

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.

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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 consultancy

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





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ecovapor

ECOVAPOR SYSTEM

Based on the experience, technological innovation and passion of ICI Caldaie, Ecovapor is the revolutionary range of intelligent systems for steam capacity, the confluence of three research areas (combustion, heat exchange and a predictive digital platform) merged into one system.

Ecovapor optimises the process of steam production as a source of thermal energy in an economical, efficient, intelligent, safe and environmentally friendly manner.

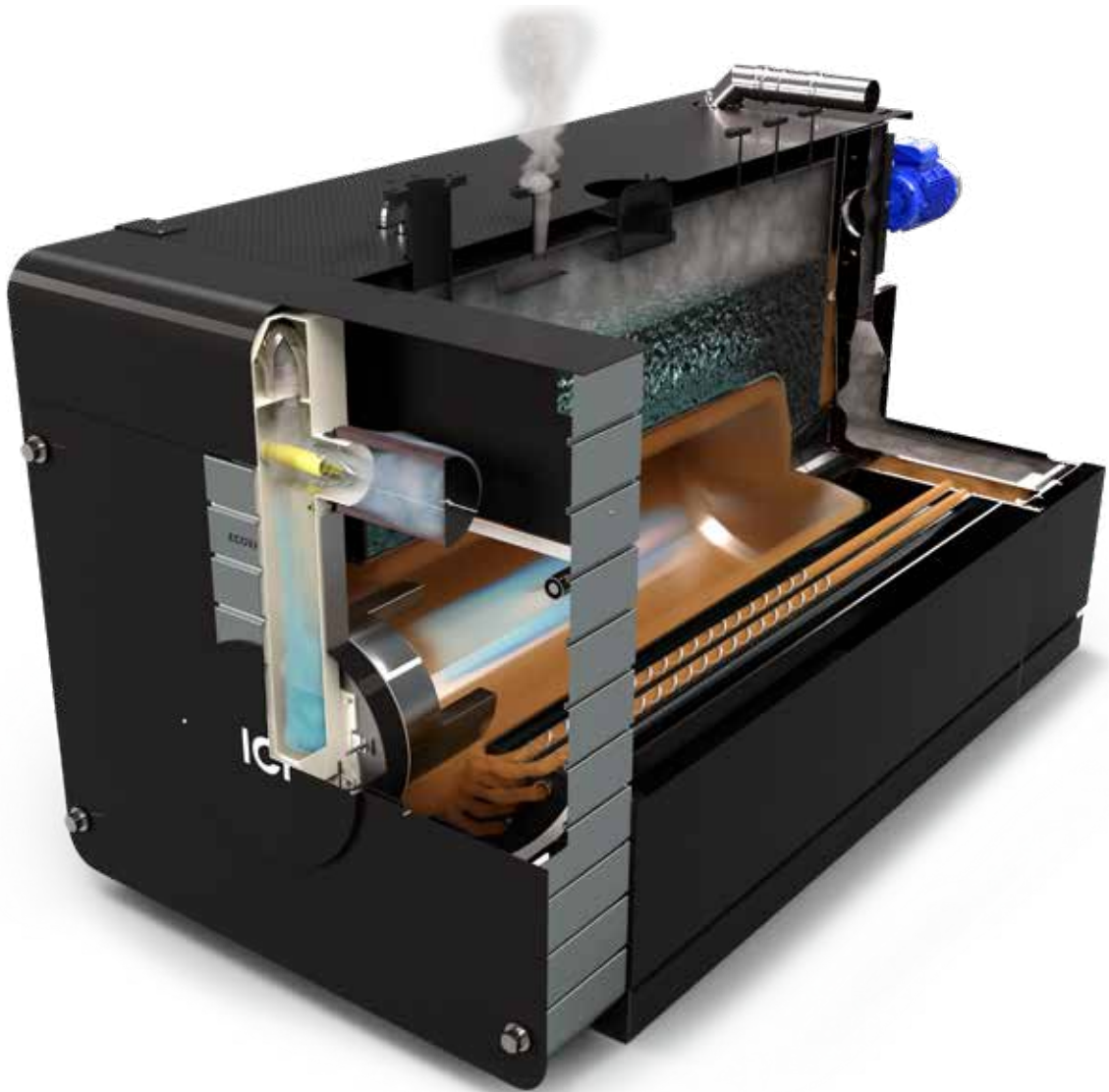
Developed as part of a project supported by the EU, Ecovapor is particularly suited for industrial applications with high modulation variability respecting the strictest NOx atmospheric emission limits and is able to communicate with other systems.



How far are you **ready to go?**

An innovative steam production system that adapts autonomously to the thermal profiles of the utilities, optimising energy consumption and respecting the strictest NOx emission limits.

More compact. **Most powerful.**



-20%
ELECTRICAL
CONSUMPTION



-15%
FUEL
CONSUMPTION



30 mg/kWh
NO_x EMISSIONS



1 VS 275
STARTING-UPS



-30%
OVERALL
DIMENSIONS






ECOVAPOR



DESCRIPTION







Thanks to the most advanced technologies on combustion, heat transfer and energy efficiency, ECOVAPOR ensures a very convenient cost of ownership combined to a very low environmental impact.

FEATURES

-  **Design pressure: 12 bar**
-  **Heat output: 238 ÷ 2044 kW**
-  **Steam capacity: 350 ÷ 3000 kg/h**
-  **Efficiency: > 94,0 %**
-  **NOx emissions: <70 mg/kWh**

Versions with NOx emission <30 mg/kWh available on request

ADVANTAGES

-  **Efficiency**
The modulation ratio, inverters on the motors, fewer thermal losses and load adaptation all contribute to decrease of electrical energy and fuel consumptions with respect to a traditional boiler.
-  **Safety**
Fuel and combustion air suction prevents dangerous flue gas leakages in the working environment.
-  **Unattended operation**
ECOVAPOR is certified for unattended operation for 24 (ECS24 Model) or 72 consecutive hours (ECS72 Model), according to the latest European Standards.
-  **Emissions**
The innovative vector flame and vacuum combustion system completely integrated into the structure keeps NOx emissions below the most restrictive international legal limits.
-  **Integration and simplicity**
Moving parts and complex electronic logics have been replaced by fixed systems.
-  **Connectivity**
ECOVAPOR adjustment and control system integrates control and adjustment functions, safety, connectivity and data logging of both the boiler and the combustion part.

Complete steam production system

MODELS



ECOVAPOR ECS24



ECOVAPOR ECS72

AVAILABLE CERTIFICATIONS



MAIN APPLICATIONS

- + Paper industry
- + Wine farms
- + Food and beverage industry
- + Meat processing
- + Distilleries
- + Beer industry
- + Chemical and pharmaceutical industries
- + Manufacturing industry
- + Hospitals
- + Dairy Industry
- + Heavy industry
- + Petrochemical industry

ECOVAPOR ECS24

Integrated system for steam production:
ECOVAPOR ECS24 consists of a series of equipment, assembled and electrically and hydraulically tested at our facility, aimed at ensuring the operation without a continuous supervision by a qualified operator for **24 hours**.



Reduced NOx emissions

Design pressure: 12 bar

Heat output: 238 ÷ 2044 kW

Steam capacity: 350 to 5000 kg / h

Efficiency: > 94,0 %

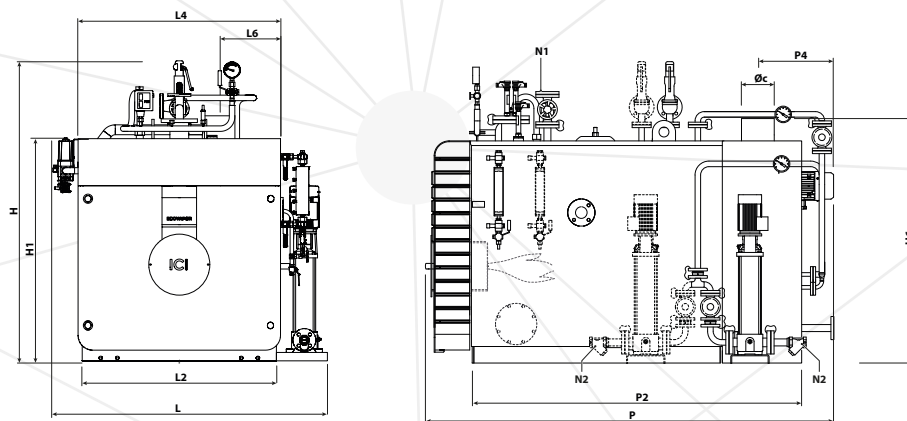
NOx emissions: <70 mg/kWh

Versions with NOx emission <30 mg/kWh available on request



TECHNICAL DATA

Model	Heat output	Heat Input	Steam Cap.	Total volume H2O	Gas consump.	Total weight
ECOVAPOR ECS24	kW	kW	kg/h	lt	Nm3/h	kg
350	238	254	350	921	26,0	2130
500	341	362	500	921	37,1	2130
650	443	471	650	1250	48,2	2500
800	545	580	800	1250	59,4	2500
1000	681	725	1000	1830	74,2	3190
1350	920	979	1350	2190	100,2	3640
1700	1158	1232	1700	2640	126,2	4350
2000	1363	1450	2000	3050	148,4	5200
2500	1703	1812	2500	3380	185,5	5870
3000	2044	2175	3000	4020	222,6	6270



