusted with the development of new products compliant with the increasingly stringent European standards in terms of fuel consumption and emissions. All models produced by ICI Caldaie bear the CE mark and for many of them we have obtained different national certifications for export to Countries that require specific mechanical and hydraulic tests like the ASME - American Society for Mechanical Engineers - certificates.

The international success is the result of high quality standards. ICI Caldaie has obtained international product quality certifications that allow it to produce and distribute its boilers all over the world with top quality and safety features as required by the relevant specific regulations.



CERTIFIED INNOVATION

The awarded certifications are an acknowledgement of our commitment to continual improvement proving the creation, application and maintenance of a Production, Management and Organisation System compliant with international regulations introduced to improve and standardise the internal processes as well as to enhance the effectiveness of the service to customers, thus increasing their satisfaction.

Continued Customer satisfaction is a mark of the company's continual progress

ICI Caldaie has a strong quality culture, based around continual improvement resulting in obtaining system and product certifications such as ISO 9001 certification, CE certification and marks, the construction according to Directives on gas equipment and pressurised tanks, and by several national certifications on the export to Countries that require specific mechanical and hydraulic tests, such as the ASME - American Society for Mechanical Engineers - certificates.

Beside these certifications, the company policy of ICI Caldaie S.p.A. sets further objectives in terms of low environment impact and workers' health and safety. This on-going improvement philosophy has brought ICI Caldaie S.p.A. to obtain the environment certification according to the ISO 14001 standard and the certification on the workers' health and safety as per standard BS OHSAS 18001 (Occupational Health and Safety Assessment Series). ICI Caldaie believes that meeting the Customer needs is essential for the company's continual progress.



ISO 9001 QUALITY CERTIFICATION



OHSAS 18001 HEALTH AND SAFETY CERTIFICATION



ISO 14001 ENVIRONMENTAL CERTIFICATION






COMMERCIAL AREA

With our experience ICI Caldaie S.p.A. Specialised technicians will support you from the initial study to the system sizing or renewal up to the test and monitoring activities of the plant room.

Complete system Technical support and constutancy

We have a presence in countries all around the world, with headquarters and representative offices in Russia, Belarus, Kazakhstan, Romania, Great Britain, USA, China with products certified according to the specific local trade & technical regulations.

-  Commercial subsidiary
-  Representative offices
-  Official distributors

 **ITALY**
Head Quarter

 **U.S.A.**
Representative offices

 **GREAT BRITAIN**
Commercial subsidiary

 **RUSSIA**
Commercial subsidiary

 **ROMANIA**
Commercial subsidiary





The international success is the result of high quality standards. ICI Caldaie has obtained international product quality certifications that allow it to produce and distribute its boilers all over the world with top quality and safety features as required by the relevant specific regulations.

Product certifications



EUROPE



U.S.A.



RUSSIA
BELARUS
KAZAKHSTAN



CHINA



UKRAINE



BELARUS

Representative offices



CHINA

Representative offices



KAZAKHSTAN

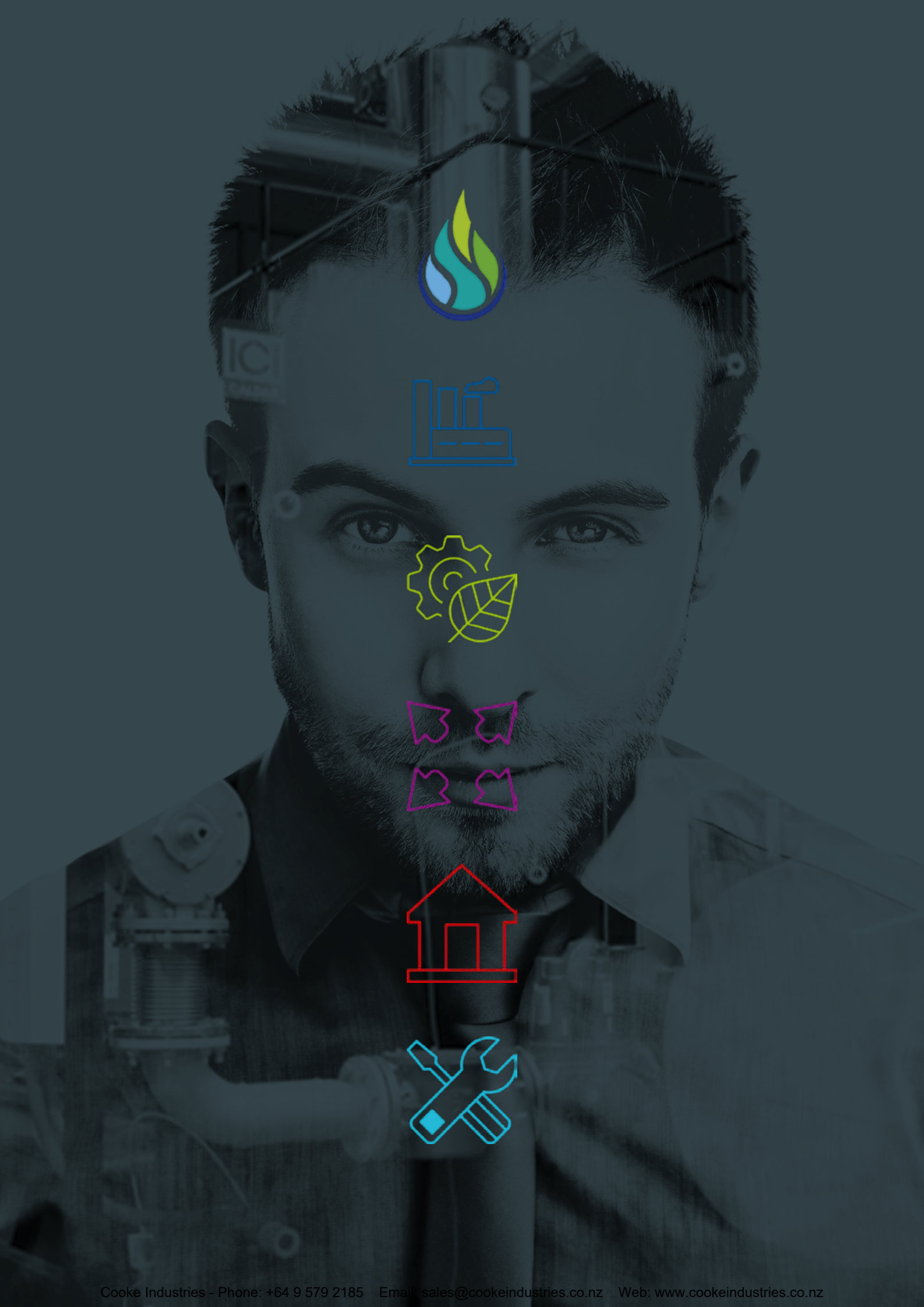
Commercial subsidiary



UKRAINE

Representative offices





HOT WATER

Fire tube hot water boilers manufactured as either three-pass or reverse flame type, both with a characteristically high water volume.

These boilers are designed for use in industrial applications such as remote heating systems and large heating systems for hospitals, airports, malls and other types of residential facilities.

Our range includes boilers with power generation rates of between 2,500 and 20,000 kW.




REX



DESCRIPTION






Reverse flame fire tube heat boilers. Cylindrical furnace completely closed on the rear side by a convex bottom supported by a fully submerged stub. It can be used with forced draft burners for the operation on liquid or gaseous fuels. Designed for the use in systems with water temperature between 60 and 100°C.

FEATURES

-  **Design pressure: 6 bar**
-  **Heat output: 4000 ÷ 6000 kW**
-  **Efficiency: > 92,0 %**

Upon request it is possible to have a maximum design pressure of 25 bar - maximum heat output 6000 kW

ADVANTAGES

-  **Advanced management technology**
The boiler can be equipped with programmable logic technology that allows complete compatibility with any data acquisition system, also allowing the adjustment of parameters through the display.
-  **Efficiency at all costs**
Integrated solutions for increased performance and efficiency through flue gas heat recovery fully integrated into the structure of the boiler.
-  **Easy, fast and safe installation**
The installation is very easy: you just need to connect the system to the electric, hydraulic, steam and discharge lines.
-  **Maximum operating flexibility**
Thanks to the very high water content and the very high thermal inertia, the boiler is suitable for any system solution, even in the most difficult operating conditions.
-  **Maximum security**
The generator has been designed in accordance with the strictest international safety regulations in force.

Reverse flame boiler

REX

Design pressure: 6 bar
 Heat output: 4000 ÷ 6000 kW
 Efficiency: > 92,0 %

REX F



Design pressure: 6 bar
 Heat output: 4000 ÷ 6000 kW
 Efficiency: > 95,0 %



Provided with Fin-e® efficiency improvement system.
 This version allows the use of **only gaseous fuels**.

AVAILABLE CERTIFICATIONS



RECOMMENDED TECHNOLOGIES



MAIN APPLICATIONS

- + Commercial facilities
- + Hospitals
- + District heating
- + Swimming pools and water parks
- + Residential buildings
- + Industrial heating systems
- + Sports centers

TECHNICAL DATA

Model	Heat output at 70°C	Flow thermal	100% efficiency at 70°C	30% efficiency at 70°C	Flue gas pressure drop	Hydraulic pressure drop	H2O volume	Total weight
REX	kW	kW	%	%	mbar	mbar	lt	kg
400	4000	4333	92,31	91,80	9,0	98	4450	7420
450	4500	4865	92,50	91,90	10,0	124	4900	7920
500	5000	5402	92,56	91,90	10,0	63	6200	9530
600	6000	6480	92,59	91,90	12,0	91	6900	11330

Model	Heat output at 70°C	Flow thermal	100% efficiency at 70°C	30% efficiency at 70°C	Flue gas pressure drop	Hydraulic pressure drop	H2O volume	Total weight
REX F	kW	kW	%	%	mbar	mbar	lt	kg
400	4000	4195	95,35	95,45	11,0	98	4450	7540
450	4500	4720	95,34	95,50	11,0	124	4900	8040
500	5000	5245	95,33	95,46	11,0	63	6200	9670
600	6000	6295	95,31	95,48	12,0	91	6900	11480

STEAM

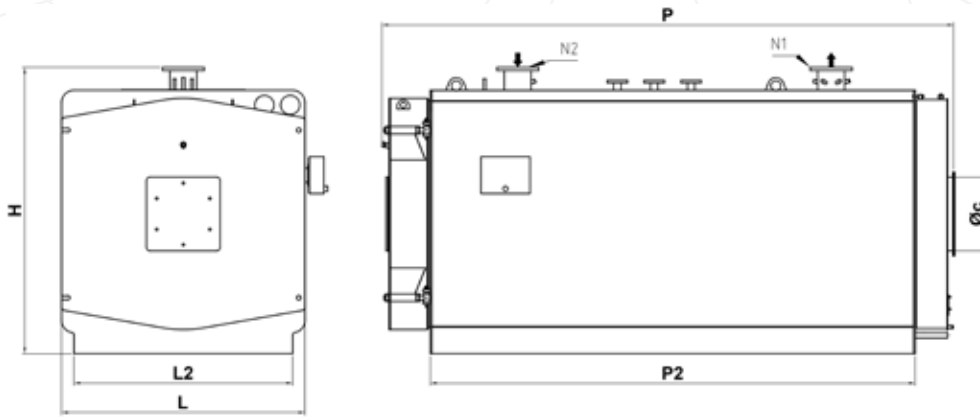
SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS



DIMENSIONS

Model	H	L	L2	P	P2	ØC	N1	N2
REX	mm	mm	mm	mm	mm	mm	DN/in	DN/in
400	2326	1980	1780	4310	3596	600	200	200
450	2326	1980	1780	4660	3946	600	200	200
500	2529	2180	1980	4729	3948	650	250	250
600	2529	2180	1980	5261	4488	650	250	250

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Bottom discharge unit including:

Shut-off globe valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The safety thermostat with manual reset (110°C) is INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code	
	REX	REX EXP
REX 400	83819010	83819012
REX 450	83820010	83820012
REX 500	83821010	83821012
REX 600	83822010	83822012

Model	Code	
	REX F	REX F EXP
REX F 400	83819210	83819212
REX F 450	83820210	83820212
REX F 500	83821210	83821212
REX F 600	83822210	83822212

ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	REX	
		REX	REX F
QATRXETERM01	Boiler management control panel	■	■
QATRXETERM02	Boiler management control panel	■	■
QCTETERM	Eterm Easy manager panel	■	■

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS



DESCRIPTION

The TNX range includes boilers with three flue gas passes, wet back and automatic operation, suitable for the operation on liquid or gaseous fuels. Designed for large heating systems with power requirements between 3000 and 20000 kW and operating temperature between 60 and 100°C. The boilers are designed for a maximum safety temperature of 110°C.

ADVANTAGES

- Maximum operating flexibility**
Thanks to the very high water content and the very high thermal inertia, the boiler is suitable for any system solution, even in the most difficult operating conditions.
- Efficiency at all costs**
Integrated solutions for increased performance and efficiency through flue gas heat recovery fully integrated into the structure of the boiler.
- Configurable to specific requirements**
A wide range of optional accessories are available to customize the product to meet specific requirements.

FEATURES

- Design pressure: 6 bar**
- Heat output: 3000 ÷ 20000 kW**
- Efficiency: > 92,0 %**

Upon request it is possible to have a maximum design pressure of 25 bar - maximum heat output 25000 kW

- High efficiency and large exchange surfaces**
Extremely high energy efficiency thanks to the large exchange surfaces allowing top efficiency values under all operating conditions.
- Maximum security**
The generator has been designed in accordance with the strictest international safety regulations in force.
- Reliability and durability**
Maximum reliability and durability guaranteed through design with low surface heat losses.

Three-pass boiler

MODELS



TNX



TNX EN

AVAILABLE CERTIFICATIONS



RECOMMENDED TECHNOLOGIES



MAIN APPLICATIONS

- + Hospitals
- + Commercial facilities
- + Accommodation facilities
- + District heating
- + Industrial heating systems
- + Sports centers

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

TNX

The TNX model is designed for large heating systems with power between 3000 and 7000 kW and operating temperature between 60 and 100°C.



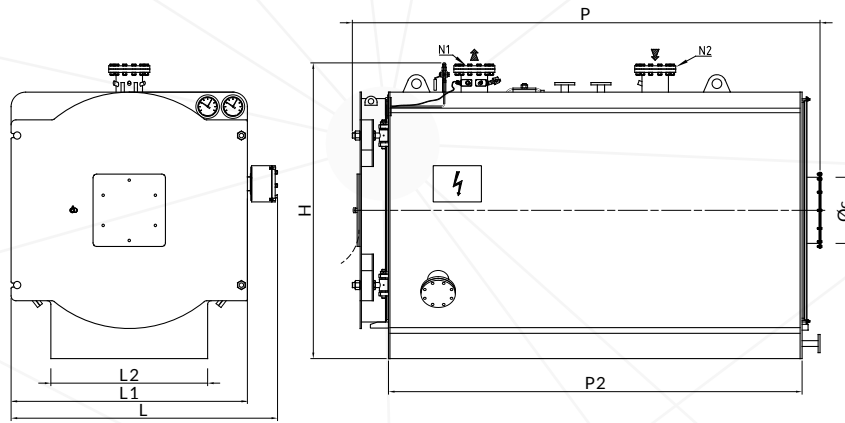
Design pressure: 6 bar

Heat output: 3000 ÷ 7000 kW

Efficiency: 92,0 %

TECHNICAL DATA

Model	Heat output	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNX	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
3000	3000	3261	92,00	55	4496	13,5	333,8	274,9	289,1	6300
3500	3500	3803	92,00	75	5746	16,0	389,4	320,7	337,2	6950
4000	4100	4457	92,00	103	6441	12,0	456,3	375,8	395,2	8200
5000	5000	5435	92,00	63	7335	14,0	556,4	458,2	481,9	8970
6000	6000	6522	92,00	91	9088	12,0	667,7	549,9	578,2	11280
7000	7000	7609	92,00	123	10066	14,0	779,0	641,6	674,6	12160



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNX	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
3000	2460	2200	1960	1300	3879	3430	550	200	200
3500	2460	2200	1960	1300	4379	3930	550	200	200
4000	2700	2410	2170	1400	4379	3930	600	200	200
5000	2700	2410	2170	1400	4879	4430	600	250	250
6000	2820	2560	2320	1600	5389	4930	700	250	250
7000	2820	2560	2320	1600	5889	5430	700	250	250

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Bottom discharge unit including:

Shut-off globe valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The safety thermostat with manual reset (110°C) is INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNX 3000	83473000
TNX 3500	83473500
TNX 4000	83474000
TNX 5000	83475000
TNX 6000	83476000
TNX 7000	83477000

TNX EN

The TNX EN model is designed for large heating systems with power between 8000 and 20000 kW and operating temperature between 60 and 100°C.