DIMENSIONS

Model	H	H1	H6	L	L2	L4	L6	P	P2	ØC	N1	N2
ECOVAPOR ECS24	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
350	1825	1350	1350	1810	1180	1230	376	2478	1993	198	32	1"1/2
500	1825	1350	1350	1810	1180	1230	376	2478	1993	198	32	1"1/2
650	1930	1468	1468	1965	1300	1350	415	2800	2245	248	40	1"1/2
800	1943	1468	1468	1965	1300	1350	415	2800	2245	248	40	1"1/2
1000	2150	1680	1680	2160	1510	1560	495	2830	2228	298	50	1"1/2
1350	2150	1680	1680	2160	1510	1560	495	3240	2638	298	50	1"1/2
1700	2300	1840	1840	2370	1660	1710	495	3445	2730	348	65	1"1/2
2000	2300	1840	1840	2370	1660	1710	495	3805	3090	348	65	50
2500	2460	2000	2000	2540	1840	1890	538	4072	3178	448	80	50
3000	2540	2000	2000	2540	1840	1890	538	4570	3678	448	80	50

STANDARD EQUIPMENT

Accessories on the steam side, including:

Steam outlet globe valve
spring safety valve (no.2 standard valves only for Ecovapor 2500 model)
level indicator with direct reflection
shut-off valve groups and drain indicator

Integrated economiser consisting of:

2 check thermometers
1 pressure gauge with three-way test valve
safety valve

Water delivery unit mounted on boiler support containing:

1 vertical multi-stage centrifugal pump suitable for 120° C water with integrated inverter
1 shut-off globe valve
1 pump suction filter
2 non-return valves

Adjustment and control system allowing:

Water level adjustment which depends on the actual steam request from the system
Thermal power adjustment which depends on the actual steam request from the system
Burner modulation adjustment, for the management of any power between the minimum and maximum limits, for an optimal adaptation to the feed instant request
Adjustment of frequency and duration of automatic blowdown
Dynamic programming of the boiler operating pressure set-point

Pressure monitoring instrumentation manifold, consisting of:

large dial 3 way test valve manometer
fail safe manual reset safety pressure switch
analogue pressure transducer

Temperature monitoring

ambient temperature
flue gas temperature

Automatic conductivity probe level regulator, consisting of:

capacitive probe for level control and management
1st alarm and burner shut off probe for low level with self-checking
2nd alarm and burner shut off probe for low level with self-checking
high level safety probe

Connectivity and data logging

ECOVAPOR management system is certified to manage safety chains, has an expandable control system and has a connectivity system via LAN, WiFi, Modbus, Modem. It is fully equipped with a SIM for the transmission of data.

This allows the following benefits:

Register the product in the machine database to facilitate remote service operations.
Recording of start-up and maintenance operations.
Connection between the boiler and the other management and control systems.
Free update of the boiler control software.
Collection of data on the operating state through external and internal sensors of the plant room and boiler.
Self-checking and alarm status indications.

PRODUCT CODES

ECOVAPOR ECS24	Code
350	86440350
500	86440500
650	86440650
800	86440800
1000	86441000
1350	86441350
1700	86441700
2000	86442000
2500	86442500
3000	86443000

ECOVAPOR ECS72

Integrated system for steam production:
ECOVAPOR ECS72 consists of a series of equipment, assembled and electrically and hydraulically tested at our facility, aimed at ensuring the operation without a continuous supervision by a qualified operator for **72 hours**.



Reduced NOx emissions

Design pressure: 12 bar

Heat output: 238 ÷ 2044 kW

Steam capacity: 350 to 5000 kg / h

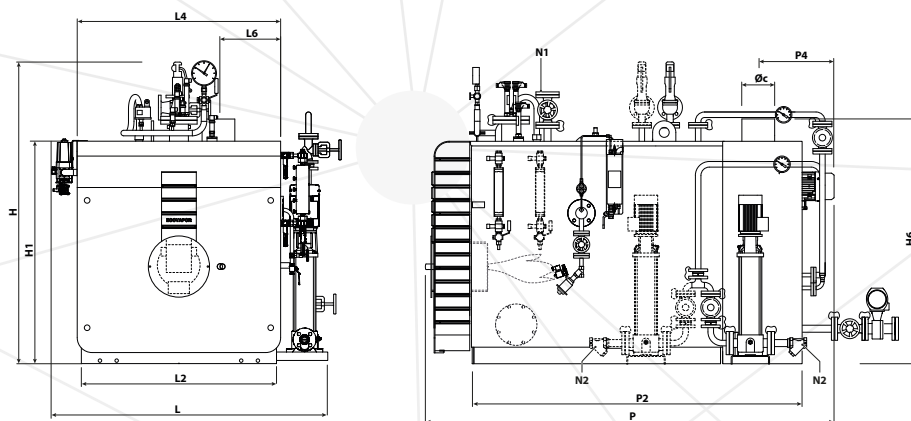
Efficiency: > 94,0 %

NOx emissions: <70 mg/kWh

Versions with NOx emission <30 mg/kWh available on request

TECHNICAL DATA

Model	Heat output	Heat Input	Steam Cap.	Total volume H2O	Gas consumption	Total weight
ECOVAPOR ECS72	kW	kW	kg/h	lt	Nm3/h	kg
350	238	254	350	921	26,0	2180
500	341	362	500	921	37,1	2180
650	443	471	650	1250	48,2	2550
800	545	580	800	1250	59,4	2550
1000	681	725	1000	1830	74,2	3240
1350	920	979	1350	2190	100,2	3690
1700	1158	1232	1700	2640	126,2	4400
2000	1363	1450	2000	3050	148,4	5250
2500	1703	1812	2500	3380	185,5	5920
3000	2044	2175	3000	4020	222,6	6320



DIMENSIONS

Model	H	H1	H6	L	L2	L4	L6	P	P2	ØC	N1	N2
ECOVAPOR ECS72	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in
350	1825	1350	1350	1810	1180	1230	376	2478	1993	198	32	1"1/2
500	1825	1350	1350	1810	1180	1230	376	2478	1993	198	32	1"1/2
650	1930	1468	1468	1965	1300	1350	415	2800	2245	248	40	1"1/2
800	1943	1468	1468	1965	1300	1350	415	2800	2245	248	40	1"1/2
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2000	2300	1840	1840	2370	1660	1710	495	3805	3090	348	65	50
2500	2460	2000	2000	2540	1840	1890	538	4072	3178	448	80	50
3000	2540	2000	2000	2540	1840	1890	538	4570	3678	448	80	50

STANDARD EQUIPMENT

Accessories on the steam side, including:

Steam outlet globe valve
spring safety valve (no.2 standard valves only for Ecovapor 2500 model)
level indicator with direct reflection
shut-off valve groups and drain indicator

Integrated economiser consisting of:

2 check thermometers
1 pressure gauge with three-way test valve
safety valve

Water delivery unit mounted on boiler support containing:

1 vertical multi-stage centrifugal pump suitable for 120° C water with integrated inverter
1 shut-off globe valve
1 pump suction filter
2 non-return valves

Adjustment and control system allowing:

Water level adjustment which depends on the actual steam request from the system
Heat Input adjustment which depends on the actual steam request from the system
Burner modulation adjustment, for the management of any power between the minimum and maximum limits, for an optimal adaptation to the feed instant request
Adjustment of frequency and duration of automatic blowdown
Entry thresholds adjustment depending on the salinity control unit TDS
Dynamic programming of the boiler operating pressure set-point

Automatic blow down system unit containing:

globe valve
rapid opening drain ball valve, with steel body, pneumatic actuator and return spring equipped with compressed air solenoid valve

Sample cooler containing:

AISI 304 barrel with an internal water-cooling coil
cooling water injection ball valve
handwheel valve for sample picking

Pressure monitoring instrumentation manifold, consisting of:

large dial 3 way test valve manometer
fail safe manual reset safety pressure switch
analogue pressure transducer

Temperature monitoring

ambient temperature
flue gas temperature

Automatic conductivity probe level regulator, consisting of:

capacitive probe for level control and management
1st alarm and burner shut off probe for low level with self-checking
2nd alarm and burner shut off probe for low level with self-checking
high level safety probe

Connectivity and data logging

ECOVAPOR management system is certified to manage safety chains, has an expandable control system and has a connectivity system via LAN, WiFi, Modbus, Modem. It is fully equipped with a SIM for the transmission of data.

This allows the following benefits:

Register the product in the machine database to facilitate remote service operations.
Recording of start-up and maintenance operations.
Connection between the boiler and the other management and control systems.
Free update of the boiler control software.
Collection of data on the operating state through external and internal sensors of the plant room and boiler.
Self-checking and alarm status indications.