Design pressure: 6 bar

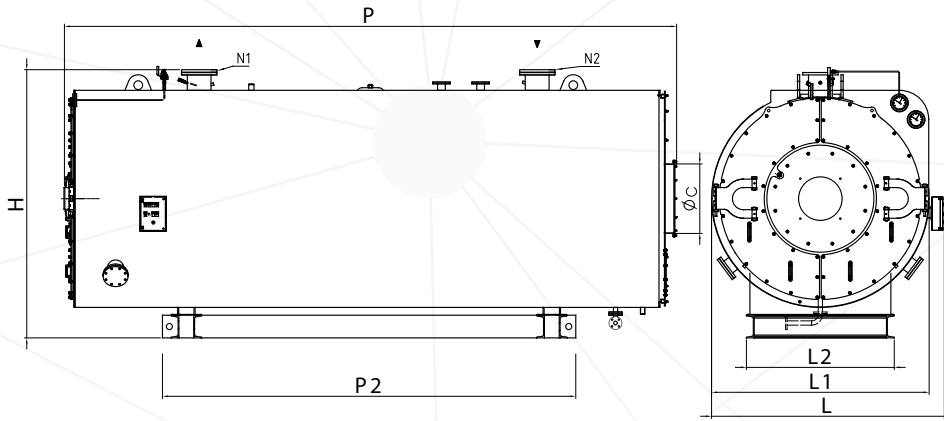
Heat output: 8000 ÷ 20000 kW

Efficiency: > 91,0 %

TECHNICAL DATA

Model	Heat output **	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNX EN	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
8000	8000	8791	91,00	161	14950	15,0	900,0	741,2	779,4	15400
9000	9000	9836	91,50	98	16200	20,0	1007,0	829,3	872,1	16300
10000	10000	10965	91,20	121	16200	23,0	1122,6	924,5	972,2	16300
11000	11000	11957	92,00	79	20200	15,5	1224,2	1008,1	1060,1	24940
12000	12000	13086	91,70	94	20200	18,0	1339,8	1103,3	1160,2	24940
13000	13000	14100	92,20	111	21800	21,0	1443,6	1188,8	1250,1	25400
14000	14000	15217	92,00	128	21800	24,0	1558,0	1283,0	1349,2	25400
15000	15000	16287	92,10	147	23800	24,0	1667,5	1373,2	1444,0	28050
16000	16000	17410	91,90	168	23800	27,0	1782,5	1467,9	1543,6	28050
17000	17000	18299	92,90	111	33000	20,5	1873,5	1542,8	1622,4	37500
18000	18000	19417	92,70	124	33000	22,0	1988,0	1637,2	1721,5	37500
19000	19000	20386	93,20	139	35100	25,0	2087,1	1718,8	1807,4	40000
20000	20000	21505	93,00	154	35100	28,0	2201,8	1813,2	1906,7	40000

** powers referring to methane gas; For diesel or naphtha operation the rule may provide for a downgrade



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNX EN	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
8000	3050	2700	2490	1700	7035	4750	800	250	250
9000	3050	2700	2490	1700	7535	5250	800	300	300
10000	3050	2700	2490	1700	7535	5250	800	300	300
11000	3400	3140	2940	2000	7735	5400	900	350	350
12000	3400	3140	2940	2000	7735	5400	900	350	350
13000	3400	3140	2940	2000	8235	5900	900	350	350
14000	3400	3140	2940	2000	8235	5900	900	350	350
15000	3500	3265	3065	2000	8183	5900	1000	350	350
16000	3500	3265	3065	2000	8183	5900	1000	350	350
17000	3960	3650	3450	2250	8820	6500	1100	400	400
18000	3960	3650	3450	2250	8820	6500	1100	400	400
19000	3960	3650	3450	2250	9320	7000	1100	400	400
20000	3960	3650	3450	2250	9320	7000	1100	400	400

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Bottom discharge unit including:

Shut-off globe valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The safety thermostat with manual reset (110°C) is INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNX EN 8000	83478000
TNX EN 9000	83479000
TNX EN 10000	83481000
TNX EN 11000	83481100
TNX EN 12000	83481200
TNX EN 13000	83481300
TNX EN 14000	83481400
TNX EN 15000	83481500
TNX EN 16000	83481600
TNX EN 17000	83481700
TNX EN 18000	83481800
TNX EN 19000	83481900
TNX EN 20000	83482000

ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	TNX	TNX EN
		6 bar	6 bar
QATRXETERM01	Boiler management control panel	■	■
QATRXETERM02	Boiler management control panel	■	■
QCTETERM	Eterm Easy manager panel	■	■
90060060	Ladder and handrail	■	■
90060090	Side platform	■	■



STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

TNOX



DESCRIPTION

The TNOX range includes three pass, wet back boilers with low thermal load in the combustion chamber (between 1 and 1.2 MW/m³). The boilers with automatic operation are suitable for operation on liquid or gaseous fuels and designed for large heating systems with an operating temperature between 60 and 100°C. Designed for 110°C maximum temperature.

ADVANTAGES

- Maximum operating flexibility**
Thanks to the very high water content and the very high thermal inertia, the boiler is suitable for any system solution, even in the most difficult operating conditions.
- Efficiency at all costs**
Integrated solutions for increased performance and efficiency through flue gas heat recovery fully integrated into the structure of the boiler.
- Configurable to specific requirements**
A wide range of optional accessories are available to customize the product to meet specific requirements.

FEATURES

- Design pressure: 6 bar**
- Heat output: 2500 ÷ 25000 kW**
- Efficiency: > 93,0 %**

The entire range is available, upon request, with maximum design pressure of 25 bar

- High efficiency and large exchange surfaces**
Extremely high energy efficiency thanks to the large exchange surfaces allowing top efficiency values under all operating conditions.
- Maximum security**
The generator has been designed in accordance with the strictest international safety regulations in force.
- Reliability and durability**
Maximum reliability and durability guaranteed through design with low surface heat losses.

Three-pass boiler

MODELS



TNOX



TNOX.e



TNOX EN



TNOX.e EN



TNOX BT COND



TNOX S

AVAILABLE CERTIFICATIONS



RECOMMENDED TECHNOLOGIES



MAIN APPLICATIONS

- + Commercial facilities
- + Hospitals
- + District heating

- + Industrial heating systems
- + Sports centers

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

TNOX

The TNOX model is designed for large heating systems with power between 2500 and 6000 kW and operating temperature between 60 and 100°C.



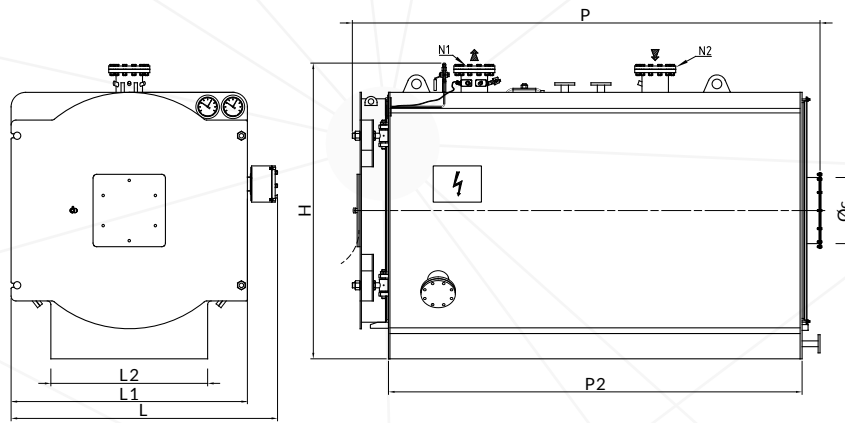
Design pressure: 6 bar

Heat output: 2500 ÷ 6000 kW

Efficiency: > 93,0 %

TECHNICAL DATA

Model	Heat output	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNOX	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
2500	2500	2688	93,00	38	4496	9,1	275,2	226,7	238,4	6300
3000	3000	3226	93,00	55	5000	12,5	330,2	272,0	286,0	6950
3500	3500	3763	93,00	75	6441	10,7	385,4	317,4	333,7	8200
4000	4100	4409	93,00	42	7335	11,5	451,3	371,7	390,8	8970
5000	5000	5376	93,00	63	9088	10,0	550,5	453,3	476,7	11280
6000	6000	6452	93,00	91	10066	11,0	660,5	543,9	572,0	12160



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNOX	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
2500	2460	2200	1960	1300	3879	3430	550	200	200
3000	2460	2200	1960	1300	4379	3930	550	200	200
3500	2700	2410	2170	1400	4379	3930	600	200	200
4000	2700	2410	2170	1400	4879	4430	600	250	250
5000	2820	2560	2320	1600	5389	4930	700	250	250
6000	2820	2560	2320	1600	5889	5430	700	250	250

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Blow down system comprising:

Purge shut-off valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The regulation thermostat (100 ° C) and the safety thermostat with manual reset (110 ° C) are INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNOX 2500	83472510
TNOX 3000	83473010
TNOX 3500	83473510
TNOX 4000	83474010
TNOX 5000	83475010
TNOX 6000	83476010

TNOX EN

The TNOX EN model is designed for large heating systems with power requirements between 7000 and 17000 kW and operating temperature between 60 and 100°C.



Design pressure: 6 bar

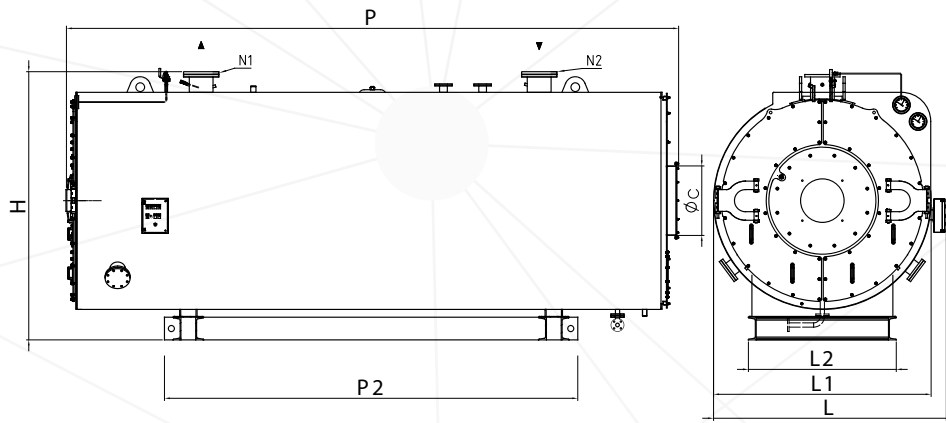
Heat output: 7000 ÷ 17000 kW

Efficiency: > 93,0 %

TECHNICAL DATA

Model	Heat output **	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNOX EN	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
7000	7000	7519	93,10	123	14950	12,0	769,8	633,9	666,6	15400
8000	8000	8602	93,00	78	16200	15,0	880,7	725,3	762,7	16300
9000	9000	9677	93,00	53	20200	10,0	990,8	816,0	858,0	24940
10000	10000	10753	93,00	66	21800	12,0	1100,8	906,6	953,3	25400
11000	11000	11853	92,80	79	21800	15,0	1213,6	999,4	1050,9	25400
12000	12000	12931	92,80	94	23800	15,5	1323,9	1090,3	1146,5	28050
13000	16000	17058	93,80	168	23800	20,2	1746,4	1438,2	1512,4	28050
14000	14000	15005	93,30	75	33000	14,0	1536,3	1265,2	1330,4	37500
15000	15000	16112	93,10	86	33000	16,0	1649,5	1358,4	1428,5	37500
16000	16000	17112	93,50	98	35100	18,0	1752,0	1442,8	1517,2	40000
17000	17000	18201	93,40	111	35100	20,0	1863,5	1534,6	1613,7	40000

** powers referring to methane gas; For diesel or naphtha operation the rule may provide for a downgrade



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNOX EN	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
7000	3050	2700	2490	1700	7035	4750	800	250	250
8000	3050	2700	2490	1700	7535	5250	800	300	300
9000	3400	3140	2940	2000	7735	5400	900	350	350
10000	3400	3140	2940	2000	8235	5900	900	350	350
11000	3400	3140	2940	2000	8235	5900	900	350	350
12000	3500	3265	3065	2000	8183	5900	1000	350	350
13000	3500	3265	3065	2000	8183	5900	1000	350	350
14000	3960	3650	3450	2250	8820	6500	1100	400	400
15000	3960	3650	3450	2250	8820	6500	1100	400	400
16000	3960	3650	3450	2250	9320	7000	1100	400	400
17000	3960	3650	3450	2250	9320	7000	1100	400	400

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Blow down system comprising:

Purge shut-off valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The regulation thermostat (100 ° C) and the safety thermostat with manual reset (110 ° C) are INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNOX EN 7000	83477010
TNOX EN 8000	83478010
TNOX EN 9000	83479010
TNOX EN 10000	83481010
TNOX EN 11000	83479510
TNOX EN 12000	83481210
TNOX EN 13000	83481310
TNOX EN 14000	83481410
TNOX EN 15000	83481510
TNOX EN 16000	83481610
TNOX EN 17000	83481710

TNOX.e

The TNOX.e model is designed for large heating systems with operating temperatures between 60 and 100°C. It is furthermore provided with elements accelerating the heat exchange to ensure the maximum possible efficiency.



Design pressure: 6 bar

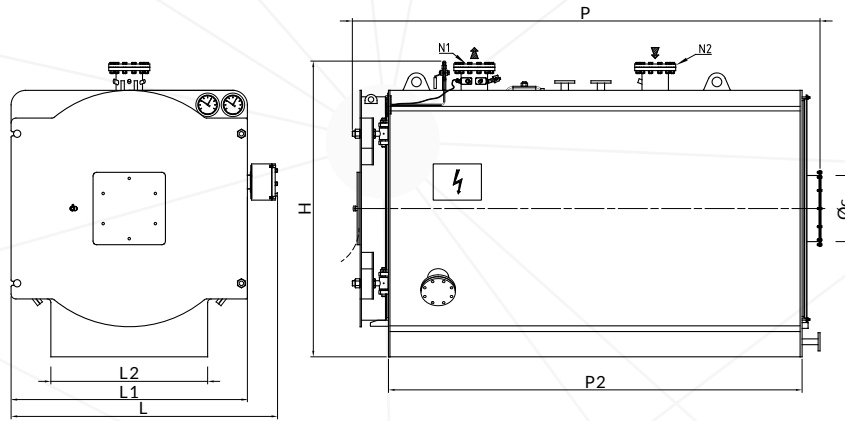
Heat output: 2500 ÷ 6000 kW

Efficiency: > 95,0 %



TECHNICAL DATA

Model	Heat output	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNOX-e	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
2500	2500	2626	95,20	38	4496	12,0	268,8	221,4	232,8	6300
3000	3000	3151	95,20	55	5746	14,0	322,6	265,7	279,4	6950
3500	3500	3676	95,20	75	6441	13,0	376,4	310,0	326,0	8200
4000	4100	4307	95,20	42	7335	15,0	441,0	363,1	381,9	8970
5000	5000	5252	95,20	63	9088	14,0	537,7	442,8	465,7	11280
6000	6000	6303	95,20	91	12160	16,0	645,2	531,4	558,8	12600



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNOX-e	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
2500	2460	2200	1960	1300	3879	3430	550	200	200
3000	2460	2200	1960	1300	4379	3930	550	200	200
3500	2700	2410	2170	1400	4379	3930	600	200	200
4000	2700	2410	2170	1400	4879	4430	600	250	250
5000	2820	2560	2320	1600	5389	4930	700	250	250
6000	2820	2560	2320	1600	5889	5430	700	250	250

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Blow down system comprising:

Purge shut-off valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The regulation thermostat (100 ° C) and the safety thermostat with manual reset (110 ° C) are INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNOX.e 2500	83472511
TNOX.e 3000	83473011
TNOX.e 3500	83473511
TNOX.e 4000	83474011
TNOX.e 5000	83475011
TNOX.e 6000	83476111

TNOX.e EN

The TNOX.e EN model is designed for large heating systems with operating temperature between 60 and 100°C.

It is furthermore provided with elements accelerating the heat exchange to ensure the maximum possible efficiency.



Design pressure: 6 bar

Heat output: 7000 ÷ 17000 kW

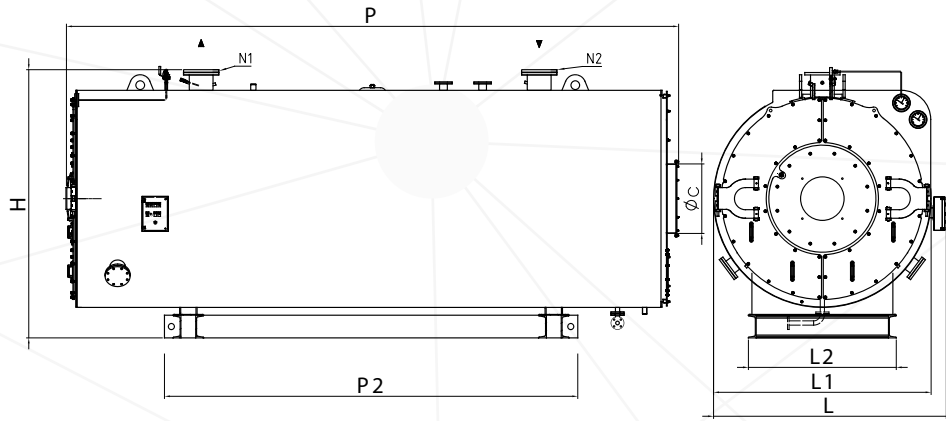
Efficiency: > 95,0 %



TECHNICAL DATA

Model	Heat output **	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Diesel fuel consump.	Nafta consump.	Total weight
TNOX-e EN	kW	kW	%	mbar	lt	mbar	Nm3/h	kg/h	kg/h	kg
7000	7000	7353	95,20	123	14950	15,0	752,9	620,0	652,0	15400
8000	8000	8403	95,20	78	16200	19,0	860,4	708,5	745,1	16300
9000	9000	9454	95,20	53	20200	14,0	967,9	797,1	838,1	24940
10000	10000	10504	95,20	66	21800	16,0	1075,5	885,7	931,3	25400
11000	11000	11555	95,20	79	21800	19,5	1183,0	974,2	1024,4	25400
12000	12000	12605	95,20	94	23800	19,5	1290,5	1062,7	1117,5	28050
13000	13000	13655	95,20	111	23800	22,0	1398,1	1151,4	1210,7	28050
14000	14000	14706	95,20	75	33000	18,0	1505,6	1239,9	1303,8	37500
15000	15000	15756	95,20	86	33000	20,0	1613,1	1328,4	1396,9	37500
16000	16000	16807	95,20	98	35100	23,0	1720,7	1417,1	1490,1	40000
17000	17000	17857	95,20	111	35100	25,0	1828,2	1505,6	1583,2	40000

** powers referring to methane gas; For diesel or naphtha operation the rule may provide for a downgrade



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNOX-e EN	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
7000	3050	2700	2490	1700	7035	4750	800	250	250
8000	3050	2700	2490	1700	7535	5250	800	300	300
9000	3400	3140	2940	2000	7735	5400	900	350	350
10000	3400	3140	2940	2000	8235	5900	900	350	350
11000	3400	3140	2940	2000	8235	5900	900	350	350
12000	3500	3265	3065	2000	8183	5900	1000	350	350
13000	3500	3265	3065	2000	8183	5900	1000	350	350
14000	3960	3650	3450	2250	8820	6500	1100	400	400
15000	3960	3650	3450	2250	8820	6500	1100	400	400
16000	3960	3650	3450	2250	9320	7000	1100	400	400
17000	3960	3650	3450	2250	9320	7000	1100	400	400

STANDARD EQUIPMENT

Instruments for pressure control, including:

Large dial 3 way test valve manometer

Instruments for temperature control, including:

Thermometer with large dial, scale 0-120°C

Regulation thermostat (100°C)

High temperature safety thermostat with manual reset (110°C)

PT100 thermocouple

Blow down system comprising:

Purge shut-off valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

The regulation thermostat (100 ° C) and the safety thermostat with manual reset (110 ° C) are INAIL approved

The boilers destined to foreign countries will be provided with:

High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNOX.e EN 7000	83477011
TNOX.e EN 8000	83478011
TNOX.e EN 9000	83479011
TNOX.e EN 10000	83481011
TNOX.e EN 11000	83481111
TNOX.e EN 12000	83481211
TNOX.e EN 13000	83481311
TNOX.e EN 14000	83481411
TNOX.e EN 15000	83481511
TNOX.e EN 16000	83481611
TNOX.e EN 17000	83481711

TNOX BT COND

The TNOX BT COND model is designed for large heating systems with power requirements between 3000 and 7000 kW and operating temperature between 40 and 100°C. It is furthermore provided with a condensing heat recovery unit integrated in the rear side of the boiler to increase the efficiency.