Pneumatic salinity control unit TDS consisting of:

direct reading conductivity probe in the boiler
2 shut-off valves
pneumatic exhaust valve with compressed air solenoid valve

PRODUCT CODES

ECOVAPOR ECS72	Code
350	86440354
500	86440504
650	86440654
800	86440804
1000	86441004
1350	86441354
1700	86441704
2000	86442004
2500	86442504
3000	86443004

ACCESSORIES AVAILABLE FOR THE RANGE

Code	Description	ECOVAPOR	
		ECS 24	ECS 72
See "Accessories" section	Ecovapor second level indicator kit	■	■
See "Accessories" section	Ecovapor second safety valve kit	■	■
See "Accessories" section	Ecovapor backup supply pump kit	■	■
See "Accessories" section	Electric steam outlet valve kit	■	■
See "Accessories" section	Check valve kit	■	■
See "Accessories" section	Monitoring of steam flow rate	■	■
See "Accessories" section	Ecovapor natural gas consumption monitoring	■	■
96140210	Ecovapor electric energy consumption monitoring	■	■
See "Accessories" section	Ecovapor energy monitoring	■	■
86900039	Automatic purging system	■	included
38040100	Sample cooler	■	included

COMPONENTS FOR HEATING PLANT ROOM COMPATIBLE WITH THE RANGE



VRC
Feed water tank
Page 198



VRC-V
Feed water tank
Page 200



DEG
Atmospheric deaerator
Page 202



DEG/P
Atmospheric deaerator
Page 204



ADD
Feed water treatment unit for steam boilers
Page 206



BDV
Blowdown vessel
Page 208



VEX
Steam accumulator
Page 213



ecovapor

ACCESSORIES

Components designed to further improve boiler performance of ECOVAPOR series.

SYSTEM ACCESSORIES

ECOVAPOR system is equipped of adjustment and safety accessories that allow automatic operation, however, in some countries or for certain specific requests from the customer, it should be necessary to provide the supply of some optionals that are shown in this section.

SECOND LEVEL INDICATOR



Standard equipment:

- level indicator with direct reflection
- interception valve and drain indicator unit

It is supplied as an optional and/or when the prevailing Regulation in the country of destination of Ecovapor requires the second level indicator.

The kit is assembled and tested in our factory.

PRODUCT CODES

Models	Kit code
Ecovapor 350 - 2000	96140250
Ecovapor 2500 - 3000	96140251

SECOND SAFETY VALVE



It is supplied as an optional when the prevailing Regulation in the country of destination of Ecovapor requires the spring double safety valve.

The kit is assembled and tested in our factory.

The only boiler model Ecovapor 2500 is provided as a standard with the double safety valve.

PRODUCT CODES

Models	Kit code
Ecovapor 350 - 2000	96140260
Ecovapor 3000	96140261

BACKUP SUPPLY PUMP



Standard equipment:

- 1 backup feed pump with characteristics similar to service pump
- 1 pump suction filter
- 1 non-return valve on pump downstream
- 1 shut-off valves on pump downstream

To ensure a continuous operation of the boiler by avoiding any production downtime in case of a supply pump failure, a second backup pump is supplied and installed in parallel with the service one.

In the event of a service pump failure, the failure is indicated on the control panel and the exchange occurs automatically.

The backup supply pump is thus controlled in the same way as the service pump.

Both pumps, hydraulically connected to the same feed pipe, are equipped with a non-return valve and a shut-off valve dedicated to each pump to avoid the water flow towards the pump in stand-by conditions.

PRODUCT CODES

Models	Kit code
Ecovapor 350 - 800	87050015
Ecovapor 1000 - 1700	87050025
Ecovapor 2000 - 3000	87050035

ACCESSORIES FOR THE OPERATION OF MULTIPLE BOILERS

The management strategy of multiple steam boilers is a very important aspect if you want maximising the performance of a heating plant room.

In order to achieve this goal, it is important that each boiler present in the heating plant room is designed to be automatically adjusted and operated, depending on the needs of the system to be operated. The non-return valve and motorised steam outlet valve shown in this section are used for this purpose.

CHECK VALVE KIT



Standard equipment:

- Non-return valve
- No.1 corresponding flange
- No.2 corresponding gaskets
- Bolts for fixing the valve to the flange

The check valve, or non-return valve, is a valve allowing a single flow direction.

The disc check valves are used for the "sandwich" assembling between flanges; they are suitable for use with a wide range of fluids for applications on process lines, cold, hot and superheated water systems, thermal oils, compressed air, etc.

PRODUCT CODES

Models	DN	Kit code
Ecovapor 350 - 500	DN 32 PN 40	90061084
Ecovapor 650 - 800	DN 40 PN 40	90061087
Ecovapor 1000 - 1350	DN 50 PN 40	90061052
Ecovapor 1700 - 2000	DN 65 PN 40	90061063
Ecovapor 2500 - 3000	DN 80 PN 40	90061081

ELECTRIC STEAM OUTLET VALVE KIT



The butterfly valve is a safety valve with a disc-shaped shutter turning around a standard axis of the pipe thus stopping the flow. It can be used as control valve or simply as shut-off valve.

The main advantages offered by the butterfly valve are:
compact dimensions with consequent less space required
possibility to be assembled in any position
reduced weight with easy transport and maintenance
negligible load losses
long duration over time

The valve is equipped with an electric actuator controlled by the boiler management system.

PRODUCT CODES

Models	DN	Kit code
ECOVAPOR 350 - 500	32	90060128
ECOVAPOR 650 - 800	40	90060129
ECOVAPOR 1000 - 1350	50	90060130
ECOVAPOR 1700 - 2000	65	90060131
ECOVAPOR 2500 - 3000	80	90060132

ECO VAPOR SMART MANAGEMENT

System requests would often allow to turn off the boilers, lower operating pressures, modulate the load, anticipate requests, etc., and this would lead to additional savings, but it is not done because data which help to make decisions are not available.

Systems shown in this section make it possible to access data and make these decisions easier and safer, possibly with the support of ICI CALDAIE specialised technicians.

ECO VAPOR STEAM PROFILE



The curve of the steam capacity could become an important information in order to analyse load profiles of request and then make it possible to optimise adjustment parameters, with consequent greater efficiency.

It is possible to detect and represent these data by installing, downstream of the ECO VAPOR system, an appropriate kit that allows you to measure total and instant steam flow rate, transmit data to the control and adjustment system, and build relevant curves.

PRODUCT CODES

DN	Kit code
50	96140240
80	96140242
100	96140244

The following describes combinations between operating pressure and Ecovapor models, for proper selection of the instrument.

Pressure	ECO VAPOR									
bar	350	500	650	800	1000	1350	1700	2000	2500	3000
7	DN50	DN50	DN50	DN50	DN50	DN80	DN80	DN80	DN80	DN100
10	DN50	DN50	DN50	DN50	DN50	DN50	DN80	DN80	DN80	DN80
12	DN50	DN50	DN50	DN50	DN50	DN50	DN80	DN80	DN80	DN80

ECOVAPOR FUEL PROFILE



The curve of the methane gas consumption could become an important information in order to analyse the operation and responses of a boiler according to requests. General gas consumption data of the facility or whole heating plant room, including other boilers or machines, are often available and these data do not provide information useful for this purpose.

It is possible to detect and represent these data by installing, downstream of the ECOVAPOR system, an appropriate kit that allows you to measure total and instant fuel flow rate, transmit data to the control and adjustment system, and build relevant curves.

PRODUCT CODES

Models	Kit code
Ecovapor 350 - 1700	96140220
Ecovapor 2000 - 3000	96140225

ECOVAPOR POWER PROFILE



Electricity consumption of a steam boiler is a piece of information that usually is neglected or underestimated although important. Nowadays it is always useful to assess the global consumptions of a system, not just those related to fuel, and learning about the system absorption capacity makes it possible to collect data useful to detect any malfunctions in advance.

It is possible to detect and represent these data by installing, downstream of the ECOVAPOR system, an appropriate kit that allows you to measure total and instant electric energy consumptions, transmit data to the control and adjustment system, and build relevant curves.

PRODUCT CODES

Accessory code:	96140210
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ECO VAPOR FEED WATER & ENERGY PROFILE



The monitoring of the water delivery flow rate at the system inlet is a data which can be useful to obtain information on the actual operating trend of the boiler, heat lost from drains and system efficiency.

It is possible to detect and represent these data by installing, downstream of the ECOVAPOR system, an appropriate kit that allows to measure total and instant water consumptions, transmit data to the control and adjustment system, and build relevant curves.

This kit further allows you to simultaneously calculate the thermal energy recovered by the economiser, thanks to the calculation unit and two temperature probes that are part of this system.