Design pressure: 6 bar

Heat output: 3000 ÷ 7000 kW

Efficiency: > 107,0 %

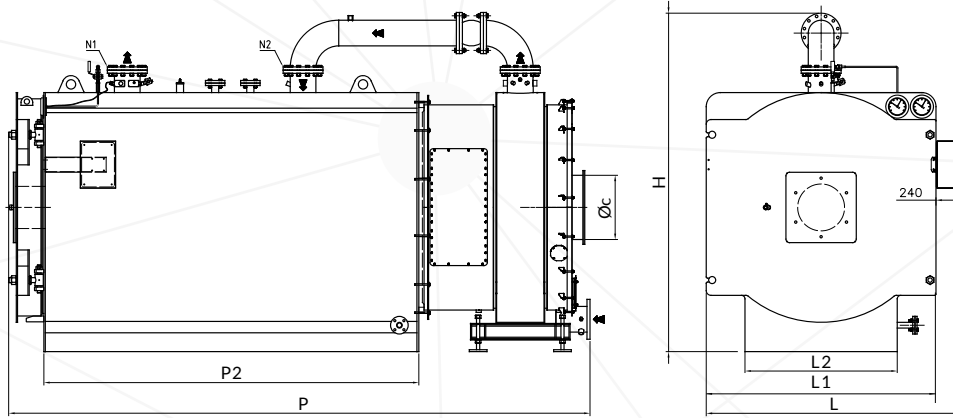


LowNOx Reduced NOx emissions



TECHNICAL DATA

Model	Heat output	Flow thermal	100% efficiency	Water side pressure drop	Total volume H2O	Flue gas pressure drop	Gas consump.	Total weight
TNOX BT COND	kW	kW	%	mbar	lt	mbar	Nm3/h	kg
3000	2.743	2791	98,3	46	4496	13,0	285,7	7450
3500	3.200	3256	98,3	63	5746	16,0	333,3	8100
4100	3.749	3814	98,3	86	6441	12,0	390,5	9710
4800	4.389	4465	98,3	49	7335	13,0	457,1	10480
6000	5.487	5581	98,3	76	9088	13,0	571,4	13410
7000	6.401	6512	98,3	103	10066	14,0	666,7	14290



DIMENSIONS

Model	H	L	L1	L2	P	P2	ØC	N1	N2
TNOX BT COND	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
3000	2888	2200	1960	1300	4915	3200	550	200	200
3500	2888	2200	1960	1300	5645	3930	550	200	200
4100	3098	2410	2170	1400	5412	3700	600	200	200
4800	3284	2410	2170	1400	5912	4200	600	250	250
6000	3360	2560	2320	1600	6412	4700	700	250	250
7000	3360	2560	2320	1600	6912	5200	700	250	250

STANDARD EQUIPMENT

Instruments for pressure control, including:
Large dial 3 way test valve manometer

Instruments for temperature control, including:
Thermometer with large dial, scale 0-120°C
Regulation thermostat (100°C)
High temperature safety thermostat with manual reset (110°C)
PT100 thermocouple

Blow down system comprising:
Purge shut-off valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz
The regulation thermostat (100 ° C) and the safety thermostat with manual reset (110 ° C) are INAIL approved

The boilers destined to foreign countries will be provided with:
High-pressure safety switch with manual reset

PRODUCT CODES

Model	Code
TNOX 3000 BT COND	83463010
TNOX 3500 BT COND	83463510
TNOX 4100 BT COND	83464110
TNOX 4800 BT COND	83464810
TNOX 6000 BT COND	83466000
TNOX 7000 BT COND	83467000

ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	TNOX	TNOX EN	TNOX-e	TNOX-e EN	TNOX BT COND
		6 bar	6 bar	6 bar	6 bar	6 bar
QATRXETERM01	Boiler management control panel	■	■	■	■	■
QATRXETERM02	Boiler management control panel	■	■	■	■	■
QCTETERM	Eterm Easy manager panel	■	■	■	■	■
90060060	Ladder and handrail	■	■	■	■	■
90060090	Side platform	■	■	■	■	■

TNOX S Greenhouse Systems

Design pressure: 3 bar

Heat output: 1200 ÷ 14000 kW

Efficiency: > 93,0 %

The greenhouse systems of the TNOX S series are designed to meet the specific heating requirements for greenhouses to which they provide heat and carbon dioxide necessary to optimise the productivity under any weather condition.

These systems are the result of a sixty-year experience in the design and production field and are manufactured according to the most innovative design criteria to fully meet the needs of energy efficiency, cost saving and high performance (above 105% with condenser).

The main component of the system is the TNOX S series boiler, manufactured with three flue gas passes, wet back and low thermal load in the combustion chamber. It is characterised by a large furnace to optimise the combustion and reduce the NOx emissions, while the high water content ensures protection and durability of the product, as well as great flexibility in terms of prolonged peaks loads.

Finally, in order to obtain flue gas temperatures in line with the use in the greenhouse, the boilers may come with a condenser that recovers the latent heat of flue gas, reducing its temperature and increasing the overall efficiency of the system.



Reduced NOx emissions

ADVANTAGES

- Large-sized furnace to ensure optimal combustion
- Extremely low NOx emissions (up to 40mg/Nm³)
- Low flue gas outlet temperatures (50°C)
- The low back pressure allows for a wide range of burners that can be coupled
- Availability for all markets, both European and non-European
- Extremely easy to install. The product is already wired and ready for water, electrical and fuel connections

SYSTEM COMPONENTS



Burners
VGI/s o VGOI/s



Condenser
BAX-GH



Condenser
ECXZ-I

TECHNICAL DATA

Model	Heat output	Heat input	100% efficiency	Flue gas pressure drop	Total volume H ₂ O	Gas consumption	Maximum flue gas flow rate	Total weight
TNOX S	kW	kW	%	mbar	l	Nm ³ /h	kg/h	kg
1200	1200	1283	93,5	3	3500	131	1905	3100
1750	1750	1872	93,5	4	4800	192	2779	3900
2350	2350	2527	93	5	5900	259	3751	4500
2900	2900	3102	93,5	5	7200	318	4604	5400
3500	3500	3763	93	6	9800	385	5587	6700
4100	4100	4385	93,5	6	12800	449	6510	7900
4850	4850	5187	93,5	8	14300	531	7700	9100
5850	5850	6257	93,5	9	15400	641	9288	10800
6850	6850	7326	93,5	10	16900	750	10876	11500
7350	7350	7861	93,5	11	18700	805	11670	13000
8350	8350	8930	93,5	11	21000	914	13258	14500
9300	9300	9947	93,5	12	23400	1018	14766	16300
10500	10500	11230	93,5	13	25800	1150	16671	17000
11600	11600	12406	93,5	13	26500	1270	18418	19500
12500	12500	13369	93,5	13	28000	1369	19847	22500
14000	14000	15054	93	13,5	30000	1541	22348	25000

STEAM

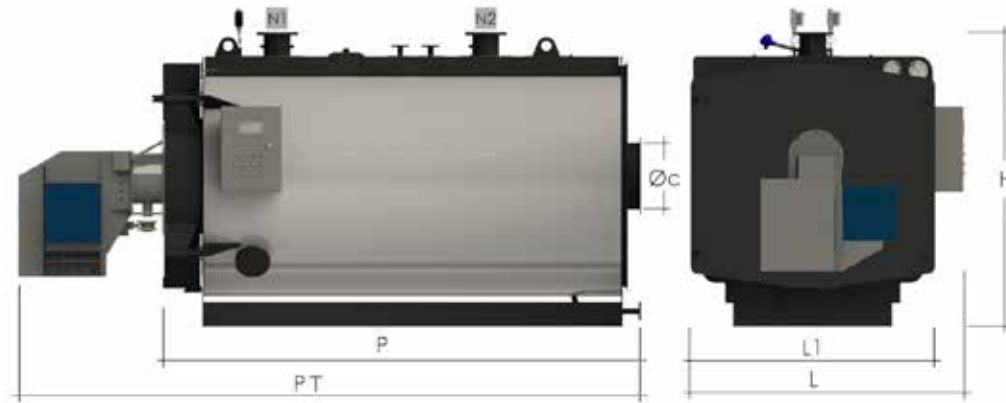
SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS



DIMENSIONS

Model	H	L	L1	P	PT	Øc	N1	N2
TNOX S	mm	mm	mm	mm	mm	mm	DN	DN
1200	2300	2100	1900	3890	5040	400	125	125
1750	2360	2160	1960	3890	5040	450	150	150
2350	2560	2360	2160	4390	5540	500	150	150
2900	2880	2680	2480	4390	5595	550	200	200
3500	2880	2680	2480	4890	6109	550	200	200
4100	2880	2680	2480	5390	6702	600	200	200
4850	2960	2760	2560	5390	6702	600	200	200
5850	3110	2910	2660	5390	6764	600	250	250
6850	3210	3010	2760	5990	7364	700	250	250
7350	3350	3150	2900	5990	7450	700	250	250
8350	3450	3250	3000	6490	7950	800	250	250
9300	3550	3350	3100	6490	7950	800	300	300
10500	3650	3450	3200	7080	8540	800	300	300
11600	3750	3550	3300	7080	8710	900	350	350
12500	3750	3550	3300	7600	9230	900	350	350
14000	3850	3650	3400	8100	9730	1100	400	400

STANDARD EQUIPMENT

Instruments for pressure control, including:
large dial 3 way test valve manometer

Instruments for temperature control, including:
thermometer with large dial, scale 0-120°C
regulation thermostat (100°C)
high temperature safety thermostat with manual reset (110°C)
PT100 thermocouple

Blowdown unit containing:
blowdown shut-off globe valve

Boiler control panel, IP55 1/N ~ 230V 50 Hz

PRODUCT CODES

Model	Code	Model	Code
TNOX 1200 S	83470010	TNOX 6850 S	83470063
TNOX 1750 S	83470015	TNOX 7350 S	83470070
TNOX 2350 S	83470020	TNOX 8350 S	83470080
TNOX 2900 S	83470028	TNOX 9300 S	83470090
TNOX 3500 S	83470032	TNOX 10500 S	83470100
TNOX 4100 S	83470037	TNOX 11600 S	83470110
TNOX 4850 S	83470045	TNOX 12500 S	83470120
TNOX 5850 S	83470055	TNOX 14000 S	83470140



STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

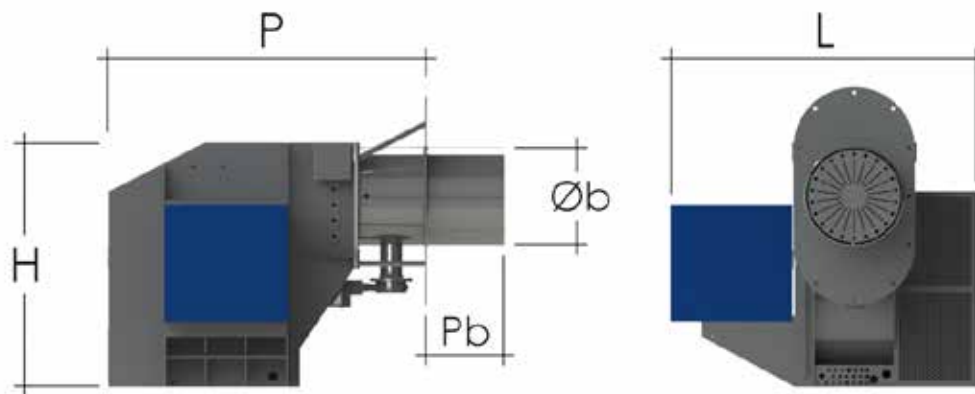
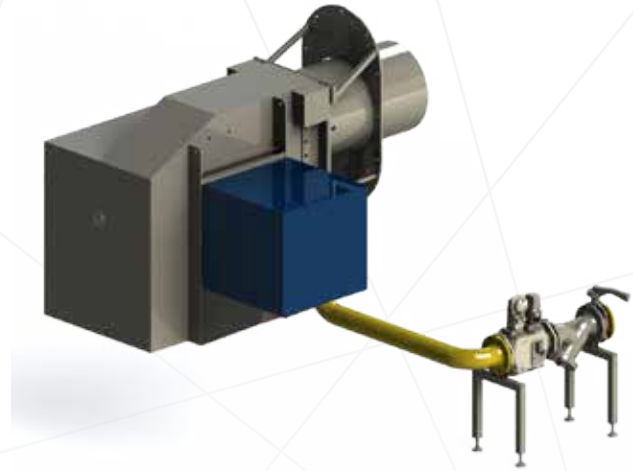
BURNERS OF THE VGI/s AND VGOI/s SERIES SPECIFIC FOR TNOX S

Burner with extremely low polluting emissions, suitable for greenhouses using a CO₂ fertilisation system, suitable for the combustion of METHANE GAS (as an alternative to DIESEL FUEL) with modulating operation.

Monobloc burner with integrated ventilation that can be opened both on the right and on the left side for an easy access to the combustion head.

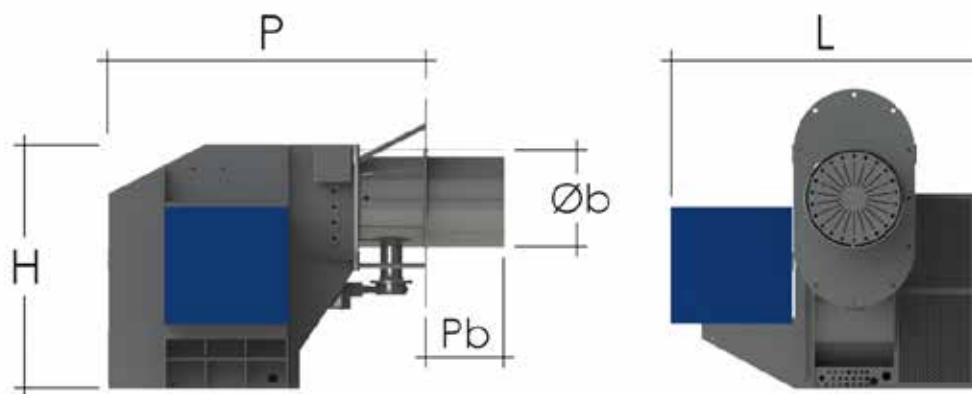
The burner structure is complete with sound-damping material to reduce its noise.