PRODUCT CODES

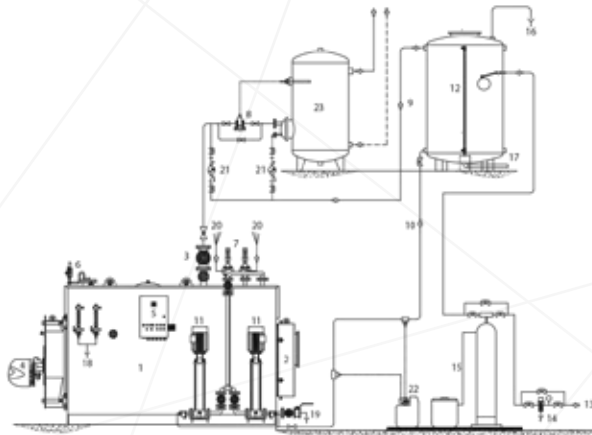
Models	Kit code
Ecovapor 350 - 1700	96140230
Ecovapor 2000 - 3000	96140235



SYSTEM LAYOUTS

SYSTEM LAYOUT

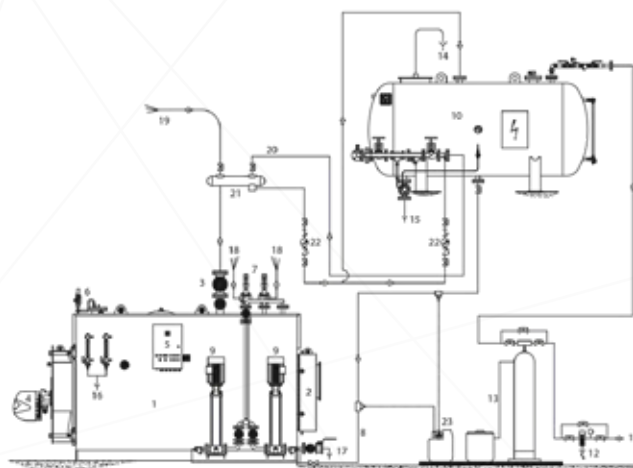
System layout with condensate recovery, for boilers of the following models:
FX-BNX-SIXEN-GSX-GSX P-GX-GXC



Description

- | | | |
|---------------------|-------------------------------|------------------------------------------|
| 1.Boiler | 9.Condensate return line | 17.Condensate tank drain |
| 2.Smokebox | 10.Pump power supply | 18.Level indicator drain |
| 3.Steam outlet | 11.Supply pumps | 19.Boiler drain |
| 4.Burner | 12.Condensate collection tank | 20.Safety valve drain |
| 5.Control panel | 13.Water supply | 21.Steam trap |
| 6.Pressure switches | 14.Filter | 22.Dosing pump |
| 7.Safety valves | 15.Water treatment | 23.Use: industrial or d.h.w water heater |
| 8.Control valve | 16.Vent | |

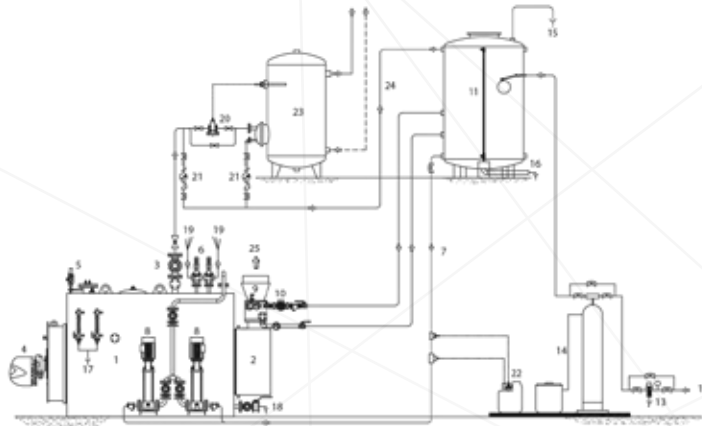
System layout without condensate recovery, for boilers of the following models:
FX-BNX-SIXEN-GSX-GSX P-GX-GXC



Description

- | | | |
|---------------------|--------------------------|--------------------------------|
| 1.Boiler | 9.Supply pumps | 17.Boiler drain |
| 2.Smokebox | 10.Deaerator | 18.Safety valve drain |
| 3.Steam outlet | 11.Water supply | 19.Direct use with waste steam |
| 4.Burner | 12.Filter | 20.Deaerator steam supply |
| 5.Control panel | 13.Water treatment | 21.Steam header |
| 6.Pressure switches | 14.Vent | 22.Steam trap |
| 7.Safety valves | 15.Tank drain | 23.Dosing pump |
| 8.Pump power supply | 16.Level indicator drain | |

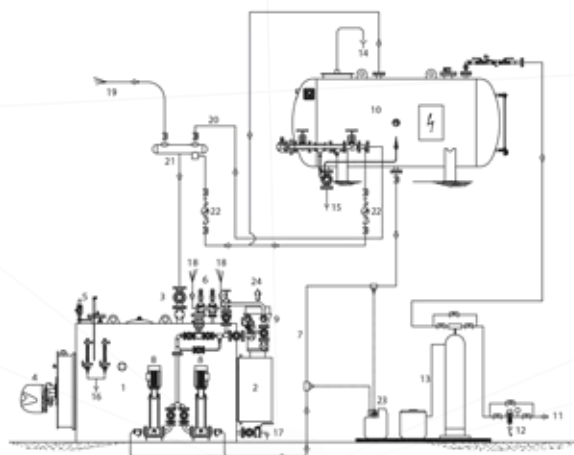
**System layout with partial condensate recovery, for boilers of the following models:
SIXEN-GSX-GSX P-GX-GXC provided with energy saver with A-type installation**



Description

- | | | |
|---------------------|----------------------------------|------------------------------------------|
| 1.Boiler | 10.Energy saver circulation pump | 19.Safety valve drain |
| 2.Smokebox | 11.Condensate collection tank | 20.Control valve |
| 3.Steam outlet | 12.Water supply | 21.Steam trap |
| 4.Burner | 13.Filter | 22.Dosing pump |
| 5.Pressure switches | 14.Water treatment | 23.Use: industrial or d.h.w water heater |
| 6.Safety valves | 15.Vent | 24.Condensate return line |
| 7.Pump power supply | 16.Condensate tank drain | 25.Flue gas |
| 8.Supply pumps | 17.Level indicator drain | |
| 9.Energy saver | 18.Boiler drain | |

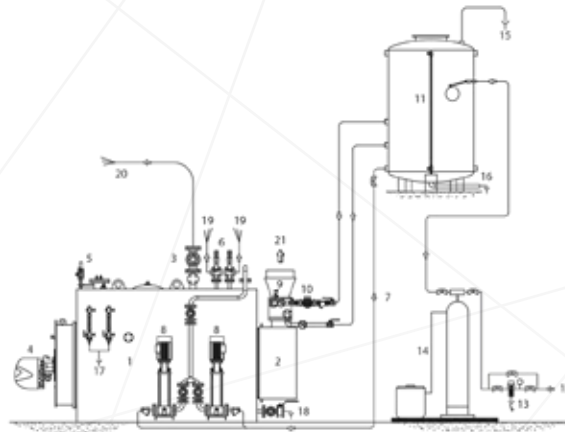
**System layout without partial condensate recovery, for boilers of the following models:
SIXEN-GSX-GSX P-GX-GXC provided with energy saver with B-type installation**



Description

- | | | |
|---------------------|--------------------------|--------------------------------|
| 1.Boiler | 9.Energy saver | 17.Boiler drain |
| 2.Smokebox | 10.Deaerator | 18.Safety valve drain |
| 3.Steam outlet | 11.Water supply | 19.Direct use with waste steam |
| 4.Burner | 12.Filter | 20.Deaerator steam supply |
| 5.Pressure switches | 13.Water treatment | 21.Steam header |
| 6.Safety valves | 14.Vent | 22.Steam trap |
| 7.Pump power supply | 15.Tank drain | 23.Dosing pump |
| 8.Supply pumps | 16.Level indicator drain | 24.Flue gas |

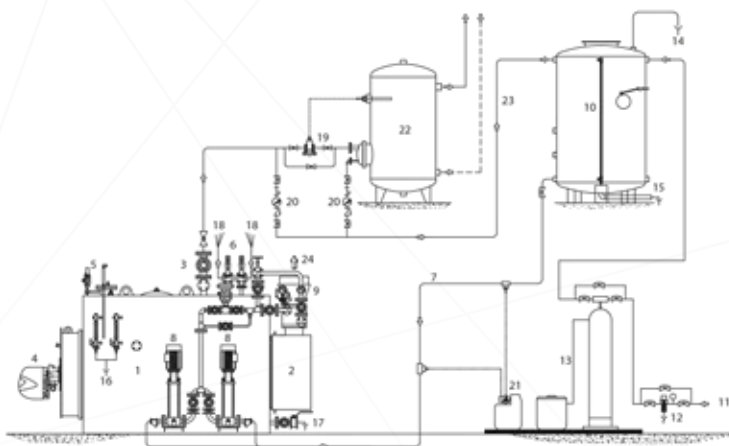
**System layout without condensate recovery, for boilers of the following models:
SIXEN-GSX-GSX P-GX-GXC provided with energy saver with A-type installation**



Description

- | | | |
|---------------------|----------------------------------|--------------------------------|
| 1.Boiler | 8.Supply pumps | 15.Vent |
| 2.Smokebox | 9.Energy saver | 16.Condensate tank drain |
| 3.Steam outlet | 10.Energy saver circulation pump | 17.Level indicator drain |
| 4.Burner | 11.Condensate collection tank | 18.Boiler drain |
| 5.Pressure switches | 12.Water supply | 19.Safety valve drain |
| 6.Safety valves | 13.Filter | 20.Direct use with waste steam |
| 7.Pump power supply | 14.Water treatment | 21.Flue gas |

**System layout with partial condensate recovery, for boilers of the following models:
SIXEN-GSX-GSX P-GX-GXC provided with energy saver with B-type installation**



Description

- | | | |
|---------------------|-------------------------------|------------------------------------------|
| 1.Boiler | 9.Energy saver | 17.Boiler drain |
| 2.Smokebox | 10.Condensate collection tank | 18.Safety valve drain |
| 3.Steam outlet | 11.Water supply | 19.Control valve |
| 4.Burner | 12.Filter | 20.Steam trap |
| 5.Pressure switches | 13.Water treatment | 21.Dosing pump |
| 6.Safety valves | 14.Vent | 22.Use: industrial or d.h.w water heater |
| 7.Pump power supply | 15.Condensate tank drain | 23.Condensate return line |
| 8.Supply pumps | 16.Level indicator drain | 24.Flue gas |



Components and accessories to build
complete heating plant rooms.