The burners of the VGI/VGOI series can be paired exclusively with TNOX S boilers



TECHNICAL DATA OF THE METHANE GAS VERSION

Burner model	Burner code	Paired TNOX S	Gas train diameter	Fan power	H	L	P	Pb	øb
			in / DN	kW	mm	mm	mm	mm	mm
VGI/s-100	BRUCSM0100	1200	2"	2,2	810	913	1150	300	261
VGI/s-150	BRUCSM0150	1750	65	4	830	913	1150	300	300
VGI/s-200	BRUCSM0200	2350	65	4	830	913	1150	300	300
VGI/s-250	BRUCSM0250	2900	80	5,5	850	963	1205	300	345
VGI/s-300	BRUCSM0300	3500	80	7,5	860	963	1219	300	345
VGI/s-350	BRUCSM0350	4100	80	7,5	1000	1225	1312	300	345
VGI/s-400	BRUCSM0400	4850	80	11	1000	1225	1312	300	345
VGI/s-450	BRUCSM0450	5850	100	11	1000	1225	1374	300	400
VGI/s-500	BRUCSM0500	6850	100	15	1000	1225	1374	300	400
VGI/s-600	BRUCSM0600	7350	80	18,5	1165	1355	1460	300	400
VGI/s-700	BRUCSM0700	8350	100	22	1165	1355	1460	300	450
VGI/s-800	BRUCSM0800	9300	100	30	1165	1420	1460	300	450
VGI/s-800	BRUCSM0800	10500	100	30	1165	1420	1460	300	450
VGI/s-1000	BRUCSM1000	11600	100	37	1260	1570	1630	300	500
VGI/s-1000	BRUCSM1000	12500	100	37	1260	1570	1630	300	500
VGI/s-1250	BRUCSM1250	14000	100	45	1260	1640	1630	300	550



TECHNICAL DATA OF THE METHANE GAS/DIESEL MIXED VERSION

Burner model	Burner code	Paired TNOX S	Gas train diameter	Fan power	Diesel pump power	H	L	P	Pb	øb
			in / DN	kW	kW	mm	mm	mm	mm	mm
VG0I/s-100	BRUCSMG0100	1200	2"	2,2	0,18	810	913	1150	300	261
VG0I/s-150	BRUCSMG0150	1750	65	4	0,37	830	913	1150	300	300
VG0I/s-200	BRUCSMG0200	2350	65	4	0,37	830	913	1150	300	300
VG0I/s-250	BRUCSMG0250	2900	80	5,5	0,37	850	963	1205	300	345
VG0I/s-300	BRUCSMG0300	3500	80	7,5	0,75	860	963	1219	300	345
VG0I/s-350	BRUCSMG0350	4100	80	7,5	0,75	1000	1225	1312	300	345
VG0I/s-400	BRUCSMG0400	4850	80	11	0,75	1000	1225	1312	300	345
VG0I/s-450	BRUCSMG0450	5850	100	11	0,75	1000	1225	1374	300	400
VG0I/s-500	BRUCSMG0500	6850	100	15	0,75	1000	1225	1374	300	400
VG0I/s-600	BRUCSMG0600	7350	80	18,5	1,5	1165	1355	1460	300	400
VG0I/s-700	BRUCSMG0700	8350	100	22	1,5	1165	1355	1460	300	450
VG0I/s-800	BRUCSMG0800	9300	100	30	1,5	1165	1420	1460	300	450
VG0I/s-800	BRUCSMG0800	10500	100	30	1,5	1165	1420	1460	300	450
VG0I/s-1000	BRUCSMG1000	11600	100	37	2,2	1260	1570	1630	300	500
VG0I/s-1000	BRUCSMG1000	12500	100	37	2,2	1260	1570	1630	300	500
VG0I/s-1250	BRUCSMG1250	14000	100	45	2,2	1260	1640	1630	300	550

BAX-GH TRADITIONAL CONDENSER SPECIFIC FOR TNOX S



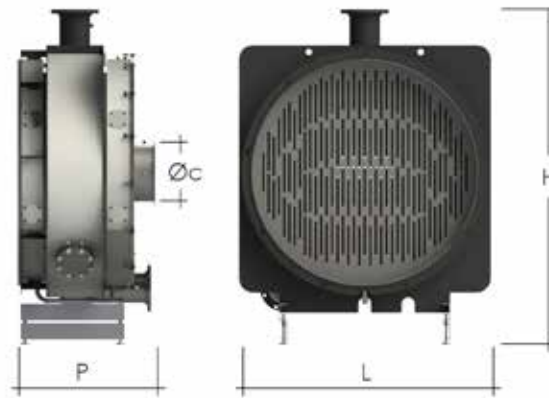
This type of condenser designed by ICI Caldaie enables better exchange efficiency between the water and flue gas, resulting in improved performance compared to traditional condensers with finned tubes, with lower output temperature and further savings on fuel.

Flue gas condenser to install at the back of the heat generator with horizontal flue, in order to pre-heat a low-temperature circuit external to a heat generator circuit by means of partial recovery of the sensible and latent heat of combustion flue gas. Cartridge type exchanger, made of AISI 316 Ti stainless steel complete with supporting structure & enclosure suitable for methane gas or LPG.

The condensers of the BAX-GH series can be paired exclusively with TNOX S boilers

TECHNICAL DATA

Model	Matched item	Maximum Heat output (water IN T 30°C)	Condenser flue gas pressure drop	Hourly fuel saving (100% of the load)	Water flow rate	Water pressure drop	Water inlet T	Water outlet T	Design pressure	Total capacity	Exchange surface	Empty weight
BAX GH	TNOX S	kW	mbar	Nm ³ /h	m ³ /h	bar	°C	°C	bar	l	m ²	kg
88	1200	148	0,25	15	88	0,05	30	31	3	393	25	310
88	1750	239,5	0,56	25	88	0,13	30	32	3	393	25	310
128	2350	327,5	0,47	34	131,3	0,25	30	32	3	610	36,7	570
128	2900	391	0,93	40	131,3	0,35	30	33	3	610	36,7	570
128	3500	494	1,21	51	131,3	0,25	30	33	3	610	36,7	570
200	4100	560	0,66	57	179,5	0,31	30	33	3	626	57	1254
200	4850	673,5	0,97	69	179,5	0,45	30	33	3	626	57	1254
230	5850	826,5	1,1	85	221,6	0,42	30	33	3	831	66	1619
290	6850	988,5	0,91	101	267,8	0,60	30	33	3	896	82	2088
290	7350	1011,5	1,12	104	267,8	0,60	30	33	3	896	82	2088
350	8350	1166,5	1,01	119	351,8	0,46	30	33	3	1036	99	2590
440	9300	1228,0	0,85	126	395	0,48	30	33	3	1340	127,6	3300
440	10500	1406,0	1,08	144	420	0,64	30	33	3	1340	127,6	3300
530	11600	1560	0,92	160	485	0,71	30	33	3	1725	153,7	3950
530	12500	1680	1,07	172	515	0,75	30	33	3	1725	153,7	3950
620	14000	1964,0	0,99	201	599	0,91	30	33	3	1841	179,8	4900



DIMENSIONS

Model	H	L	P	Øc
BAX GH	mm	mm	mm	mm
88	1760	1420	1037	400
128	2064	1710	1030	400
200	2380	1960	1555	550
230	2592	2170	1552	600
290	2742	2321	1552	700
350	3052	2491	1622	800
440	3550	3200	1622	800
530	3650	3300	1622	900
620	3950	3600	1622	1100

PRODUCT CODES

Model	Matched model	Code	Model	Matched model	Code
BAX GH	TNOX S		BAX GH	TNOX S	
88	1200	88260088_1	290	6850	88260290_1
88	1750	88260088_2	290	7350	88260290_2
128	2350	88260128_1	350	8350	88260350
128	2900	88260128_2	440	9300	88260440_1
128	3500	88260128_3	440	10500	88260440_2
200	4100	88260200_1	530	11600	88260530_1
200	4850	88260200_2	530	12500	88260530_2
230	5850	88260230	620	14000	88260620

ECXZ-I CONDENSER WITH FINNED PIPES SPECIFIC FOR TNOX S

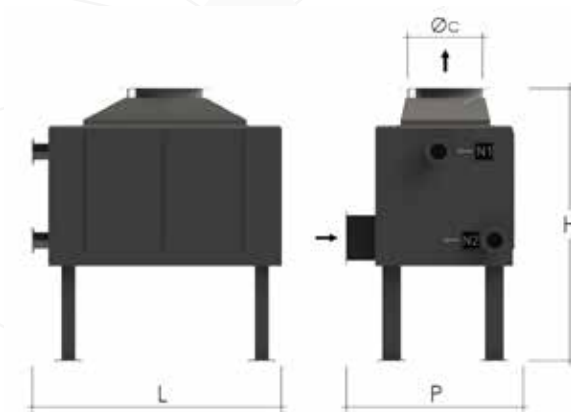


Backup battery installed at the back of the heat generator with vertical flue, in order to pre-heat a low-temperature circuit external to a heat generator circuit by means of partial recovery of the sensible heat and latent heat of combustion flue gas.

The condensers of the ECXZ-I series can be paired exclusively with TNOX S boilers

TECHNICAL DATA

Model	Matched item	Maximum Heat output (water IN T 30°C)	ECXZ flue gas pressure drop	Hourly fuel saving (100% of the load)	Water flow rate	Water pressure drop	Water inlet T	Water outlet T	Design pressure	Total capacity	Exchange surface	Empty weight
ECXZ-I	TNOX S	kW	mbar	Nm ³ /h	m ³ /h	bar	°C	°C	bar	l	m ²	kg
ECXZ-I 1	1200	88	0,9	9	8,5	0,05	30	39	3	32	187	580
ECXZ-I 2	1750	152	1,5	16	14,7	0,13	30	39	3	32	187	580
ECXZ-I 3	2350	210	2,4	21	20,2	0,25	30	39	3	32	187	580
ECXZ-I 4	2900	246	3,3	25	23,7	0,35	30	39	3	32	187	580
ECXZ-I 5	3500	319	2	33	30,7	0,25	30	39	3	53	312	791
ECXZ-I 6	4100	355	2,5	36	34,2	0,31	30	39	3	53	312	791
ECXZ-I 7	4850	431	3,2	44	41,5	0,45	30	39	3	53	312	791
ECXZ-I 8	5850	534	2,3	55	51,4	0,42	30	39	3	79	470	1042
ECXZ-I 9	6850	646	3	66	62,3	0,60	30	39	3	79	470	1042
ECXZ-I 10	7350	644	3,3	66	62,0	0,60	30	39	3	79	470	1042
ECXZ-I 11	8350	749	2,4	77	72,0	0,46	30	39	3	114	660	1318
ECXZ-I 12	9300	763	2,8	78	74,0	0,48	30	39	3	114	660	1318
ECXZ-I 13	10500	881	3,4	90	85,0	0,64	30	39	3	114	660	1318
ECXZ-I 14	11600	980	2,5	100	94,4	0,71	30	39	3	157	882	1622
ECXZ-I 15	12500	1055	2,8	108	102,0	0,75	30	39	3	157	882	1622
ECXZ-I 16	14000	1264	3,4	129	122,0	0,91	30	39	3	157	882	1622



DIMENSIONS

Model	H	L	P	Øc
ECXZ-I	mm	mm	mm	mm
ECXZ-I 1	2300	1655	1300	400
ECXZ-I 2	2300	1655	1300	450
ECXZ-I 3	2300	1655	1300	500
ECXZ-I 4	2300	1655	1300	550
ECXZ-I 5	2300	1955	1415	550
ECXZ-I 6	2300	1955	1415	600
ECXZ-I 7	2300	1955	1415	600
ECXZ-I 8	2300	2255	1535	600
ECXZ-I 9	2300	2255	1535	700
ECXZ-I 10	2300	2255	1535	700
ECXZ-I 11	2300	2555	1655	800
ECXZ-I 12	2300	2555	1655	800
ECXZ-I 13	2300	2555	1655	800
ECXZ-I 14	2300	2855	1775	900
ECXZ-I 15	2300	2855	1775	900
ECXZ-I 16	2300	2855	1775	1100

PRODUCT CODES

Model	Code	Model	Code
ECXZ-I		ECXZ-I	
ECXZ-I 1	85501010	ECXZ-I 9	85501090
ECXZ-I 2	85501020	ECXZ-I 10	85501100
ECXZ-I 3	85501030	ECXZ-I 11	85501110
ECXZ-I 4	85501040	ECXZ-I 12	85501120
ECXZ-I 5	85501050	ECXZ-I 13	85501130
ECXZ-I 6	85501060	ECXZ-I 14	85501140
ECXZ-I 7	85501070	ECXZ-I 15	85501150
ECXZ-I 8	85501080	ECXZ-I 16	85501160

ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	TNOX	TNOX EN	TNOX-e	TNOX-e EN	TNOX BT COND	TNOX S
		6 bar	6 bar	6 bar	6 bar	6 bar	3 bar
QATRXETERM01	Boiler management control panel	■	■	■	■	■	■
QATRXETERM02	Boiler management control panel	■	■	■	■	■	■
QCTETERM	Eterm Easy manager panel	■	■	■	■	■	■
90060060	Ladder and handrail	■	■	■	■	■	■
90060090	Side platform	■	■	■	■	■	■



STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS



ACCESSORIES

Components designed to be combined with industrial boilers and further improve their performances; products developed to be integrated in high-performance systems.

LADDER AND HANDRAIL



Accessory code:

90060060

Compatible with the following product ranges:

- SIXEN
- GX
- ASGX EN
- TNX
- TNOX

The structure consists of carbon steel profiles connected by special joints that ensure their correct coupling.

The upper handrail parapet is suitably made and fixed by housings welded to the boiler structure to ensure perfect stability and solidity.

The access ladder to the boiler platform is manufactured in compliance with the prevailing safety standards and is provided with:

- handrail welded to the structure
- skirting
- structure to prevent falling from platforms higher than 3 metres
- anti-slip inserts on the rungs
- fall-prevention gate

The gate is provided with spring-type hinges that keep it normally closed thus preventing any accidental fall towards the access ladder.

SIDE PLATFORM



Accessory code:

90060090

Ideal for heating plant rooms at a limited height that do not allow the use of ladders and handrail on the top side of the boilers.

The structure, manufactured in compliance with standard EN1090 consists of carbon steel welded sections.

The upper handrail parapet is suitably made and fixed by housings welded to the boiler structure to ensure perfect stability and solidity.

Once installed and positioned next to the boiler, it must be fixed to the floor in compliance with the prevailing regional standards.

The access ladder to the boiler platform is manufactured in compliance with the prevailing safety standards and is provided with:

- handrail welded to the structure
- skirting
- structure to prevent falling from platforms higher than 3 metres
- anti-slip inserts on the rungs
- fall-prevention gate

The gate is provided with spring-type hinges that keep it normally closed thus preventing any accidental fall towards the access ladder.

ETERM EASY MANAGER PANEL



Control panel with 15" touch screen for a personalised view of the heating plant room (synoptic diagram).

The panel must be connected via bus to the boiler Eterm control panels and to Nereix devices (plant and/flat metering devices)

From the graphic panel it is possible to:

- view the instantaneous values of temperature, operating status, modulation percentage values, alarms, etc.

- send starting, stopping, forcing, setpoint and other types of commands
- view graphs of the saved variables
- export images of the graphs and Excel tables of the log data
- view the alarm log

Control panel with 15" touch screen for a personalised view of the heating plant room (synoptic diagram).

The panel must be connected via bus to the boiler Eterm control panels and to Nereix devices (plant and/flat metering devices)

From the graphic panel it is possible to:

- view the instantaneous values of temperature, operating status, modulation percentage values, alarms, etc.
- send starting, stopping, forcing, setpoint and other types of commands
- view graphs of the saved variables
- export images of the graphs and Excel tables of the log data
- view the alarm log

The ModBus RS485 port (2 wires) is available for only one of the following options:

1- ModBus Master

ModBus slave device management, i.e. the ability to manage other devices featuring the same interface from the graphic page.

(ICI Caldaie reserves the right to check the compatibility of the devices)

2-ModBus Slave

Conversion of all eterm parameters, both in reading and in writing mode, in ModBus protocol for external supervision systems provided with such interface.

The maximum number of parameters that can be provided is 500 and they can be chosen by the customer based on the system.

The control panel is provided with a device for Internet connection:

the type of preferred connection determines the type of device installed inside the panel.

The versions/connections are divided in:

QCTETERM01	MODEM 2G/3G
QCTETERM02	LAN use
QCTETERM03	Wi-Fi

When placing your order, please confirm the type of configuration chosen and the type of connectivity available in the plant room

These connections allow to:

View and manage, from any device provided with browser, the same synoptic diagram available on the touch screen.

(Considering the constant evolution of the browser, ICI Caldaie reserves the right to indicate the fully compatible synoptic diagrams for a correct display)

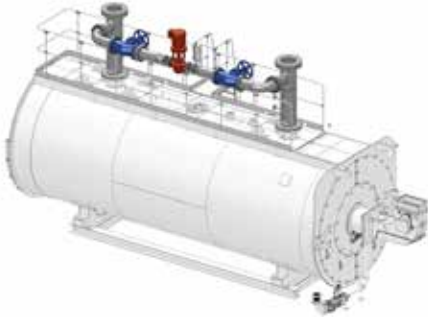
Receive remote assistance for the configuration of all connected devices with considerable time and cost saving:

in case of electronic board replacement

in case of changes to the configuration required for optimisation after a test

(example of threshold setting PID regulation, etc.)

RETURN WATER TEMPERATURE CONTROL SYSTEM



To maintain the minimum return temperature and the maximum flow/return ΔT within the allowed limits, a recirculation system is installed between the flow and return connections which recirculates a suitable water flow rate in order to raise the return temperature before it goes into the boiler.

The system is supplied hydraulically and electrically mounted on top of the boiler as an integral part of it. Connecting pipework with suitable supports and electrical wiring are included.

Boilers that can be matched

ASX - ASGX EN - TNX / EN - TNOX / EN - TNOX.e / EN

Standard equipment

- Fixed speed pump suitably sized (variable speed control upon request)
- 2 shut-off valves
- Non-return valve
- Temperature probe fitted on the return pipework
- Control by PLC (if supplied) or Eterm board (if supplied) or dedicated controller inside the boiler control panel

Accessory code:

CTR-001

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

BOILER MANAGEMENT MASTER PANEL



Control panel for traditional and condensing boilers, with microprocessor board and updatable firmware.

- Main switch
- Burner operation switch (0-1)
- Boiler delivery PT1000 probe
- Boiler return PT1000 probe
- Header PT1000 probe
- External probe
- Boiler remote management modem (data SIM card and antenna not included)

Accessory code

QATRXETERM01

Available for hot water boilers of the industrial line:

- TNX
- TNX EN
- TNOX
- TNOX EN
- TNOX.e
- TNOX.e EN
- TNOX BT COND
- REX - REX F (400 ÷ 600)

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump (with optional probe or thermostat)
 - boiler circulation pump
 - anti-condensation circulation pump
 - direct zone system circulation pump
 - mixed zone circulation pump
 - cascade header circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes (water heater, mixed zone, flue gases, etc.)
 - digital enabling
- Programmable input that can be configured for:
 - NTC probe
 - digital enabling
- Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
- Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - remote control of the boiler temperature
 - display of 0-10 Volt transducers
- Cascade management (with master function)
- Pump anti-seize protection
- Thermal inertia discharge
- Flue gas probe control
- Anti-freeze protection
- Replenishing litre meter

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the Eterm Master unit (if any) (img)
- RS485 connection to connect the board to any QATRXETERM02 and QETERM02 slave units
- 230 Vac supply

BOILER MANAGEMENT SLAVE PANEL



Control panel for traditional and condensing boilers, with microprocessor board and updatable firmware.

- Main switch
- Burner operation switch (0-1)
- Boiler delivery PT1000 probe
- Boiler return PT1000 probe

Accessory code

QATRXETERM02

Available for hot water boilers of the industrial line:

- TNX
- TNX EN
- TNOX
- TNOX EN
- TNOX.e
- TNOX.e EN
- TNOX BT COND
- REX - REX F (400 ÷ 600)

Electronic board main functions:

- Management of one-stage, two-stage, three-stage, modulating burners with three-point control 0-10 Volt or 4-20 mA
- Delivery temperature climate control with optional external probe
- 2 programmable outputs (230 Vac. / 2 A) that can be configured for:
 - boiler circulation pump (with optional probe or thermostat)
 - boiler circulation pump
 - anti-condensation circulation pump
 - direct zone system circulation pump
 - mixed zone circulation pump
 - cascade header circulation pump
- Boiler PT1000 probe input
- 2 programmable inputs that can be configured for:
 - PT1000 probes (water heater, mixed zone, flue gases, etc.)
 - digital enabling
 - Programmable input that can be configured for:
 - NTC probe
 - digital enabling
 - Management of the mixing valve with 0-10 V control (if not already used for a modulating burner with 0-10 Volt control)
 - Management of three-point mixing valve (if not already used for a single-stage or modulating burner with three-point control)
- 0-10 Volt input that can be programmed for:
 - digital enabling
 - remote control of the boiler temperature
 - display of 0-10 Volt transducers
 - Pump anti-seize protection
 - Thermal inertia discharge
 - Flue gas probe control
 - Anti-freeze protection
 - Replenishing litre meter

Communication:

- Modem connector
- USB socket
- RS485 to connect the board to the QATRXETERM01 Master unit (if any)
- 230 Vac supply

STEAM

SUPERHEATED WATER

THERMAL OIL

HOT WATER

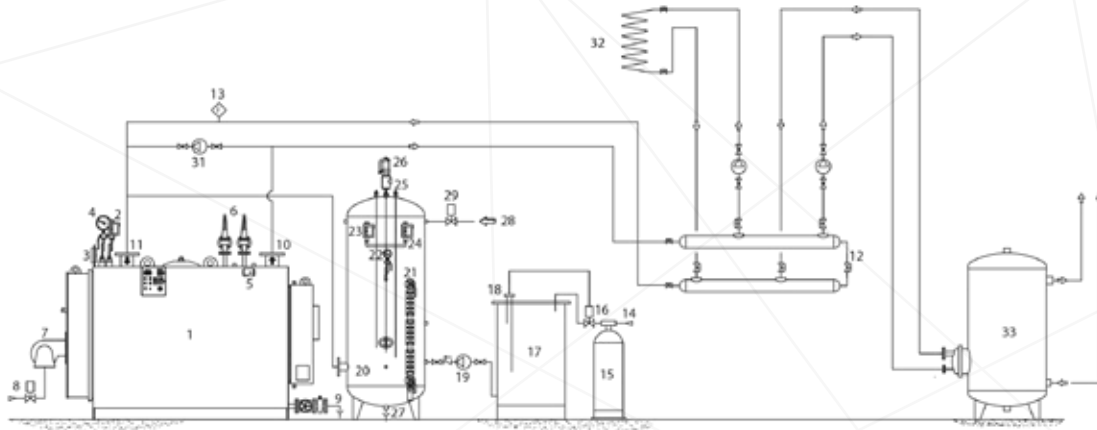
ACCESSORIES

SYSTEM LAYOUTS



SYSTEM LAYOUTS

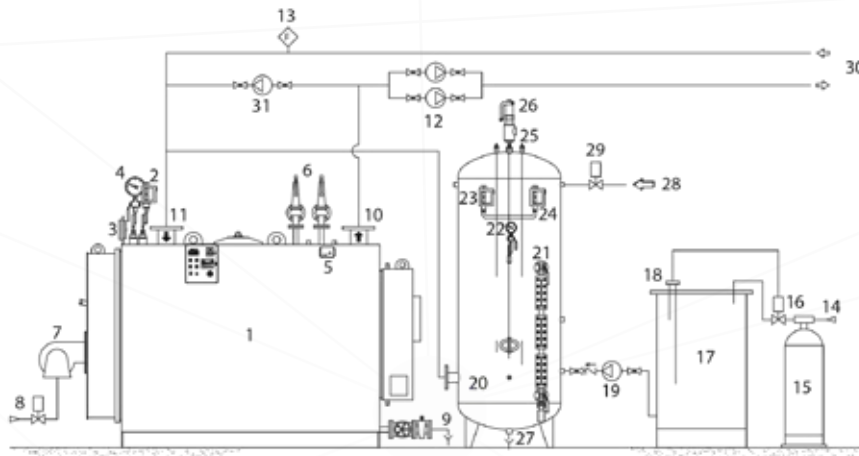
Closed-circuit system layout for heating and DHW production, boilers model ASX-ASGX EN-TNX-TNOX-TNOX.e



Description

- | | | |
|--------------------------------|-------------------------------|----------------------------------|
| 1.Boiler | 12.By-pass valve | 23.Air supply pressure switch |
| 2.Safety pressure switch | 13.Flow switch | 24.Safety pressure switch |
| 3.Thermometer | 14.Water supply | 25.Level regulation probes |
| 4.Manometer | 15.Water softener | 26.Expansion vessel safety valve |
| 5.Safety thermostat | 16.Water load solenoid valve | 27.Expansion vessel drain |
| 6.Safety valves | 17.Water supply tank | 28.Air supply |
| 7.Burner | 18.Water tank level regulator | 29.Air supply solenoid valve |
| 8.Fuel shut-off solenoid valve | 19.System replenishing pump | 30.Use |
| 9.Boiler drain | 20.Closed expansion vessel | 31.Recirculation pump |
| 10.Delivery | 21.Level indicators | 32.Heat exchanger |
| 11.Return | 22.Manometer | 33.D.H.W. storage |

Closed-circuit system layout for heating, boilers model ASX-ASGX EN-TNX-TNOX-TNOX.e



Description

- | | | |
|--------------------------------|-------------------------------|----------------------------------|
| 1.Boiler | 12.System pumps | 22.Manometer |
| 2.Safety pressure switch | 13.Flow switch | 23.Air supply pressure switch |
| 3.Thermometer | 14.Water supply | 24.Safety pressure switch |
| 4.Manometer | 15.Water softener | 25.Level regulation probes |
| 5.Safety thermostat | 16.Water load solenoid valve | 26.Expansion vessel safety valve |
| 6.Safety valves | 17.Water supply tank | 27.Expansion vessel drain |
| 7.Burner | 18.Water tank level regulator | 28.Air supply |
| 8.Fuel shut-off solenoid valve | 19.System replenishing pump | 29.Air supply solenoid valve |
| 9.Boiler drain | 20.Closed expansion vessel | 30.Use |
| 10.Delivery | 21.Level indicators | 31.Recirculation pump |
| 11.Return | | |

STEAM

SUPERHEATED WATER

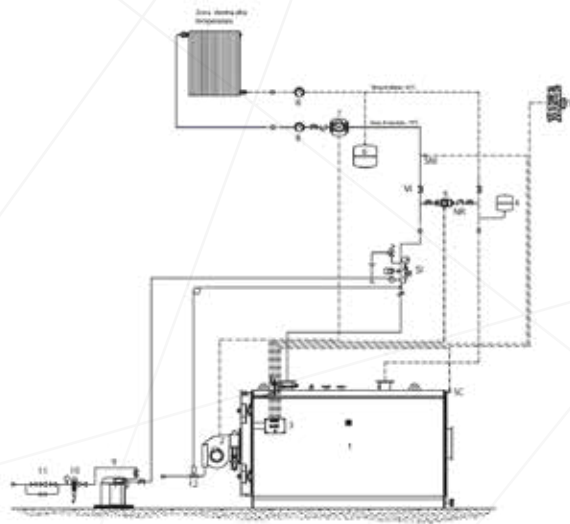
THERMAL OIL

HOT WATER

ACCESSORIES

SYSTEM LAYOUTS

**System layout for boilers of the following models
TNX - TNOX - REX (400-600) - REX F (400-600)**



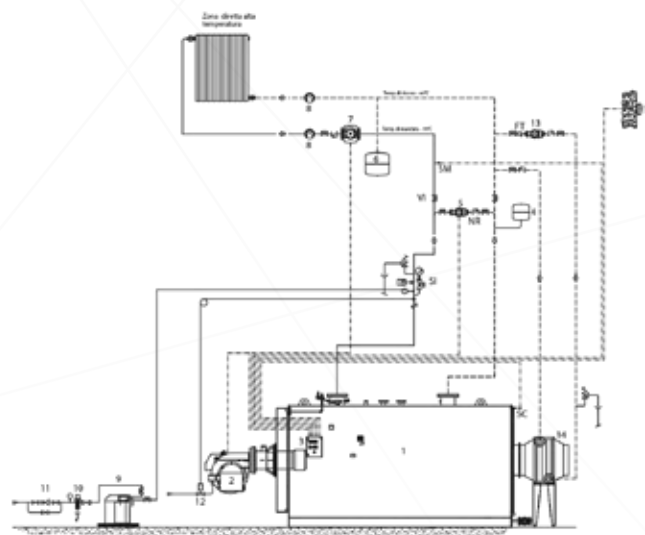
Description

- 1.Boiler
- 2.Burner
- 3.Boiler control panel
- 4.Boiler expansion vessel
- 5.Anti-condensate pump
- 6.System expansion vessel

- 7.System pump
- 8.Thermometer
- 9.Water treatment
- 10.Filter
- 11.Water feed system
- 12.Fuel shut-off valve

- SE External probe
- SM Water delivery probe
- SC Boiler probe
- NR Non-return valve
- VI Shut-off valve
- SI I.S.P.E.S.L safety

**System layout for boilers of the following models
TNX - TNOX - REX (400-600) - REX F (400-600) with energy saver**



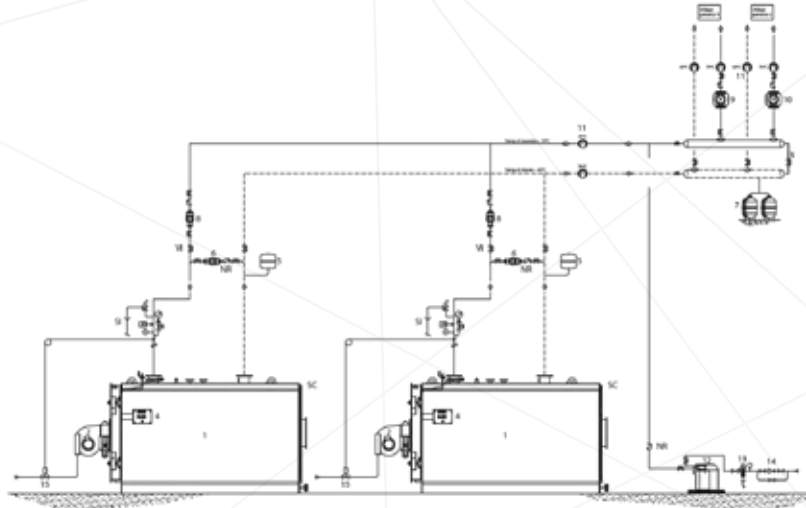
Description

- 1.Boiler
- 2.Burner
- 3.Boiler control panel
- 4.Boiler expansion vessel
- 5.Anti-condensate pump
- 6.System expansion vessel
- 7.System pump

- 8.Thermometer
- 9.Water treatment
- 10.Filter
- 11.Water feed system
- 12.Fuel shut-off valve
- 13.Recovery unit pump
- 14.Energy saver

- SE External probe
- SM Water delivery probe
- SC Boiler probe
- NR Non-return valve
- VI Shut-off valve
- SI I.S.P.E.S.L safety
- FT Filter

**System layout for 2 cascade boilers of the following models
TNX - TNOX - REX (400-600) - REX F (400-600)**



Description

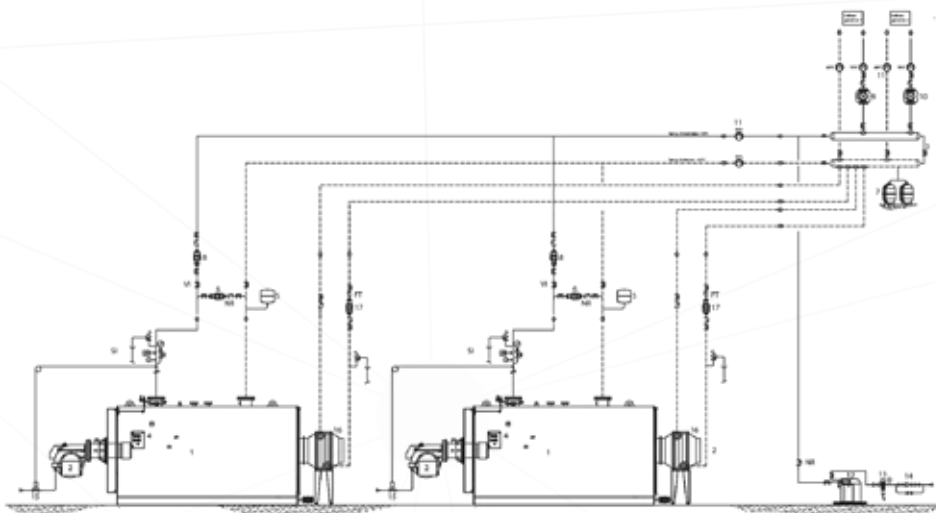
- 1.Boiler
- 2.Burner
- 3.By-pass valve
- 4.Boiler control panel
- 5.Boiler expansion vessel
- 6.Anti-condensate pump
- 7.System expansion vessel

- 8.Boiler circuit pump
- 9.High temperature system pump (general use 1)
- 10.High temperature system pump (general use 2)
- 11.Thermometer
- 12.Water treatment

- 13.Filter
- 14.Water feed system
- 15.Fuel shut-off valve

- NR** Non-return valve
- VI** Shut-off valve
- SI** I.S.P.E.S.L safety

**System layout for 2 cascade boilers of the following models
TNX - TNOX - REX (400-600) - REX F (400-600) with energy saver**



Description

- 1.Boiler
- 2.Burner
- 3.By-pass valve
- 4.Boiler control panel
- 5.Boiler expansion vessel
- 6.Anti-condensate pump
- 7.System expansion vessel
- 8.Boiler circuit pump

- 9.High temperature system pump (general use 1)
- 10.High temperature system pump (general use 2)
- 11.Thermometer
- 12.Water treatment
- 13.Filter
- 14.Water feed system

- 15.Fuel shut-off valve
- 16.Energy saver
- 17.Recovery unit pump

- NR** Non-return valve
- VI** Shut-off valve
- SI** I.S.P.E.S.L safety
- FT** Filter



Range of products and accessories dedicated to heat recovery.

Solutions characterised by production flexibility, capable of satisfying any market requirement, regulatory constraint or installation criticality.

ENERGY EFFICIENCY AREA



ENERGY EFFICIENCY

RANGE	WH	p. 184
	BAX	p. 188
	ECXV	p. 190
	ECO-G	p. 192
	Fin-e	p. 194

The provided figures and data are for reference only.

ICI CALDAIE SpA reserves the right to apply any modification it deems necessary to improve its products, without prior notice.

WH





DESCRIPTION

The waste-heat boilers of the WH range recover energy from hot flue gases as heat source without any supplementary combustion. These boilers are of the monobloc type, with fully automatic operation and are provided with all accessories required for quick commissioning. The WH range is characterized by a great flexibility of design and use; the boilers are designed specifically to meet any particular requirements.

ADVANTAGES

- + **Modular versions**
The boiler is available as flexible modular sections dependant on the range of required power.
- + **High water content**
- + **High operating flexibility**

FEATURES

-  **Design pressure from 1 to 25 bar**
-  **Heat output 100 ÷ 20000 kW**
- + **Easy, fast and safe installation**
The installation is very easy: you just need to connect the system to the electric, hydraulic, steam and discharge lines.
- + **Assembly and test performed in the factory**
- + **Minimum operating costs**

Waste heat recovery boiler

MODELS



WHB

Design pressure: 1 ÷ 25 bar
Steam capacity: 50 ÷ 32000 kg/h

Steam boiler with fire tubes, waste heat recovery and monobloc type, compliant with the PED Directive 2014/68/EU for indoor or outdoor installations. Complete with regulation and safety accessories for the automatic operation and control panel certified to manage the safety links of the entire boiler.



WHS

Design pressure: 4,9 ÷ 12 bar
Heat output: 233 ÷ 17000 kW

Super-heated water boiler with fire tubes, waste heat recovery and monobloc type, compliant with the PED Directive 2014/68/EU for indoor or outdoor installations. Complete with regulation and safety accessories for the automatic operation and control panel certified to manage the safety links of the entire boiler.



WHO

Design pressure: 10 bar
Heat output: 116 ÷ 9300 kW

Thermal oil heater with water finned pipes, waste heat recovery and monobloc type, compliant with the PED Directive 2014/68/EU for indoor or outdoor installation. Complete with regulation and safety accessories for the automatic operation and control panel certified to manage the safety links of the entire boiler.



WHC

Design pressure: 6 ÷ 25 bar
Heat output: 3000 ÷ 25000 kW

Hot water boiler with fire tubes, waste heat recovery and monobloc type, compliant with the PED Directive 2014/68/EU for indoor or outdoor installations. Complete with regulation and safety accessories for the automatic operation and control panel certified to manage the safety links of the entire boiler.