BOILER ROOM ANCILLARIES AREA



⊕ BOILER ROOM ANCILLARIES

RANGE	VRC	p. 198
	VRC-V	p. 200
	DEG	p. 202
	DEG-P	p. 204
	ADD	p. 206
	BDV	p. 208
	EVX	p. 210
	VEO	p. 212
	VEX	p. 213
	VEA	p. 214
	STORAGE TANK	p. 216
	COV	p. 217

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.

VRC

Feed water tank



The condensate collection tank (VRC) has been designed to collect condensate returning from the steam system team and to mix it with the make-up softened or demineralised water. Entirely made of AISI 316 L stainless steel.

Provided with:

- supporting legs
- upper manhole, connections and fittings

Product complete with level float control.

Should it be necessary to use a level control with probes, electric panel and solenoid valve, choose model **VRC-V**

Standard equipment:

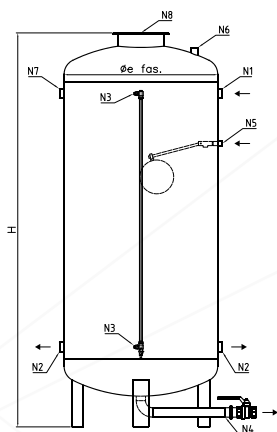
- Water replenishment valve with float in STAINLESS steel
- Level indicator
- Drain valve

CODES AND MATCHING BOILERS

Model	Code	BNX	SIXEN	GSX	GSX P	GX
VRC 200	85520046	100 - 150	-	-	-	-
VRC 300	85520048	350	350	350	-	-
VRC 500	85520047	500	500	500	500	-
VRC 800	85520056	700 - 850	650 - 800	650 - 850	650 - 850	-
VRC 1000	85520045	1000	1000	1100	1100	-
VRC 1500	85520070	1400	1350 - 1700	1500	1500	-
VRC 2000	85520054	1700 - 2000	2000	2000	2000 - 2500	1000 - 1200
VRC 2500	85520058	2650	2500	2500	-	1500
VRC 3000	85520053	3000	3000	3000	3000	1750 - 2000
VRC 4000	85520074	-	3500 - 4000	3500 - 4000	3500 - 4000	2500
VRC 5000	85520075	-	5000	5000	5000 - 6000	3000

TECHNICAL DATA

Model	Nominal pressure	TS max. operating temperature	Total volume H2O	Total weight
	bar	°C	lt	kg
VRC 200	0	90	200	32
VRC 300	0	90	300	41
VRC 500	0	90	500	56
VRC 800	0	90	800	71
VRC 1000	0	90	1000	78
VRC 1500	0	90	1500	118
VRC 2000	0	90	2000	150
VRC 2500	0	90	2500	164
VRC 3000	0	90	3000	213
VRC 4000	0	90	4000	278
VRC 5000	0	90	5000	358



Key:

- N1 Condensate return inlet from steam using system
- N2 Boiler supply pump connection fittings
- N3 Level indicator fittings
- N4 Drain connection
- N5 Vessel supply with a float valve connected to water treatment system
- N6 Atmospheric vent releasing the re-evaporation steam into the environment
- N7 Overflow drain
- N8 Hatch

DIMENSIONS

Model	H	OD	N1	N2	N3	N4	N5	N6	N7	N8
	mm	mm	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in
VRC 200	1420	450	1"1/4	1"1/4	1/2"	1"	1/2"	1"	1"1/4	240
VRC 300	1460	550	1"1/4	1"1/4	1/2"	1"	1/2"	1"	1"1/4	320
VRC 500	1900	600	1"1/4	1"1/4	1/2"	1"	1/2"	1"	1"1/4	320
VRC 800	1870	790	1"1/4	1"1/4	1/2"	1"1/4	1/2"	1"	1"1/4	320
VRC 1000	2140	800	1"1/4	1"1/4	1/2"	1"1/4	1/2"	1"	1"1/4	320
VRC 1500	2140	1000	2"	2"	1/2"	1"1/4	1/2"	1"	2"	400
VRC 2000	2230	1200	2"	2"	1/2"	1"1/4	3/4"	1"	2"	400
VRC 2500	2480	1200	2"	2"	1/2"	1"1/4	3/4"	1"	2"	400
VRC 3000	2750	1250	2"	2"	1/2"	1"1/4	3/4"	1"	2"	400
VRC 4000	2830	1400	2"	2"	1/2"	1"1/4	1"	1"	2"	400
VRC 5000	2860	1600	2"	2"	1/2"	1"1/4	1"	1"	2"	400

VRC-V

Feed water tank



The condensate collection tank (VRC-V) has been designed to collect condensate returning from the steam system team and to mix it with the make-up softened or demineralised water. Entirely made of AISI 316 L stainless steel.

Provided with:

- supporting legs
- upper manhole, connections and fittings

Standard equipment

Make-up feed water unit including:

- Water solenoid valve complete with wiring to the control panel
- Tank internal conveyor tube

Automatic conductivity probe level regulator including:

- Solenoid valve opening probe
- Solenoid valve closing probe
- Probe for alarm and low level signalling
- Probe for alarm and high level signalling
- Glass level indicator

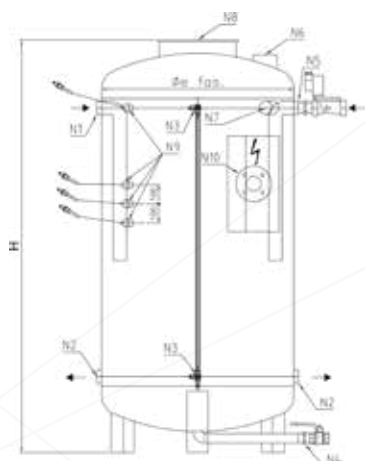
Boiler control panel, IP55 1/N ~ 230V 50 Hz

CODES AND MATCHING BOILERS

Model	Code	BNX	SIXEN	GSX	GSX P	GX
VRC-V 200	85522005	100 - 150	-	-	-	-
VRC-V 300	85522010	350	350	350	-	-
VRC-V 500	85522015	500	500	500	500	-
VRC-V 800	85522020	700 - 850	650 - 800	650 - 850	650 - 850	-
VRC-V 1000	85522025	1000	1000	1100	1100	-
VRC-V 1500	85522030	1400	1350 - 1700	1500	1500	-
VRC-V 2000	85522035	1700 - 2000	2000	2000	2000 - 2500	1000 - 1200
VRC-V 2500	85522040	2650	2500	2500	-	1500
VRC-V 3000	85522045	3000	3000	3000	3000	1750 - 2000
VRC-V 4000	85522050	-	3500 - 4000	3500 - 4000	3500 - 4000	2500
VRC-V 5000	85522055	-	5000	5000	5000 - 6000	3000

TECHNICAL DATA

Model	Nominal pressure	TS max. operating temperature	Total volume H2O	Total weight
	bar	°C	l	kg
VRC-V 200	0	90	200	60
VRC-V 300	0	90	300	75
VRC-V 500	0	90	500	100
VRC-V 800	0	90	800	110
VRC-V 1000	0	90	1000	135
VRC-V 1500	0	90	1500	160
VRC-V 2000	0	90	2000	200
VRC-V 2500	0	90	2500	220
VRC-V 3000	0	90	3000	270
VRC-V 4000	0	90	4000	310
VRC-V 5000	0	90	5000	390



Key:

- N1 Condensate return inlet from steam using system
- N2 Boiler supply pump connection fittings
- N3 Level indicator fittings
- N4 Drain connection
- N5 Vessel supply with make-up valve connected to water treatment system
- N6 Atmospheric vent that directly leads re-evaporation steam into the atmosphere: make sure that tank is always at atmospheric pressure.
- N7 Overflow drain
- N8 Hatch
- N9 Level probe connections
- N10 Control panel support

DIMENSIONS

Model	H	OD	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10
	mm	mm	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in
VRC-V 200	1420	450	1"1/4	1"1/4	1/2"	1"	1"1/4	4"	1"1/4	240	1"	65
VRC-V 300	1460	550	1"1/4	1"1/4	1/2"	1"	1"1/4	4"	1"1/4	320	1"	65
VRC-V 500	1900	600	1"1/4	1"1/4	1/2"	1"	1"1/4	4"	1"1/4	320	1"	65
VRC-V 800	1870	790	1"1/4	1"1/4	1/2"	1"1/4	1"1/4	4"	1"1/4	320	1"	65
VRC-V 1000	2140	800	1"1/4	1"1/4	1/2"	1"1/4	1"1/4	4"	1"1/4	320	1"	65
VRC-V 1500	2140	1000	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65
VRC-V 2000	2230	1200	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65
VRC-V 2500	2480	1200	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65
VRC-V 3000	2750	1250	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65
VRC-V 4000	2830	1400	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65
VRC-V 5000	2860	1600	2"	2"	1/2"	1"1/4	2"	4"	2"	400	1"	65

DEG

Atmospheric deaerator



The DEG deaerators are devices at atmospheric pressure designed for the thermophysical degassing of the steam boiler feed water. The degassing process is performed by means of a controlled steam injection inside the storage tank in order to increase the internal water temperature.

This appliance is part of the condition provided by the Art. 3 Par. 3 of the PED Directive 2014/68 / EU.

Provided with:

- steam diffuser pipe inside the tank
- sheet steel support saddles able to ensure unit support
- insulating coating with high density mineral wool and aluminium sheet finish

The deaerator is available in the S235JR steel or AISI 304 stainless steel versions.

Standard equipment:

Thermoregulating unit for temperature maintenance (90°C) in the storage tank including:

- automatic or pneumatic modulating two-way valve
- temperature sensor
- steam filter
- 2 shut-off globe valves
- bypass globe valve

Blowdown unit including:

- bypass globe valve

Make-up feed water unit including:

- water solenoid valve
- water filter
- 2 shut-off ball valves
- bypass ball valve

Automatic conductivity probe level regulator including:

- solenoid valve opening and closing probes
- probe for alarm and low level signalling

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

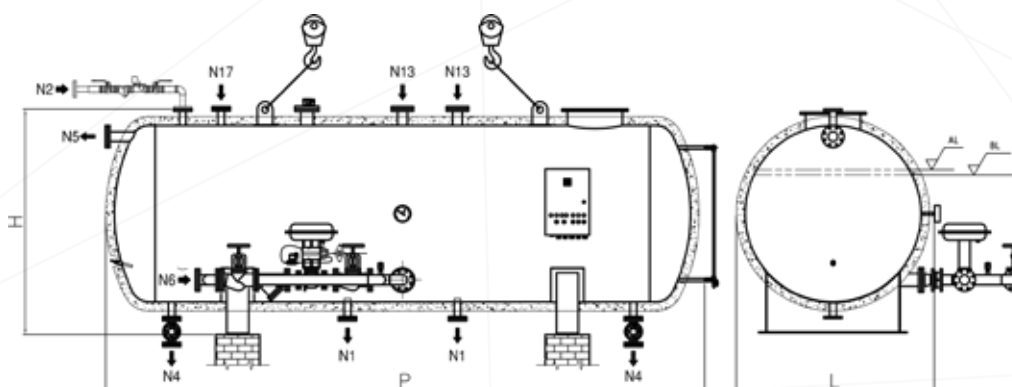
BOILERS THAT CAN BE MATCHED

Model	SIXEN	GSX	GSX P	GX
DEG 500	500	500	500	-
DEG 1000	650 - 800 - 1000	650 - 800 - 1000	650 - 800 - 1000	-
DEG 1500	1350 - 1700	1350 - 1700	1350 - 1700	-
DEG 2000	2000	2000	2000	1200
DEG 2500	2500	2500	2500	1500
DEG 3000	3000	3000	3000	1750 - 2000
DEG 4000	3500 - 4000	3500 - 4000	3500 - 4000	2500
DEG 5000	5000	5000	5000	3000
DEG 8000	-	-	6000	3500 - 4000 - 5000
DEG 10000	-	-	-	6000
DEG 12000	-	-	-	7000
DEG 15000	-	-	-	8000 - 9000
DEG 20000	-	-	-	10000 - 12000
DEG 25000	-	-	-	13000 - 15000

TECHNICAL DATA

Model	Total volume H ₂ O	Deaeration capacity	Steam consumption	Total weight	H	L	P
	lt	l/h	kg/h	kg	mm	mm	mm
DEG 500	500	500	65	280	1100	830	1800
DEG 1000	1000	1000	130	440	1250	1030	2140
DEG 1500	1500	1500	195	500	1250	1030	3040
DEG 2000	2000	2000	260	640	1550	1300	2380
DEG 2500	2500	2500	325	750	1550	1300	2980
DEG 3000	3000	3000	390	850	1800	1480	3060
DEG 4000	4000	4000	520	1050	1950	1630	2940
DEG 5000	5000	5000	650	1100	2150	1830	2880
DEG 8000	8000	8000	1040	1600	2150	1830	4230
DEG 10000	10000	10000	1300	2400	2150	1830	5450
DEG 12000	12000	12000	1560	2600	2377	2130	5028
DEG 15000	15000	15000	1950	3000	2473	2230	5528
DEG 20000	20000	20000	2600	3800	2650	2200	6810
DEG 25000	25000	25000	3250	4200	2550	2100	9050

The values indicated in the table are referred to both DEG and DEG STAINLESS STEEL types



PRODUCT CODES

Model	Code
DEG 500	85500015
DEG 1000	85500012
DEG 1500	85500026
DEG 2000	85500028
DEG 2500	85500025
DEG 3000	85500005
DEG 4000	85500014
DEG 5000	85500016
DEG 8000	85500018
DEG 10000	85500022
DEG 12000	85500031
DEG 15000	85500037
DEG 20000	85500043
DEG 25000	85500021

Model	Code
DEG 500 INOX	85500300
DEG 1000 INOX	85500044
DEG 1500 INOX	85500046
DEG 2000 INOX	85500035
DEG 2500 INOX	85500302
DEG 3000 INOX	85500304
DEG 4000 INOX	85500306
DEG 5000 INOX	85500032
DEG 8000 INOX	85500310
DEG 10000 INOX	85500312
DEG 12000 INOX	85500036
DEG 15000 INOX	85500314
DEG 20000 INOX	85500315
DEG 25000 INOX	85500316

DEG/P

Atmospheric deaerator



The DEG P pressurised thermophysical deaerator collects the treated make-up water delivered by a suitable treatment system.

The make-up water is controlled by a pneumatic, modulating 2-way valve that receives the signal from the level regulator/indicator positioned on the horizontal tank.

The water is atomized at the top of the degassing tower and falls into circular plates suitably perforated through which the heating steam passes.

On the top part of the turret there is also a fitting for possible system condensate returns and a manual oxygen blowdown valve.

This appliance has a design pressure of 0.5 bar and therefore it is not subject to the provisions of the PED Directive 2014/68/EU.

Provided with:

- vertical degassing turret, manufactured from C steel (stainless steel AISI 304 version also available) flanged to the lower reservoir with stainless steel AISI 304 jagged internal plates
- sheet steel support saddles able to ensure unit support
- insulating coating with high density mineral wool and aluminium sheet finish

Standard equipment:

Steam regulation unit to maintain the temperature (105°C) in the storage tank including:

- steam regulation modulating valve of the automatic or pneumatic type
- by-pass and shut-off valves
- steam filter
- appropriate steam injectors
- temperature probe

Steam regulation unit to maintain the correct pressure value (0.2-0.4 bar) in the degassing turret including:

- steam regulation modulating valve of the automatic or pneumatic type
- by-pass and shut-off valves
- steam filter
- appropriate steam injectors
- pressure transducer

Water regulation unit to control the level in the storage tank including:

- feed water solenoid valve
- by-pass and shut-off valves
- water filter
- level regulator with probes
- level indicator
- thermometer
- drain valve
- safety valve
- vacuum relief valve

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

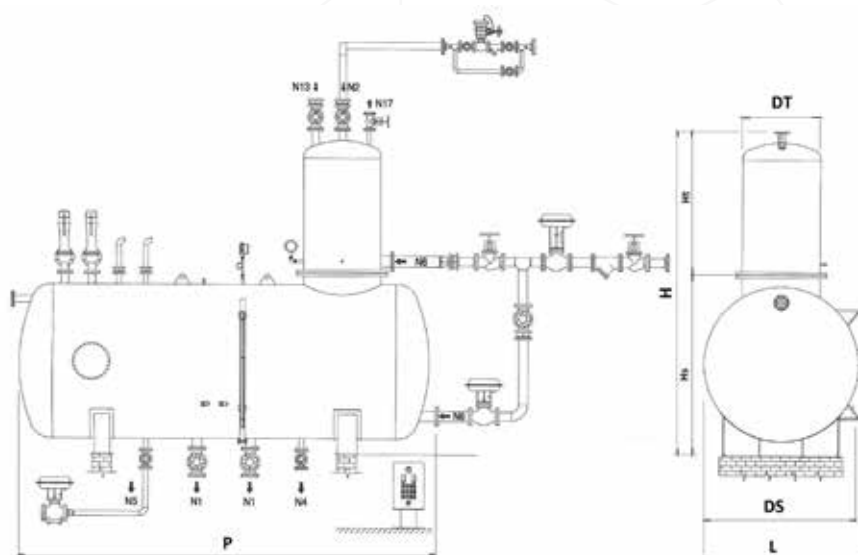
PRODUCT CODES

Model	Code
DEG 1000/P	85500323
DEG 2000/P	85500325
DEG 3000/P	85500320
DEG 5000/P	85500401
DEG 8000/P	85500038
DEG 15000/P	85500039
DEG 25000/P	85500047
DEG 30000/P	85500045
DEG 40000/P	85500048
DEG 50000/P	85500034

Model	Code
DEG 1000/P AISI304	85500319
DEG 2000/P AISI304	85500327
DEG 3000/P AISI304	85500322
DEG 5000/P AISI304	85500402
DEG 8000/P AISI304	85500052
DEG 15000/P AISI304	85500054
DEG 25000/P AISI304	85500056
DEG 30000/P AISI304	85500057
DEG 40000/P AISI304	85500058
DEG 50000/P AISI304	85500059