AVAILABLE CERTIFICATIONS



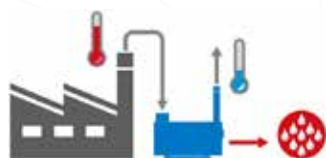
RECOMMENDED TECHNOLOGIES



APPLICATIONS

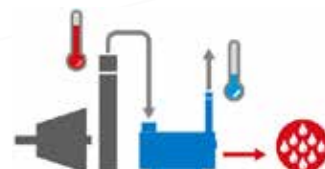
INDUSTRIAL PROCESSES

- Furnaces
- Post-combustion chamber
- Incinerators
- Industrial processes with flue gas at high temperature



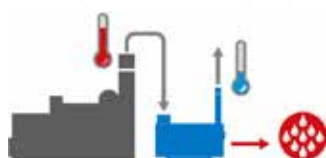
POWER PLANTS

- Turbogas plants

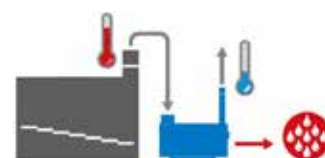


COGENERATORS

- Diesel engines
- Gas and biogas engines
- Vegetable oil engines



BIOMASS PLANTS



AVAILABLE ACCESSORIES

Code	Description	WH			
		B	S	O	C
See "Accessories" section	Automatic blowdown system for boilers of the SIXEN and GX series	■			
17090037	Salinity control unit (pneumatic TDS)	■			
17090035	Salinity control unit (electric TDS)	■			
38040100	Sample cooler	■			
See "Accessories" section	Standby feed water pump	■			
See "Accessories" section	Modulating level regulation with electric valve	■			
See "Accessories" section	Modulating level regulation with pump/s + inverter	■			
See "Accessories" section	Modulating level regulation, panel + inverter for 1 pump	■			
See "Accessories" section	Modulating level regulation, panel + inverter for 2 pumps	■			
90060010	High level safety kit	■			
90060040	Self-checking High level safety unit	■			
90060050	Self-checking Low level safety units	■			
86900071	GSS72/WH global safety system	■	■	■	■
90060060	Ladder and handrail	■	■	■	■
90060090	Side platform	■	■	■	■
90060070	2nd stage regulation pressure switch	■	■	■	■
90060078	Cascade control panel for steam boilers	■	■	■	■
QCTETERM	Eterm Easy manager panel	■	■	■	■

COMPATIBLE COMPONENTS FOR HEATING PLANT ROOM



ECXV
Vertical energy saver
Page 190



VEX
Steam accumulator
Page 213



VRC
Feed water tank
Page 198



VRC-V
Feed water tank
Page 200



DEG
Atmospheric deaerator
Page 202



EVX
Indirect steam boiler
Page 210



DEG/P
Atmospheric deaerator
Page 204



STORAGE TANK
Thermal oil
Page 216



ADD
Feed water treatment unit for steam boilers
Page 206



VEO
Thermal oil expansion vessel
Page 212



BDV
Blowdown vessel
Page 208



VEA
Super-heated water expansion vessel
Page 214



BAX



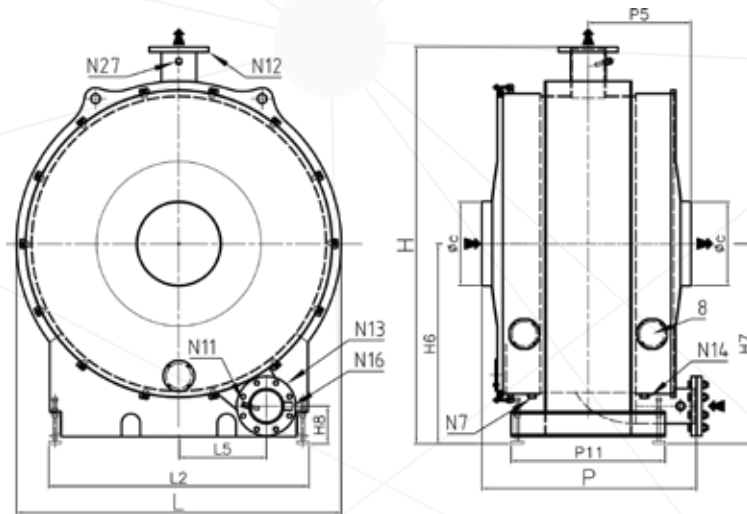
BAX is a condensing heat recovery unit built from AISI 316 Ti stainless steel that must be located after the flue gas exit output of boilers running only on natural gas or LPG. The flue gases passing through the recovery unit undergo a considerable reduction in temperature, and, if the system return temperature is below 57°C, the water contained in the gas condenses by exploiting the latent heat of condensation. The recovery unit must be hydraulically connected in series to matching boiler; the increase in water temperature is only a few degrees centigrade and it is therefore necessary to verify the minimum working temperature allowed by the boiler.

TECHNICAL DATA

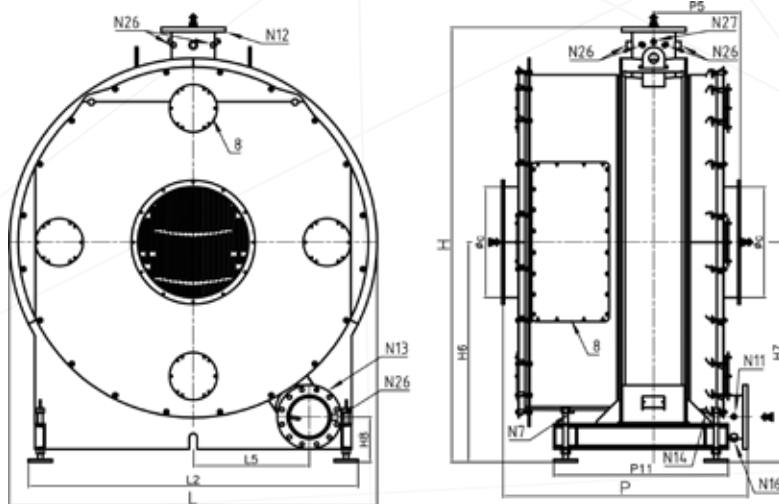
Model	Code	Boiler power	Heat output		Flue gas pressure drop	Flue gas T at output		Condensate production Delivery/ Return T 50/30°C	Hydraulic pressure drop	Total capacity	Total weight
			Return T 60°C	Return T 30°C		Return T 60°C	Return T 30°C				
			kW	kW		°C	°C				
BAX 88	88220011	500	529,7	591	0,06	68,5	38,5	80	7	393	310
		1000	1057,4	1169	0,25	72,6	42,6	144	27	393	310
		1500	1583,1	1740	0,56	76,7	46,7	201	61	393	310
		2000	2106,8	2306,9	1	80,8	50,8	254	108	393	310
BAX 128	88250018	1500	1585,9	1752,6	0,26	72,9	42,9	215	28	610	570
		2000	2111,8	2324	0,47	75,7	45,7	272	49	610	570
		2500	2636,3	2892,4	0,74	78,5	48,5	326	77	610	570
		3000	3159,5	3458,2	1,06	81,3	51,3	379	111	610	570
BAX 200	88220025	2500	2642,5	2917,5	0,3	73,5	43,5	355	23	626	1254
		3000	3168,4	3488,7	0,43	75,3	45,3	411	33	626	1254
		3500	3693,4	4058	0,59	77,1	47,1	466	44	626	1254
		4000	4217,5	4625,6	0,77	78,9	48,9	520	58	626	1254
BAX 230	88220035	3500	3696,2	4069,1	0,45	75,4	45,4	478	17	831	1619
		4000	4221,2	4638,3	0,58	77	47	533	23	831	1619
		4500	4745,4	5206,1	0,74	78,6	48,6	587	29	831	1619
		5000	5268,8	5772,5	0,91	80,1	50,1	640	36	831	1619
BAX 290	88220050	4500	4751,8	5229,7	0,46	75,6	45,6	613	29	896	2088
		5000	5276,8	5798,9	0,57	76,9	46,9	668	36	896	2088
		5500	5801,1	6366,9	0,69	78,1	48,1	722	43	896	2088
		6000	6324,8	6933,9	0,82	79,4	49,4	775	51	896	2088
BAX 350	88220070	5500	5807,4	6390,3	0,48	75,8	45,8	747	43	1036	2590
		6000	6332,3	6959,5	0,57	76,8	46,8	802	51	1036	2590
		6500	6856,8	7527,6	0,66	77,8	47,8	857	60	1036	2590
		7000	7380,7	8094,9	0,77	78,9	48,9	910	70	1036	2590
		8000	8430	9200	1	84	53	1015	91	1036	2590

CONDENSING HEAT RECOVERY UNIT

MODEL 88 ÷ 128



BAX 200 ÷ 350



Key:

- N7 Boiler-side condensate drain
- N11 Return temperature control
- N12 Recovery unit delivery
- N13 Recovery unit return

- N14 Chimney-side condensate drain
- N16 Condenser drain
- N27 Delivery temperature control

DIMENSIONS

Model	H	H6	H7	H8	L	L2	L5	P	P5	P11	Øc	N17	N12	N13	N14	N16	N27
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in/mm	DN/in	in	in	in
BAX 88	1760	890	890	163	1420	1300	250	1037	495	740	400	1"	125 PN16	125 PN16	1"	1"	1/2"
BAX 128	2064	1038	1038	181	1710	1400	420	1030	494	740	400	1"	125 PN16	125 PN16	1"	1"	1/2"
BAX 200	2380	1210	1210	256	1960	1390	410	1555	552	1160	550	1"	200 PN16	200 PN16	1"	1"	1/2"
BAX 230	2592	1317	1317	266	2170	1480	452	1552	548	1100	600	1"	200 PN16	200 PN16	1"	1 1/4"	1/2"
BAX 290	2742	1387	1387	285	2321	2080	733	1552	546	1100	700	1"	250 PN16	250 PN16	1"	1 1/4"	1/2"
BAX 350	3052	1602	1602	315	2491	2126	598	1622	546	1100	800	1"	250 PN16	250 PN16	1"	1 1/4"	1/2"

ECXV



Energy saving achieved by partial sensible heat recovery of the boiler's flue gas by preheating the feed water;

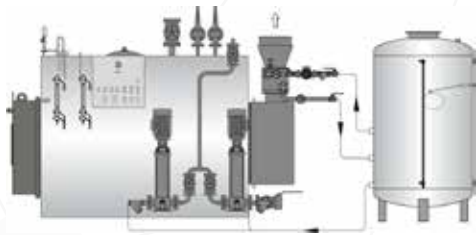
Exchanger element of flue gas/water, non-condensing type, suitable for methane gas boiler operation, manufactured from finned tubes made from carbon steel P235GH, arranged in several rows with distribution manifolds.

Frame coated hermetic carbon steel frame, directly coupled to the boiler smoke box.

Flue gas outlet fitting conical, flanged, equipped with a top circular flange for chimney connection;

Pipes and headers for instrument assembly and hydraulic connection;

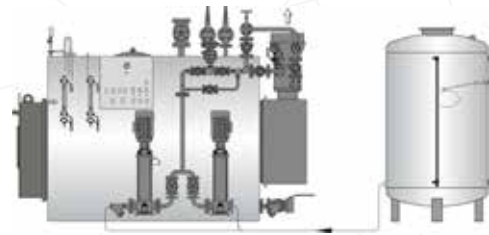
A-type installation diagram



Standard accessories for type A

- Safety valve (3 bar)
- Energy saver circulation pump
- 3 shut-off valves
- 2 water thermometers upstream and downstream of the economiser

B-type installation diagram



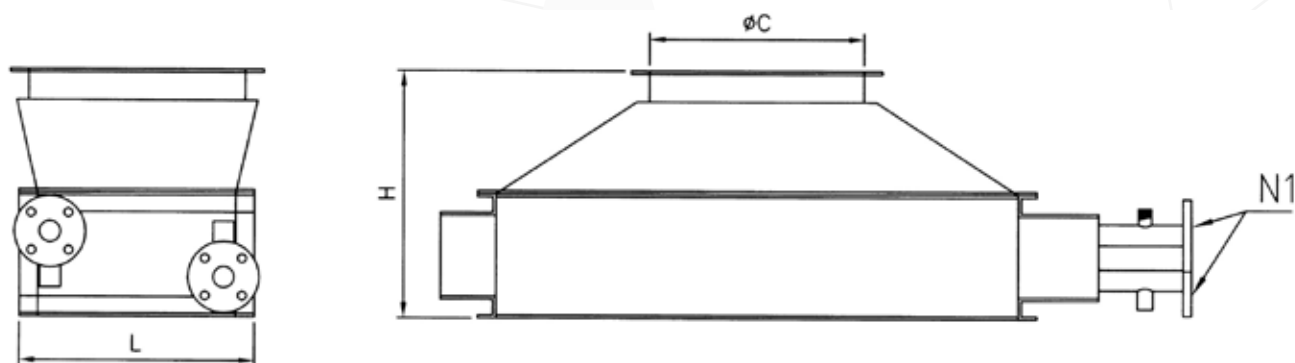
Standard accessories for type B

- PED-certified safety valve (18 bar)
- 3 by-pass and shut-off valves
- Water thermometer downstream of the economiser
- Water pressure gauge downstream of the economiser
- Economiser - boiler connection pipes

MATCHING EQUIPMENT AND TECHNICAL SPECIFICATIONS

Model	Suitable for	INSTALLATION (A)					INSTALLATION (B)				
		Code	Inlet T	Outlet T	Flow rate	Water-side pressure drop	Code	Inlet T	Outlet T	Flow rate	Water-side pressure drop
			°C	°C	l/h	bar		°C	°C	l/h	bar
ECXV 2-6	SIXEN 350	85500090	75	90	891	0,02	85500092	80	112	340	0,006
	SIXEN 500		75	90	1209	0,02		80	110	510	0,013
	SIXEN 650		75	90	1485	0,04		80	108	680	0,02
	SIXEN 800		75	90	1728	0,05		80	106	850	0,04
	SIXEN 1000		75	90	1945	0,06		80	105	1020	0,06
ECXV 8-12	SIXEN 1350	85500120	75	90	2695	0,19	85500110	80	109	1370	0,15
	SIXEN 1700/GX 1000		75	90	3096	0,26		80	107	1700	0,21
	SIXEN 2000/GX 1200		75	90	3555	0,31		80	106	2040	0,29
ECXV 15-20	SIXEN 2500/GX 1500	85500140	75	90	4701	0,13	85500135	80	107	2560	0,03
	SIXEN 3000/GX 1750		75	90	5275	0,15		80	106	3000	0,07
	SIXEN 3500/GX 2000		75	90	5791	0,18		80	105	3400	0,06
ECXV 25-35	SIXEN 4000/GX 2500	85500170	75	90	8141	0,21	85500160	80	108	4270	0,07
	SIXEN 5000/GX 3000		75	90	9231	0,26		80	107	5100	0,09
	GX 3500		75	90	10263	0,37		80	105	6000	0,13
ECXV 40-50	GX 4000	-	Installation (A) not available				85500175	80	114	6820	0,27
	GX 5000		80	113	8500	0,3					
ECXV 60-70	GX 6000	-	Installation (A) not available				85500190	80	113	10240	0,44
	GX 7000		80	111	12000	0,57					
ECXV 80	GX 8000	-	Installation (A) not available				85500220	80	112	13600	0,58
ECXV 90-100	GX 9000	-	Installation (A) not available				85500230	80	112	15300	0,18
	GX 10000		80	111	17000	0,19					
ECXV 120-130	GX 12000	-	Installation (A) not available				85500250	80	111	20000	0,3
	GX 13000		80	110	22000	0,35					
ECXV 150	GX 15000	-	Installation (A) not available				85500260	80	113	25000	0,1

Vertical energy saver



TECHNICAL SPECIFICATIONS AND DIMENSIONS

Model	Suitable for	Heat output	100% efficiency (ref. NCV)	Flue gas pressure drop	Flue gas temperature at boiler output	Weight	Dimensions				
							N1	Ø C	H	L	P
		kW	%	mbar	°C	kg	in/DN	mm	mm	mm	mm
ECXV 2-6	SIXEN 350	15	+ 6,7	0,1	119	85	1"	250	400	278	710
ECXV 2-6	SIXEN 500	21	+ 6,1	0,2	131	85	1"	250	400	278	710
ECXV 2-6	SIXEN 650	25	+ 5,6	0,3	139	85	1"	250	400	278	710
ECXV 2-6	SIXEN 800	30	+ 5,2	0,4	146	85	1"	250	400	278	710
ECXV 2-6	SIXEN 1000	34	+ 4,9	0,5	152	85	1"	250	400	278	710
ECXV 8-12	SIXEN 1350	47	+ 5,0	0,3	149	124	25	350	400	380	910
ECXV 8-12	SIXEN 1700/GX 1000	54	+ 4,7	0,4	155	124	25	350	400	380	910
ECXV 8-12	SIXEN 2000/GX 1200	62	+ 4,4	0,5	160	124	25	350	400	380	910
ECXV 15-20	SIXEN 2500/GX 1500	82	+ 4,7	0,2	155	178	40	450	550	552	1030
ECXV 15-20	SIXEN 3000/GX 1750	92	+ 4,5	0,3	158	178	40	450	550	552	1030
ECXV 15-20	SIXEN 3500/GX 2000	101	+ 4,3	0,4	162	178	40	450	550	552	1030
ECXV 25-35	SIXEN 4000/GX 2500	142	+ 4,9	0,4	152	232	40	550	575	708	1280
ECXV 25-35	SIXEN 5000/GX 3000	161	+ 4,6	0,5	157	232	40	550	575	708	1280
ECXV 25-35	GX 3500	179	+ 4,4	0,7	160	232	40	550	575	708	1280
ECXV 40-50	GX 4000	267	+ 5,7	1,9	135	269	40	650	700	642	1280
ECXV 40-50	GX 5000	315	+ 5,4	2,8	141	269	40	650	700	642	1280
ECXV 60-70	GX 6000	391	+ 5,6	2,3	138	341	50	700	700	732	1480
ECXV 60-70	GX 7000	435	+ 5,3	2,9	143	341	50	700	700	732	1480
ECXV 80	GX 8000	502	+ 5,4	2,8	142	438	50	800	700	822	1530
ECXV 90-100	GX 9000	564	+ 5,4	2,5	142	510	65	900	700	912	1630
ECXV 90-100	GX 10000	606	+ 5,2	3	145	510	65	900	700	912	1630
ECXV 120-130	GX 12000	738	+ 5,2	3	145	591	65	1100	700	912	1980
ECXV 120-130	GX 13000	780	+ 5,1	3,3	146	591	65	1100	700	912	1980
ECXV 150	GX 15000	925	+ 5,2	2,8	144	722	65	1300	700	1002	2280

ECO-G



The economiser for the ECO-G series is built into the rear smoke box of the GSX steam boilers. Opting THE economiser allows you to achieve energy savings thanks to partial sensible heat recovery of the boiler's flue gas by preheating the feed water. Fully removable construction from the rear to aid in boiler maintenance operations.