TECHNICAL DATA

Model	Nominal pressure	Design temperature	Total volume H ₂ O	Deaeration capacity	Steam consumption	Total weight
	bar	°C	lt	l/h	kg/h	kg
DEG 1000/P	0,5	110	1000	1000	180	450
DEG 2000/P	0,5	110	2000	2000	360	700
DEG 3000/P	0,5	110	3000	4500	810	980
DEG 5000/P	0,5	110	5000	7500	1350	1280
DEG 8000/P	0,5	110	8000	12000	2160	2500
DEG 15000/P	0,5	110	15000	22500	4050	3800
DEG 25000/P	0,5	110	25000	37500	6750	5250
DEG 30000/P	0,5	110	30000	45000	8100	6550
DEG 40000/P	0,5	110	40000	60000	10800	8000
DEG 50000/P	0,5	110	50000	75000	13500	9900



DIMENSIONS

Model	H	HS	Ht	L	DS	Dt	P	N1	N2	N4	N5	N6	N13	N17
	mm	mm	mm	mm	mm	mm	mm	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in	DN/in
DEG 1000/P	2500	1400	1100	1030	950	350	2140	40	25	50	1"1/4	40	40	2"
DEG 2000/P	2800	1550	1250	1300	1100	400	2380	40	25	50	1"1/4	40	40	2"
DEG 3000/P	3050	1550	1500	1600	1460	400	2720	40	25	50	1"1/4	40	40	2"
DEG 5000/P	3350	1590	1760	1410	1250	800	4550	40	32	50	50	50	80	2"
DEG 8000/P	3750	1950	1800	1760	1600	800	4450	80	32	50	50	100	80	50
DEG 15000/P	4250	2350	1900	2160	2000	1000	5400	100	32	50	50	125/100	80	40
DEG 25000/P	5300	2600	2700	2360	2200	1400	7000	100	32	50	100	125	125	65
DEG 30000/P	5550	2750	2800	2500	2340	1600	7250	100	80	50	100	125	125	65
DEG 40000/P	5900	2800	3100	2550	2390	1800	9300	125	100	50	100	150	125	65
DEG 50000/P	6000	2800	3200	2550	2390	2000	11400	125	100	50	100	250	150	65

ADD

Feed water treatment unit for steam boilers



Automatic system for the treatment of steam boiler make-up water, designed to prevent scale deposits and corrosion caused by dissolved gases. The treatment includes a softening process by means of ion-exchange resins and the chemical elimination of oxygen by dosing a conditioning product. All materials are non-toxic and suitable for contact with drinkable water. The softener automatic control system uses the pulsed output from the flow meter to determine the required operations as per the following logic. The regeneration is started when reaching a certain set volume of supplied water. During the regeneration phase, untreated water does not pass forwards to the system.

ADD version

- the regeneration is started when reaching a certain set volume of supplied water. During the regeneration phase, untreated water does not pass forwards to the system.

ADD D version

- The softener consists of two columns that alternate between regeneration and duty. When one chamber is in duty the other regenerates and then goes into standby mode, allowing a the constant supply of treated water without interruptions.

Standard equipment:

- ADD / ADD D softener unit consisting of:
- Resin filter
- Resin chamber in plastic reinforced by fibreglass complete with ion-exchange resin beads, head with diaphragm valves and electronic programming (2 columns for the ADD D version)
- Brine tank of suitable capacity
- Meter with pulse output head

SELECTION TABLE

Selection table	Operation 8÷12 hours a day						Operation 16÷24 hours a day					
	Hardness ≤ 30 °F			Hardness 30÷ 50 °F			Hardness ≤ 30 °F			Hardness 30÷ 50 °F		
Boiler capacity	Condensate return			Condensate return			Condensate return			Condensate return		
kg/h	30%	50%	80%	30%	50%	80%	30%	50%	80%	30%	50%	80%
100÷1020	D	C	A	E	D	C	BB	BB	AA	DD	CC	AA
1370÷2040	F	E	B	H	F	D	DD	DD	AA	FF	EE	BB
2560÷3000	G	F	D	I	H	E	EE	DD	BB	GG	FF	DD
3400÷5100	I	H	E	J	J	F	GG	FF	DD	II	HH	EE
6000÷6820	J	I	F	K	J	H	HH	GG	DD	JJ	II	FF
8500÷10240	K	J	G	L	K	I	JJ	II	FF	KK	JJ	GG

SELECTION TABLE

Se-lect.	Model (single)	Codes	Se-lect.	Model (du-plex)	Codes	Hydraulic conn.	Maximum flow rate	Resins per column	Cycles per column
						in	m ³ /h	l	m ³ °F
A =	ADD 90	ADDNM0007	AA =	ADD 90 D	ADDND0005	1"	1,6	15	90
B =	ADD 150	ADDNM0003	BB =	ADD 150 D	ADDND0006	1"	2,4	25	150
C =	ADD 210	ADDNM0001	CC =	ADD 210 D	ADDND0002	1"	2,8	35	210
D =	ADD 300	ADDNM0006	DD =	ADD 300 D	ADDND0007	1"	3,2	50	300
E =	ADD 450	ADDNM0008	EE =	ADD 450 D	ADDND0001	1"	4,1	75	450
F =	ADD 600	ADDNM0004	FF =	ADD 600 D	ADDND0003	1"	4,5	100	600
G =	ADD 800	ADDNM0009	GG =	ADD 800 D	ADDND0008	1¼"	5	130	800
H =	ADD 1050	ADDNM0002	HH =	ADD 1055 D	ADDND0009	1½"	8	175	1050
I =	ADD 1350	ADDNM0010	II =	ADD 1355 D	ADDND0010	1½"	11,5	225	1350
J =	ADD 1950	ADDNM0011	JJ =	ADD 1955 D	ADDND0011	2"	16	325	1950
K =	ADD 3000	ADDNM0012	KK =	ADD 3000 D	ADDND0012	2"	18	500	3000
L =	ADD 4300	ADDNM0013	LL =	ADD 4300 D	ADDND0013	2"	20	725	4300

On request:

DS dosing station composed of:
 Electronic dosing pump
 Product storage tank of adequate capacity
 Meter with pulse output head
 Magnetic level switch for pump stop at empty tank
 25 kg non-volatile de-oxygenating product pack

Table for matching Softeners and DS Dosing Stations

Selection of ADD	Selection of ADD D	Model	Code
A ÷ F =	AA ÷ FF =	DS 1	ADDNV0001
G =	GG =	DS 2	ADDNV0003
H ÷ J =	HH ÷ JJ =	DS 3	ADDNV0004
K ÷ L =	JJ ÷ LL =	DS 4	ADDNV0005

BDV

Blowdown vessel



The BDV blowdown vessel has been designed to receive sludge that usually settle at the bottom of the steam boilers which is discharged during a bottom blowdown operation; this sludge is cooled and allowed to settle at the bottom of the tank before being discharged to the sewer thus limiting any risks for the operator and damage to the environment.

The blowdown vessel complies with the PED Directive 2014/68/EU

Provided with:

- steel sheet supporting legs
- connections and fittings

Standard equipment

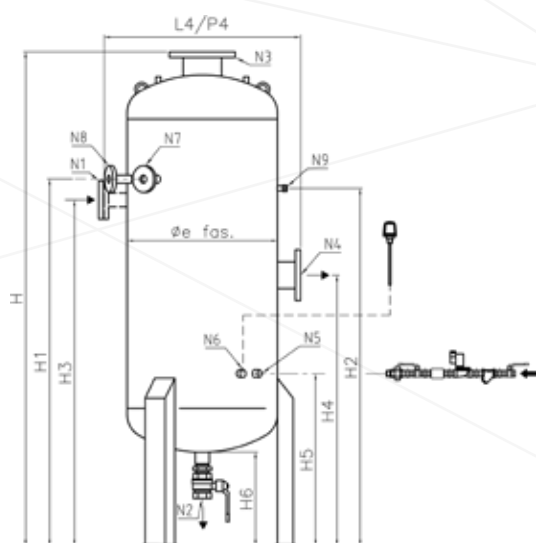
- Drain valve
- Cooling system by means of solenoid valve and thermostat

BOILERS THAT CAN BE MATCHED

Model	FX	FX DUAL	BNX	SIXEN	GSX	GSX P	GX
BDV 50	50 - 100 - 150	100 - 200 - 300	100 - 1700	350 - 1700	350 - 1500	500 - 1500	-
BDV 100	-	-	2000 - 3000	2000 - 5000	2000 - 5000	2000 - 5000	1000 - 3000
BDV 200	-	-	-	-	-	6000	3500 - 12000

PRODUCT CODES

Model	Code	Nominal pressure	Total volume H2O	Total weight
		bar	lt	kg.
BDV 50	85520064	12	500	250
BDV 100	85520085	12	1000	350
BDV 200	85520202	12	2000	650



Key:

- N1 Blowdown inlet
- N2 Drainage
- N3 Atmospheric vent
- N4 Overflow
- N5 Cooling system
- N6 Thermostat
- N7 Boiler level indicator blowdown connections
- N8 Boiler salinity blowdown connection
- N9 Manometer

DIMENSIONS

BDV	H	H1	H2	H3	H4	H5	H6	L4	P4	OD	N1	N2	N3	N4	N5	N6	N7	N8	N9
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	DN/ in	DN/ in	DN/ in	DN/ in	DN/ in	DN/ in	DN/ in	DN/ in	DN/ in
50	2174	1580	1540	1490	1165	740	400	934	934	650	50	2"	150	100	3/4"	3/4"	25	25	1/2"
100	2774	2130	2090	2040	1215	790	400	1082	1082	800	50	2"	150	100	3/4"	3/4"	25	25	1/2"
200	2934	2210	2170	2120	1295	870	400	1382	1382	1100	50	2"	150	100	3/4"	1"	25	25	1/2"

EVX

Indirect steam boiler



Design pressure 12 (15 bar upon request)

The EVX-series steam boilers are horizontal semi-fixed boilers provided with an exchange coil containing a primary fluid such as thermal oil or super-heated water, complete with regulation and safety accessories.

Provided with:

- sheet steel support saddles and section bar support base.
- insulating coating with high density mineral wool and aluminium sheet finish.

Standard equipment

Steam-side accessory unit including:

- Steam outlet/crown valve
- 2 spring safety valves
- 2 reflex level indicator gauges
- 2 indicator drain and shut-off valve units

Pressure monitoring instrumentation manifold including:

- Large dial 3 way test valve manometer
- Limit pressure switch
- Manual reset safety pressure switch

Automatic conductivity probe level regulator including:

- Pump start probe
- Pump stop probe
- Probe for low level

Blowdown unit including:

- Purge shut-off valve
- Quick exhaust valve with manual lever

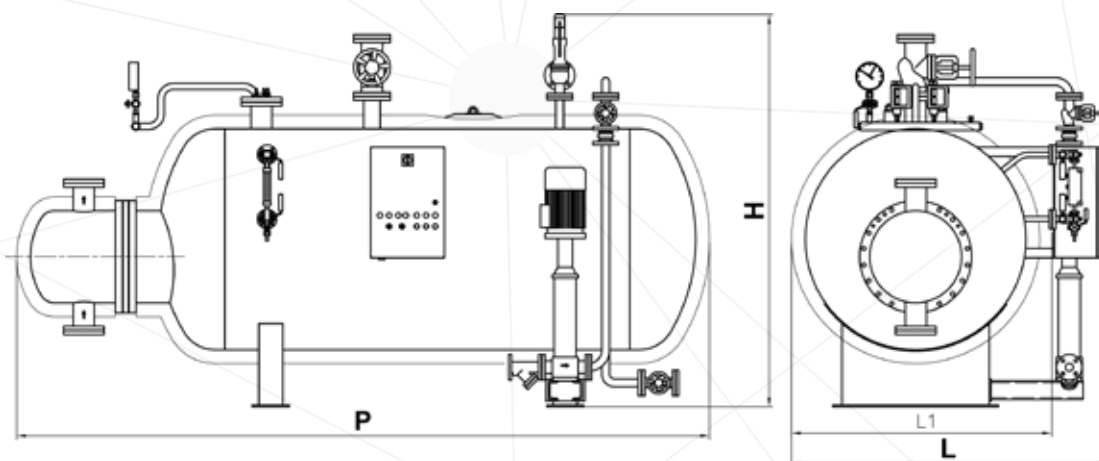
Feed water unit mounted on support including:

- 1 vertical multistage centrifugal pumps suitable for 120°C water
- 1 shut-off globe valve
- 1 pump suction filter
- 2 non-return valves

Boiler control panel, IP 55 400V/3 +N/ 50Hz

CODES AND TECHNICAL DATA

Model	Code	Heat output		Steam prod.	Min.-max. operating pressure	Volume level H2O	Total volume H2O	Total weight
		kW	kcal/h	kg/h	bar	l	l	kg
EVX 200	87140212	233	200.000	341	8-11,5	481	650	600
EVX 300	87140312	349	300.000	512	8-11,5	592	750	850
EVX 400	87140412	465	400.000	680	8-11,5	960	1270	1000
EVX 500	87140512	581	500.000	855	8-11,5	962	1300	1150
EVX 600	87140612	698	600.000	1024	8-11,5	1295	1750	1350
EVX 800	87140812	930	800.000	1370	8-11,5	1517	2035	1550
EVX 1000	87141012	1163	1.000.000	1710	8-11,5	2070	2710	1700
EVX 1200	87141212	1395	1.200.000	2050	8-11,5	2220	2915	1850
EVX 1500	87141512	1744	1.500.000	2560	8-11,5	2916	3170	2400
EVX 2000	87142012	2326	2.000.000	3400	8-11,5	3384	3775	2550
EVX 2500	87142512	2907	2.500.000	4250	8-11,5	3390	4450	3000
EVX 3000	87143012	3488	3.000.000	5100	8-11,5	3960	5500	3400
EVX 4000	87144012	4651	4.000.000	6820	8-11,5	4680	6500	3800
EVX 5000	87145012	5814	5.000.000	8500	8-11,5	5760	8000	4500
EVX 6000	87146012	6977	6.000.000	10000	8-11,5	7776	10800	5500
EVX 8000	87148012	9302	8.000.000	13600	8-11,5	8856	12300	7200
EVX 9000	87149012	10465	9.000.000	15300	8-11,5	11870	15450	9000



DIMENSIONS

Model	H	L	L1	P
	mm	mm	mm	mm
EVX 200	1450	1300	900	2000
EVX 300	1500	1350	950	2200
EVX 400	1600	1400	1000	2400
EVX 500	1700	1500	1100	2700
EVX 600	1850	1650	1250	3000
EVX 800	1850	1650	1250	3500
EVX 1000	2000	1750	1350	3600
EVX 1200	2000	1750	1350	3800
EVX 1500	2250	1950	1550	3800
EVX 2000	2250	1950	1550	3800
EVX 2500	2300	2050	1550	4300
EVX 3000	2400	2150	1650	4500
EVX 4000	2500	2250	1750	4600
EVX 5000	2650	2350	1850	4900
EVX 6000	2800	2500	2000	5900
EVX 8000	3000	2650	2150	6300
EVX 9000	3325	2790	2290	6415

Thermoregulating unit (REG) for controlling and setting the evaporator output pressure
Hydraulic connections between the EVX indirect steam boiler and the relevant boiler

VEX

Steam accumulator



Design pressure 5 or 12 bar

The VEX series steam accumulators are semi-fixed, horizontal, complete with accessories.

Our accumulator receives steam from a boiler, therefore it has no internal coil for heat exchange. During normal operation a portion of the steam condenses; therefore, when running, the steam accumulator is partially filled with water.

If the steam demand exceeds the boiler maximum flow, a portion of the water inside the accumulator evaporates making up for the high instantaneous steam demand.

The VEX steam accumulator complies with the PED Directive 2014/68/EU.

Provided with:

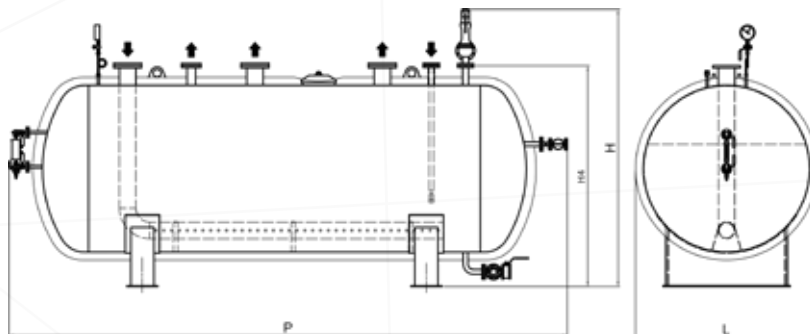
- steam diffuser pipe inside the tank
- sheet steel support saddles able to ensure unit support
- insulating coating with high density mineral wool and aluminium sheet finish

Standard equipment

- 1 Manometer
- 1 Level indicator
- 1 Steam trap on overflow fitting

Blowdown unit including:

- 1 Rapid discharge valve with manual lever
- 1 Shut-off valve



CODES, TECHNICAL SPECIFICATIONS AND DIMENSIONS

Model	Code	Design pressure bar	Total capacity lt	Volume level lt	Total weight kg	H mm	H4 mm	L mm	P mm
VEX 5000	85500104	5	5000	3450	1500	2533	1960	1610	3500
VEX 10000	85500001	5	10000	6860	2200	2823	2250	1860	5700
VEX 15000	85500013	5	15000	7500	3800	2920	2400	2050	6715
VEX 20000	85500049	5	20000	10000	6100	3073	2500	2150	7360
VEX 30000	85500033	5	30000	15000	6800	3373	2800	2400	8700
VEX 5000	85500006	12	5000	3450	1650	2533	1960	1610	3500
VEX 10000	85500011	12	10000	6860	2420	2823	2250	1860	5700
VEX 15000	85500019	12	15000	7500	4180	2920	2400	2050	6715
VEX 20000	85500010	12	20000	10000	6710	3073	2500	2150	7360
VEX 30000	85500101	12	30000	15000	7480	3373	2800	2400	8700

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.

The services on this page are available for:



INDUSTRIAL AREA



RESIDENTIAL AREA

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.

The services on this page are available for:



INDUSTRIAL AREA



RESIDENTIAL AREA

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

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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