It consists of:

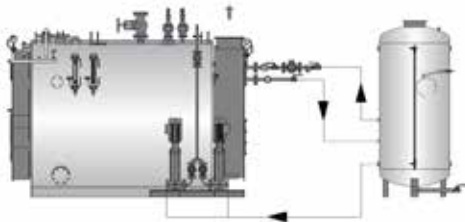
- flue gas / water exchanger non condensing element suitable for methane gas boiler operation, manufactured from finned tubes made from carbon steel P235GH or stainless steel, arranged in several rows with distribution manifolds; construction in accordance with the Directive PED 2014/68/ EU
- instrument assembly and hydraulic connection headers and pipes

The economiser of the ECO-G series can be supplied in two versions:

- **ECO-G** : with finned pipes in P235GH carbon steel
- **ECO-GN** : with finned pipes in AISI 304 stainless steel

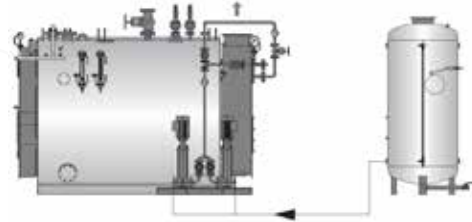
The tables below show the features and codes of the two versions.

A-type installation diagram



- Standard accessories for type A
- Safety valve (3 bar)
 - Energy saver circulation pump
 - 3 shut-off valves
 - 2 water thermometers upstream and downstream of the economiser

B-type installation diagram



- Standard accessories for type B
- PED-certified safety valve (18 bar)
 - 3 by-pass and shut-off valves
 - Water thermometer downstream of the economiser
 - Water pressure gauge downstream of the economiser
 - Economiser - boiler connection pipes

MATCHING EQUIPMENT AND TECHNICAL SPECIFICATIONS

Model	Suitable for	Installation type	Code	Heat output		100% efficiency (ref. NCV)	Max. fluid flow rate	Fluid temp.		Flue gas temp.		Pressure drop	
				kW	kcal/h			%	kg/h	inlet °C	outlet °C	inlet °C	Air nom. pow. = 20°C °C
ECO-G 1	GSX 350 - GSX 500 P	A	85500113_1	12	10.000	+ 4%	684	75	90	220	125-130	0,7	19
	GSX 500 - GSX 650 P	A	85500113_2	16	14.000	+ 4%	908	75	90	220	125-130	0,8	19
	GSX 650 - GSX 850 P	A	85500113_3	20	17.000	+ 4%	1.128	75	90	220	125-130	0,9	17
ECO-G 2	GSX 850 - GSX 1100 P	A	85500114_1	29	25.000	+ 4%	1.662	75	90	220	125-130	0,7	19
	GSX 1100 - GSX 1500 P	A	85500114_2	33	28.000	+ 4%	1.910	75	90	220	125-130	0,9	17
ECO-G 3	GSX 1500 - GSX 2000 P	A	85500112_1	51	44.000	+ 4%	2.931	75	90	220	125-130	0,7	19
	GSX 2000 - GSX 2500 P	A	85500112_2	61	52.000	+ 4%	3.472	75	90	220	125-130	0,9	17
ECO-G 4	GSX 2500 - GSX 3000 P	A	85500115_1	85	73.000	+ 4%	4.884	75	90	220	125-130	0,7	19
	GSX 3000 - GSX 3500 P	A	85500115_2	91	78.000	+ 4%	5.208	75	90	220	125-130	0,9	17
ECO-G 5	GSX 3500 - GSX 4000 P	A	85500116_1	119	102.000	+ 4%	6.837	75	90	220	125-130	0,7	19
	GSX 4000 - GSX 5000 P	A	85500116_2	121	104.000	+ 4%	6.944	75	90	220	125-130	0,9	17
ECO-G 6	GSX 5000 - GSX 6000 P	A	85500117_1	151	130.000	+ 4%	8.683	75	90	220	125-130	0,9	15

Economiser for steam boilers series GSX

MATCHING EQUIPMENT AND TECHNICAL SPECIFICATIONS

Model	Suitable for	Installation type	Code	Heat output		100% efficiency (ref. NCV)	Max. fluid flow rate	Fluid temp.		Flue gas temp.		Pressure drop	
				kW	kcal/h			%	kg/h	inlet	outlet	inlet	Air nom. pow. = 20°C
						°C	°C						
ECO-G 1	GSX 350 - GSX 500 P	B	85500081_1	12	10.000	+ 4%	385	80	107	220	125-130	0,7	6
	GSX 500 - GSX 650 P	B	85500081_2	16	14.000	+ 4%	595	80	105	220	125-130	0,8	7
	GSX 650 - GSX 850 P	B	85500081_3	20	17.000	+ 4%	715	80	104	220	125-130	0,9	7
ECO-G 2	GSX 850 - GSX 1100 P	B	85500082_1	29	25.000	+ 4%	935	80	107	220	125-130	0,7	6
	GSX 1100 - GSX 1500 P	B	85500082_2	33	28.000	+ 4%	1.210	80	104	220	125-130	0,9	7
ECO-G 3	GSX 1500 - GSX 2000 P	B	85500083_1	51	44.000	+ 4%	1.650	80	107	220	125-130	0,7	6
	GSX 2000 - GSX 2500 P	B	85500083_2	61	52.000	+ 4%	2.200	80	104	220	125-130	0,9	7
ECO-G 4	GSX 2500 - GSX 3000 P	B	85500084_1	85	73.000	+ 4%	2.750	80	107	220	125-130	0,7	6
	GSX 3000 - GSX 3500 P	B	85500084_2	91	78.000	+ 4%	3.300	80	104	220	125-130	0,9	7
ECO-G 5	GSX 3500 - GSX 4000 P	B	85500085_1	119	102.000	+ 4%	3.850	80	107	220	125-130	0,7	6
	GSX 4000 - GSX 5000 P	B	85500085_2	121	104.000	+ 4%	4.400	80	104	220	125-130	0,9	7
ECO-G 6	GSX 5000 - GSX 6000 P	B	85500086_1	151	130.000	+ 4%	5.500	80	104	220	125-130	0,9	6

Model	Suitable for	Installation type	Code	Heat output		100% efficiency (ref. NCV)	Max. fluid flow rate	Fluid temp.		Flue gas temp.		Pressure drop	
				kW	kcal/h			%	kg/h	inlet	outlet	inlet	Air nom. pow. = 20°C
						°C	°C						
ECO-GN 1	GSX 350 - GSX 500 P	A	85500061_1	12	10.000	+ 4%	684	75	90	220	125-130	0,7	19
	GSX 500 - GSX 650 P	A	85500061_2	16	14.000	+ 4%	908	75	90	220	125-130	0,8	19
	GSX 650 - GSX 850 P	A	85500061_3	20	17.000	+ 4%	1.128	75	90	220	125-130	0,9	17
ECO-GN 2	GSX 850 - GSX 1100 P	A	85500062_1	29	25.000	+ 4%	1.662	75	90	220	125-130	0,7	19
	GSX 1100 - GSX 1500 P	A	85500062_2	33	28.000	+ 4%	1.910	75	90	220	125-130	0,9	17
ECO-GN 3	GSX 1500 - GSX 2000 P	A	85500063_1	51	44.000	+ 4%	2.931	75	90	220	125-130	0,7	19
	GSX 2000 - GSX 2500 P	A	85500063_2	61	52.000	+ 4%	3.472	75	90	220	125-130	0,9	17
ECO-GN 4	GSX 2500 - GSX 3000 P	A	85500064_1	85	73.000	+ 4%	4.884	75	90	220	125-130	0,7	19
	GSX 3000 - GSX 3500 P	A	85500064_2	91	78.000	+ 4%	5.208	75	90	220	125-130	0,9	17
ECO-GN 5	GSX 3500 - GSX 4000 P	A	85500065_1	119	102.000	+ 4%	6.837	75	90	220	125-130	0,7	19
	GSX 4000 - GSX 5000 P	A	85500065_2	121	104.000	+ 4%	6.944	75	90	220	125-130	0,9	17
ECO-GN 6	GSX 5000 - GSX 6000 P	A	85500066_1	151	130.000	+ 4%	8.683	75	90	220	125-130	0,9	15

Model	Suitable for	Installation type	Code	Heat output		100% efficiency (ref. NCV)	Max. fluid flow rate	Fluid temp.		Flue gas temp.		Pressure drop	
				kW	kcal/h			%	kg/h	inlet	outlet	inlet	Air nom. pow. = 20°C
						°C	°C						
ECO-GN 1	GSX 350 - GSX 500 P	B	85500071_1	12	10.000	+ 4%	385	80	107	220	125-130	0,7	6
	GSX 500 - GSX 650 P	B	85500071_2	16	14.000	+ 4%	595	80	105	220	125-130	0,8	7
	GSX 650 - GSX 850 P	B	85500071_3	20	17.000	+ 4%	715	80	104	220	125-130	0,9	7
ECO-GN 2	GSX 850 - GSX 1100 P	B	85500072_1	29	25.000	+ 4%	935	80	107	220	125-130	0,7	6
	GSX 1100 - GSX 1500 P	B	85500072_2	33	28.000	+ 4%	1.210	80	104	220	125-130	0,9	7
ECO-GN 3	GSX 1500 - GSX 2000 P	B	85500073_1	51	44.000	+ 4%	1.650	80	107	220	125-130	0,7	6
	GSX 2000 - GSX 2500 P	B	85500073_2	61	52.000	+ 4%	2.200	80	104	220	125-130	0,9	7
ECO-GN 4	GSX 2500 - GSX 3000 P	B	85500074_1	85	73.000	+ 4%	2.750	80	107	220	125-130	0,7	6
	GSX 3000 - GSX 3500 P	B	85500074_2	91	78.000	+ 4%	3.300	80	104	220	125-130	0,9	7
ECO-GN 5	GSX 3500 - GSX 4000 P	B	85500075_1	119	102.000	+ 4%	3.850	80	107	220	125-130	0,7	6
	GSX 4000 - GSX 5000 P	B	85500075_2	121	104.000	+ 4%	4.400	80	104	220	125-130	0,9	7
ECO-GN 6	GSX 5000 - GSX 6000 P	B	85500076_1	151	130.000	+ 4%	5.500	80	104	220	125-130	0,9	6

Fin-e®

THE 3-STARS EFFICIENCY SYSTEM PATENTED BY ICI CALDAIE



Fin-e® is a system that increases the boiler efficiency: energy saving reduces environmental impact.

Fin-e® is an aluminium extrusion, with internal fins, inserted in the rear of the boilers' fire tubes in order to guarantee complete contact between surfaces. While flue gas transmits thermal energy along the finned surfaces, its own temperature is reduced before it reaches the smoke box and therefore it exits at the chimney at a very low temperature. The boiler, unchanged in structure, recovers efficiency without increasing the pressure in the furnace (the boiler-burner coupling does not change). The longitudinal layout of the internal fins makes the maintenance operations easier: one brush with similar geometry is enough to remove combustion residues.

Possibility to drain the condensate (cold starting) from the channel present at the bottom of Fin-e®: thanks to Fin-e® open-profile design, any condensate is drained towards the smokebox chamber without affecting the boiler body.

Benefits:

- Increase of efficiency
- Reduction of fuel consumption and CO₂ emissions
- Respect for the environment

Offered service:

- Installation of Fin-e® system by the authorised service centre
- New certification

The Fin-e® system can be applied only using **gaseous fuels.**





Components and accessories to build complete heating plant rooms.

COV

Distribution header

Distribution headers are designed to allow economic distribution of the media (steam, water, thermal oil) to the individual users.

The Distribution headers are individually designed to match the system requirements using ASTM A 106 Gr.B pipe with dished ends, and a sufficient number of flanged fittings suitably sized to match the customer's requirements.

Steam headers are also provided with a dirt leg.

External paint finish for insulation and coating purposes, undertaken on site by the customer.

Wall fixing brackets or floor support saddles are available upon request. COV headers are manufactured and tested with procedures approved according to the PED Directive 2014/68/EU.

Diameter, length and connections are designed according to the customer's requirements specified in the enquiry.



Benefits:

- Reduction of installation costs owing to use of prefabricated elements
- Space saving
- PED 2014/68/EU certification included, according to the requested category



Highly-qualified services capable of meeting the requirements of the the heat and energy saving fields.

SERVICE AREA



⊕ SERVICES

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The provided figures and data are for reference only.

ICI CALDAIE SpA reserves the right to apply any modification it deems necessary to improve its products, without prior notice.



INDUSTRIAL AREA

The services on this page are available for:

Industrial start-up

The start-up assistance of an industrial line boiler (steam, super-heated water and waste-heat boilers) is divided into the following categories.

- Start-up assistance of boilers without GSS
- Start-up assistance of boilers with GSS24/GSS 72 module B+D
- Hot functional test of boilers with GSS24/GSS 72 module F
- Industrial start-up assistance abroad
- Industrial start-up assistance with performance test

Start-up assistance of boilers without GSS

The start-up assistance of a boiler without GSS is provided by specialised technicians of ICI Caldaie or authorised service centres at the customer's heating plant room.

During the start-up, the presence of a technician is not compulsory, but it is very useful as a training occasion for the maintenance technician.

With regard to boilers installed in Italy, the only obligation of the customer is the request of the boiler commissioning to the competent INAIL office as per Ministerial Decree No. 329 of 1 December 2004.

Start-up assistance of boilers with GSS24/GSS72

The start-up assistance of a boiler with GSS 24/72 is provided by specialised technicians of ICI Caldaie or authorised service centres at the customer's heating plant room.

During the start-up, the presence of qualified technicians is very useful as a training occasion.

Boilers with GSS 24/72 are supplied by ICI Caldaie already certified according to modules B+D as per PED Directive 2014/68/EU. With regard to boilers installed in Italy, the only obligation of the customer is the request of the boiler commissioning to the competent INAIL office as per Ministerial Decree No. 329 of 1 December 2004.

Hot functional test of boilers with GSS24/GSS 72 module F

The assembly test of a boiler with GSS 24/72 can be performed in the presence of an appointed Notified Body at the ICI Caldaie facilities or customer's heating plant room.

If the assembly test is performed at the ICI Caldaie facilities, the presence of a technician, after the installation of a boiler, is not compulsory, but it is useful as a training occasion for the maintenance technician.

Boilers with GSS 24/72 are certified by ICI Caldaie according to modules B+D as per PED Directive 2014/68/EU. The customer does not have to request the commissioning since the product is compliant with art. 5, letter D of the Ministerial Decree No. 329 of 1 December 2004. The only obligation of the customer is to notify boiler commissioning to the competent INAIL office.

Industrial start-up assistance abroad

Assistance activities during start-up will be carried out by an Italian technician appointed by ICI CALDAIE, who does not own licences or local permits to operate on steam generators.

During assistance activities the customer will have to ensure the presence of personnel authorised to operate on the above-mentioned boilers.

The activity will only have technical-functional valence but not regulatory valence.

The technician in charge cannot sign the documents having this kind of valence.

The start-up of the burner is not included, and will have to be carried out by the local service centre authorised by the manufacturer of the burner and appointed directly by the customer.

The burner technician will have to be present during the carrying out of all the assistance activities performed by the ICI CALDAIE technician.

Start-up Assistance with performance test

The performance test is performed by specialised technicians of ICI Caldaie or authorised service centres at the customer's heating plant room. It involves testing of noise and/or efficiency and/or performance values agreed at the time of sale.



INDUSTRIAL AREA

The services on this page are available for:

Preventive maintenance of steam, superheated water and WHB boilers

The customer can at any time sign with ICI an ordinary maintenance agreement that, thanks to the scheduled inspections, guarantees the boiler control and the purchased product trouble-free operation over time. The preventive maintenance requires an annual inspection by our authorised Technical Service Centres (CAT) including the following operations:

- Cleaning and visually checking the level probes
- Checking the instrument train
- Checking the safety device operation
- Checking the flue gas side
- Checking the supply pump operation through the sight glasses
- Checking the seals for any leak and replacing them if needed (material not included)
- Checking the turbulator conditions (if any)
- Checking the main control panel
- Checking the boiler functionality
- Checking the access door internal coating

Requalification of the boilers to avoid constant surveillance for 72 or 24 hours

The steam and super-heated water boilers, during their operation in a heating plant room, must be monitored by duly authorised control personnel. ICI Caldaie offers the possibility of requalification of said boilers and to extend such obligation to 72 or 24 hours by installing a Global Safety System (GSS72 or GSS24) for steam and super-heated water boilers; this system allows leaving the operating heating plant room “unattended” for maximum 72 or 24 operating hours. Such operation has a variable cost according to the accessories already present in the boiler.

Retubing Boilers

The service involves the replacement of the fire tubes of boilers by ICI Caldaie or third parties, where the presence of leaks was ascertained. The job involves the mechanical removal of the broken tube and subsequent replacement involving welding. Upon each step of the procedure, the necessary non-destructive tests required by law will be carried out to ensure the success of the work.



INDUSTRIAL AREA



RESIDENTIAL AREA

The services on this page are available for:

Warranty extension

ICI Caldaie allows extending the commercial warranty according to the selected duration, starting from the delivery date. The base warranty extension provides only the warranty extension.

No warranty is provided if the damage is caused by:

- improper or unsuitable use
- installation or first start-up performed by the purchaser or third parties in a wrong way
- use or presence of chemical substances, electro-chemical or electric flow, not due to us
- failure to comply with the instructions provided in the user manual, improper changes or modifications, in any case performed by the purchaser or third parties
- faults of the elements not supplied by ICI Caldaie
- aggressive or halogen vapours in the environment (combustion air)
- corrosion due to oxygen
- presence of limestone
- use of the product even if faulty
- wrong electric power supply or connections
- pressure or gas type different from the ones specified for the product

Warranty application is granted by ICI CALDAIE SPA and is subjected to standard conditions of sale shown in the PRODUCT CATALOGUE.

WARRANTY

Any faults detected must be reported immediately by registered letter sent to ICI CALDAIE which reserves the right to carry out an inspection using its own personnel (direct or appointed) at the heating plant room where the problem has arisen. The part to be tested must be sent, carriage paid, to the ICI CALDAIE SPA Service to be examined. Only after this inspection, it will be possible to establish whether the fault is due to faulty material and/or manufacture, or whether it is due to an external cause. After this verification, the customer will be informed of whether or not the fault is covered by the warranty.

Furthermore, the water circulating in the system must be analysed 2 or 3 weeks after the boiler has started operation. This analysis is to be carried out by the installing company which will also bear the relative costs and the results must be attached to the plant register and communicated to ICI Caldaie within two months following the start-up of the boiler. The analysis must comply with the characteristics identified in technical manuals.

The warranty will cover only the defective part; any other expense, for example labour used for the replacement, will be charged to the person requesting the replacement.

The services on this page are available for:



INDUSTRIAL AREA



RESIDENTIAL AREA

Warranty extension

WARRANTY LIMITATIONS

Defects due to different causes not resulting from manufacturing defects are excluded from this warranty, and in particular:

- Tampering or improper adjustment of the boiler performed by the purchaser or third parties who are not part of the network of authorised Technical Assistance Centres on behalf of ICI CALDAIE SPA.
- Conditions of use not envisaged in the instructions and warnings provided on the instruction booklets of ICI CALDAIE SPA supplied with the boiler.
- Use of non-original ICI CALDAIE SPA spare parts.
- System faults, installation errors or non-conformity of the system in relation to the instructions, warnings, Laws, Regulations and applicable Technical Standards (for example: incorrect regulation, boiler supplied with incorrect gas or electrical power, use outside of the boiler type-approval field).
- Absence of exchanger between the primary circuit and the secondary one.
- Thermal shocks due for example to sudden and continuous filling of cold water into the system.
- In the event of operation with pressure below or exceeding the pressure indicated on the data plate of the boiler.
- In the event of clogging from limestone, deposits and sludge, presence of corrosion, overheating of the boiler body.
- No water in the system.
- Use of a fuel other than the indicated one to supply the boiler.
- In the case of inappropriate installations, operation or maintenance which cause damage to the boiler installed, for example poor regulation of the burner, absence of the safety elements required by current Regulations such as safety valves or suitable expansion system, or inappropriate chemical cleaning of the system.
- Use of an unsuitable product for treating the water in the system or an anti-freeze which is incompatible with the construction materials of the system.
- Failure to remove the processing waste and residues in the case of new system or removal of sludge and subsequent cleaning in pre-existing system. In both cases, the operations recommended must be carried out before the boiler of ICI CALDAIE SPA is assembled.
- Wrongful or negligent behaviour, attributable to a seller or other person unrelated to ICI CALDAIE SPA, during the transportation, handling, storage, assembly, installation and adjustment of the boiler.
- The warranty extension only refers to the boiler and excludes the accessories and materials used for the construction of the system and electrical parts.
- Failure to perform the ordinary maintenance as required by current regulations in force for the type of system and as required by the product user manual.
- Events of force majeure (for example: lightning, floods, earthquakes) or vandalism.
- Normal wear of parts (electrodes, refractory products, gaskets, knobs, indicator lights...).

Any technical assistance required to eliminate defects or faults attributable to one of the exclusion causes indicated above must be agreed separately from this Warranty and all related charges and costs will be charged to the applicant according to the price list in force of ICI Caldaie.

The ICI CALDAIE SPA warranty on the manufactured products is limited to the replacement or repair of parts of the boiler identified as being faulty and it does not extend to the repair of other materials present in the system or damage which could be caused or be related to, directly or indirectly, with the faulty part, and not even if the faulty part, or part of it, is unavailable.



INDUSTRIAL AREA



RESIDENTIAL AREA

The services on this page are available for:

Assistance for positioning and/or accessory assembly

This service includes the assistance by one of our specialised technicians during the positioning phases of the boiler in the heating plant room or during the accessory installation in the boiler.

Accessory assembly

The service includes the assembly of the accessories to the boiler once the latter is positioned in the plant room. In this case, for transport reasons, for the boiler introduction in the plant room, or because of specific needs of the customer, the accessories are installed only once the boiler is in its final position.

The following are excluded:

- Connection to the control panel and cable ducts
- Hydraulic connections to the system
- Any building and civil works
- Any crane, platforms and machinery for handling rental

Synoptic diagram

ICI Caldaie can set up a synoptic diagram for all boiler panels already connected to the Internet, allowing the remote reading and management of the systems. The dedicated web page or pages will be created based on the supplied plant layout. The synoptic diagram will be available to be viewed on any PC, tablet or Smartphone connected to the Internet (with compatible browser). For a demo, visit the website <http://www.eterm.it/ita/sinottico/lista> by entering MCE2016 as username and password.

Operation

- Saving the log data.
- Exporting the log data in tables.
- Displaying of log data on graphs (histograms, lines, pie charts, etc.). It is also possible to have more variables on a same graph or graphs of variables that cannot be measured directly but need to be calculated with mathematical formulas.
- Checking the functionality of the panel and accessories connected to it.
- Personalised alarms.
- E-mail service activation for configured alarms.
- Possibility to request one year of remote service for configuration checks and changes.

Flue gas analysis

This service includes the combustion analysis using a certified instrument; at the end of the analysis, the plant register is filled in.

Welding

We can provide assistance for repairs and/or modifications on the boilers using professional and qualified wire, electrode and TIG welders.

This service can be combined with non-destructive tests in case the repairs or changes are requested or have to be performed with the presence of third-party supervisors.

The services on this page are available for:



INDUSTRIAL AREA



RESIDENTIAL AREA

Endoscopy

Our technicians can perform endoscopic visits on ICI products in order to detect any sludge deposit or scale build-ups that can be found on the internal surfaces over time thus reducing the efficiency and performance of the boilers and leading to possible failure. We always recommend a suitable water treatment to avoid the formation of deposits and build-ups.

Burner start-up

In Italy, the start-up of the burner is normally included in the burner price whereas abroad is to be listed separately depending on the country of destination of the parts.

Maintenance of hot water and WHC boiler

The customer can at any time sign with ICI an ordinary maintenance agreement that, thanks to the scheduled inspections, guarantees the boiler control and the purchased product trouble-free operation over time. The preventive maintenance requires an annual inspection by our authorised Technical Service Centres (CAT) including the following operations:

- Visual inspection of the flue gas side;
- Checking the turbulator conditions (if any);
- Checking the main control panel;
- Inspection of the boiler insulation;
- Inspection of the gate operation (only for WHC boilers).

Software license Eterm™

Eterm™PCmanager is a Windows software for PC that allows the configuration and remote control of all Eterm™ and Nereix equipment. This software can be connected to the equipment by means of:

- Direct USB connection to all equipment;
- RS232 (serial port) direct connection to eterm™ Master equipment;
- GSM modem for eterm™ Master equipment and Boiler Control Board;
- Internet connection after free-of-charge registration of the system on www.eterm.it.

Software licenses are available in three versions:

Eterm™PCmanager base version:

- permanent base version that allows configuration, management and remote control according to the above-mentioned methods. It does not allow reading, storing and processing consumption data.

Level 2 Eterm™PCmanager version:

- in addition to configuration, management and remote control according to the above-mentioned methods, this version allows reading, storing and processing consumption data. In order to be able to exploit the advantages of this software, it is advisable to participate in the training courses (subject to payment) that ICI Caldaie organises at its headquarters at 38 Via Giovanni Pascoli, situated in Zevio (Verona). Software license can be installed on a single computer and it provides for the management of a single system.

Synoptic configurator version:

- this software version enables the user to create a synoptic of the system, that is a scheme through which it is possible to view the system and data detected by the installed equipment. The whole process can be made via WEB without installing the eterm™PCmanager software.

The eterm™PCmanager software requires Windows operating system.



RESIDENTIAL AREA

The services on this page are available for:

Assembly

Some boilers can be assembled directly in the plant room. This service is provided for all those situations where it is impossible or too difficult and expensive to introduce the whole boiler in the plant room because of its dimensions or too limited access.

The assembly operations are performed by our reliable welders on site and consequently travelling expenses are excluded. With reliable welders we mean expert professional welders already certified to perform such delicate operation.

Some boilers can be assembled directly in the plant room.

Basic service Nereix (BSN)

The service is dedicated to condominiums where ICI Nereix modules are installed and tested.

It can be applied to residential buildings with heat meters with Meter Bus output, by installing the suitable centraliser.

The service consists in loading and saving on the website www.eterm.it the consumption data transmitted automatically by the system. On the website there is a web application (etermEASYmanager) that allows the users and administrator to view and download the consumption data.

This service does not include:

- allocation calculations;
- checking the data consistency;
- alarms for faults, errors and tampering;
- ordinary and extraordinary maintenance;
- warranty extension.

Advantages for the condominium:

- reading of consumptions and monitoring of historical data using graphs;
- sending of commands to the ICI Kronos and e-Kronos environment unit (if any).

Advantages for the administrator:

- reading and storing on the web the consumption data of all residential buildings;
- exporting the consumptions in Excel tables.

Should it be not technically possible to connect or configure the system from remote, ICI Caldaie will perform an on-site operation that will be invoiced in accordance with the rate book.

ICI Caldaie reserves the right to examine whether it is possible to provide the service, that is, network coverage GSM – GPRS, presence of the “master” control unit with modem and a bus network correctly wired and functioning.

Start-up of Nereix modules

In Italy, the start-up of Nereix modules is a necessary condition before drawing up a Basic Service Nereix (BSN) contract

The described service could be unavailable in some Countries.
Please, contact our commercial department for confirmation.

GENERAL CONDITIONS OF SALE

1) INTRODUCTION

The sale is carried out under the following general conditions, which form an integral part of the contract drawn up between the Parties. Entering into the contract decrees approval of the conditions below and any modifications of the aforesaid must be carried out exclusively in writing.

2) COMPLETION OF THE CONTRACT

The contract is completed when, after receiving a purchase order, the seller confirms its acceptance to the purchaser. This acceptance can be made by a sale confirmation or by the commencement of the contract without any obligation of having to give notice to the other party.

3) DESCRIPTIVE DOCUMENTS AND STRUCTURAL CHANGES

The weights, dimensions, capacity, price, performance, and any other data represented in catalogues, lists, circulars, advertisements, illustrations and price lists are for information purposes only and are not obligatory.

The seller reserves the right to make any structural changes to his products at any time, which is deemed necessary in order to guarantee operation and efficiency.

4) PACKAGING

Unless otherwise agreed upon, the prices listed in the offers also include standard packaging of the goods;

Maritime, wood, or any other type of non-standard packaging is deemed not included in the sale price, and is to be borne by the purchaser.

5) RISK TRANSFER

Unless otherwise agreed upon in writing, the goods are sold "ex works" with reference to the EXW Incoterms® 2010 clause.

In particular, the risk, transport expenses and other relative expenses to load the goods onto the vehicle are to be borne by the purchaser from the time in which the goods are made available in compliance with the contract, provided that the seller notifies the purchaser in writing with regard to the date from which the goods can be collected

6) DELIVERY

Unless otherwise agreed upon, the delivery period shall start from the later date from the following:

- the date of completion of the contract as stipulated in Art. 2;

- the date of receipt of any payment on account or deposit made by the seller, which is provided for in the contract prior to delivery of the goods;

Unless otherwise agreed upon in writing, the delivery conditions of the said goods to be sold are deemed estimated.

If, for whatever reason, which is not an action or negligence by the seller, the purchaser fails to collect the goods at the time and place agreed upon in the contract, he shall in any case effect all payment established in the contract as though the goods were delivered. In this case, when the goods are identified, the seller shall store them at the expense and risk of the purchaser.

The seller also has the right to reimbursement of all expenses incurred to enforce the contract and not covered by any payments received, with the exception of the right to compensation for damages.

7) PRICE AND PAYMENT

Unless otherwise agreed upon, the price for the goods is agreed upon as "Ex Works". Therefore, transport expenses and any additional expenses are therefore excluded, including taxes due as local taxes.

Payment is due by the date established in the contract, without any other request or formality by the seller. Delay in payment shall result in interest accrued pursuant to Italian Legislative Decree 231/2002, which adopts and implements EU directive 2000/35/EC.

If the purchaser delays any payment whatsoever, the seller, at his discretion, shall:

- suspend or postpone obligations held;

- declare the contract terminated by way of simple written notice without prejudice to his right to be reimbursed for all expenses incurred in the performance of the contract, except for the right to compensation for damages.

8) WARRANTY AND EXCLUSIONS

The seller shall undertake to repair faults resulting from design, material or processing defects, exclusively within the following limits.

The obligation undertaken by the seller is limited to defects that occur during the period called "warranty period", which shall come into effect from risk transfer, which corresponds to the provisions of Art. 5, until the expiry of the terms set forth below;

The parties agree that the warranty includes repairs or replacement of parts, which, at the discretion of the seller, are necessary for the proper operation of the product, within the said warranty conditions, in particular, the seller recognises each construction defect found, in the following terms, for:

- Commercial range steel boiler body 36 months

- Industrial range steel boiler body 12 months

- Condensing range boiler body 36 months

Storage tank body 12 months

- Electrical and electronic parts and/or accessories 12 months

from the aforesaid date of risk transfer.

The warranty does not include maintenance operations of the devices regarding the contract of sale, which shall be borne by the purchaser;

In order to make use of the warranty as indicated in this article, the purchaser shall, without delay, give notice in writing not later than eight days, under penalty of invalidation, from the date of delivery, the defects that were detected. This action is barred after a period of one year, or other period as indicated above;

The aforesaid notification shall not release the purchaser from his obligation of payment under the terms agreed upon. Delay, failure, or incorrect payment shall result in a disclaimer of the warranty referred to in this article.

Execution of the warranty shall take place upon technical verification and recognition of the alleged defect at the premises of the seller, and according to company procedure. The purchaser of the device is to pay the fixed minimum charge for any intervention required, of the cost of transport of the pieces to be replaced, of labour costs, with the exception of those related to any repairs and any travel, food and accommodation expenses of the seller's personnel using the rate in force. Technical personnel shall be sent within the time granted by organisational requirements.

Any replacements or repairs shall not modify the start date and duration of the warranty established in the sales contract or in these general conditions. The replaced parts and components shall be the property of ICI CALDAIE S.p.a. and must be returned by, and at the expense of, the purchaser.

The seller's responsibility is solely extended to defects that emerge in the operating conditions provided by the contract and used correctly, as specified in the relative user instructions in the installation manual that always precedes or accompanies the delivery of the product. The seller's responsibility is excluded for defects resulting from faulty installation, maintenance, and use; due to insufficient capacity or abnormality of hydraulic systems, fuel supply; for use that differs from what the product was built for; for unsuitability or otherwise erroneous and incorrect supply water treatment; for corrosion caused by water condensation and aggressiveness; for badly conducted treatments; for stray currents; for negligence or inability of use; due to frost; due to lack of water; for inefficiency of the chimneys or discharges; for tampering by unqualified or unauthorised personnel; for parts subject to normal wear and tear of use, for anodes, refractories, gaskets, knobs, warning lights, etc., and in any case, for reasons not to be ascribed to ICI CALDAIE S.p.A.

In the event of failure to find the manual of use mentioned in the previous point, the purchaser shall submit a notice in writing to the seller within a period of eight days from delivery of the product. Failure to submit the said notice shall imply the manual was delivered with one of the products.

Subject to what is provided in this article, from the risk transfer of the goods and also for defects whose cause is prior to the said transfer, the seller shall not undertake other responsibilities. It expressly provides that the purchaser cannot raise any claim for injury to persons or damage to property

The parties can also establish to limit the seller's responsibility of gross negligence, unwavering the significance of all references in this regard made in these general conditions.

After the warranty duration terms, technical assistance can be carried out by charging the purchaser for any replaced parts or for expenses related to repairs, provided that all labour and travelling expenses of personnel and transport of materials are to be borne by the purchaser according to the rate in force by the seller.

9) INSTALLATION AND OPERATION

ICI sells a product.

Installation is to be carried out by the purchaser, who must execute the provided technical provisions by the laws and regulations in force and, in any case, by the relative technical manual, including assembly, start-up, and operation.

10) REASONS FOR EXEMPTION FROM EXECUTION

A party is not responsible for the failed execution of any of its obligations should:

- Failed execution be due to an impediment beyond his control;

- The party, upon concluding the contract, could not be reasonably held to envisage the said impediment and its effects on the position to execute the contract;

- The party could not have reasonably avoided or overcome such an impediment or its effects;

A cause of exemption from liability pursuant to this article exempts the defaulting party from payment of damages, penalties and other contractual sanctions.

It also suspends the terms of execution of the contract for a reasonable period, excluding any counter-party's right to cancel or terminate it.

Each party can retain what he has held from execution of the contract before it was ended. The final payment must be effected without delay.

11) AMENDMENTS

Any amendment to these General Conditions of Sale can be effective only if made by means of a written act

12) APPLICABLE LAW AND PLACE OF JURISDICTION

With regard to any disputes, the parties agree that the contract shall be governed by the United Nations Convention on contracts for the international sale of goods, concluded in Vienna on 11 April 1980, signed by the Italian State on 30 September 1981, ratified by Law No. 765 on 11 December 1985, and entered into force on 1 January 1988.

The right to apply Italian law with regard to what is not expressly governed by the United Nations Convention on contracts for the international sale of goods shall be valid.

For any dispute or litigation that may arise or result from this provision, the Court of Verona shall have jurisdiction.



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