

CERTUSS

EFFICIENT PRODUCTION WITH STEAM

CERTUSS STEAM GENERATORS
MADE IN GERMANY

STEAM
AT ITS BEST

The best steam is produced with minimal energy and water consumption—safely, quietly, efficiently, and reliably. Companies that rely on industrial steam for their production processes benefit from these qualities. These are the performance characteristics that make CERTUSS steam generators a market leader in this segment.



CERTUSS reliability

The result of rigorous quality control of every component and every stage of the manufacturing process.



STEAM SOLUTIONS FOR MORE THAN 80 INDUSTRIES

From healthcare, chemicals and pharmaceuticals to the automotive, hospitality, food and beverage industries, CERTUSS steam generators play an important role in production processes around the world.

With more than 65 years of experience, continuous research and ongoing product development, CERTUSS manufactures gas-fired, oil-fired and electric steam generators to the highest quality standards.

Our product portfolio covers a wide range of steam requirements, with fossil-fuel-fired modules offering capacities of up to 134 BHP and electric steam generators delivering up to 25 BHP per boiler.

A key feature of CERTUSS systems is their high degree of modularity. Multiple units can be combined into intelligent multi-boiler systems to efficiently meet significantly higher steam demands of up to BHP 1,000.

BUILDING EXPERTISE IN NORTH AMERICA

THE STEAM ACADEMY

Since opening in spring 2023, CERTUSS America's headquarters in Windsor, Connecticut, has served as more than just a center for sales and service operations. It is also home to **The Steam Academy**, a dedicated training facility focused on building technical knowledge and expertise.

Equipped with two fully operational, fuel-fired steam boilers, The Steam Academy provides the ideal setting for hands-on training and live demonstrations. Experienced CERTUSS technicians share their expertise and deliver technical support to help customers get the most out of their steam generation systems.

Beyond training, the facility provides a place to deepen knowledge of steam generation technology, receive maintenance and repair support, and stay up to date with the latest industry developments.

At CERTUSS, expertise goes beyond the equipment itself. We are committed to supporting our customers with the knowledge, service and technical experience they need to achieve reliable, efficient, and productive operations.





One Principle. Many Advantages.

CERTUSS WATER-TUBE BOILER TECHNOLOGY







RETHINKING STEAM

How can steam be generated with the highest levels of safety, without lengthy preheating, and with premium steam quality available on demand? The CERTUSS water-tube boiler design, combined with intelligent control technology, makes this possible.

Our team has continuously refined this technology over several decades. Combined with the characteristic vertical design of CERTUSS steam generators, it allows us to offer compact, space-saving solutions with outstanding operating efficiency. As a result, these systems benefit from simplified installation requirements in most countries.

Our systems generate exactly the amount of steam required by the production process at any given time. This makes them both cost-effective and environmentally friendly. All CERTUSS steam generators meet current environmental standards. Country-specific certifications and additional approvals are also available upon request.



Every CERTUSS heating coil is expertly engineered, manufactured, and rigorously tested at our production facility in Krefeld, Germany.

MOVING FORWARD TOGETHER

STRENGTHENING OUR GLOBAL PRESENCE



EXPERTISE AND CONTINUITY

With CERTUSS now part of Japan-based Miura Co., Ltd., a strong company with a global reach and international presence has emerged. As part of the Miura Group, the world's leading provider of boiler room solutions, we build on shared expertise, innovative technologies, and a forward-looking strategy to strengthen our position in the global steam generation market.

The CERTUSS brand remains strong and independent worldwide. As part of Miura Co., Ltd., CERTUSS benefits from an even greater global presence. Together, we operate on an international scale, bringing us closer to our customers around the world.

Our technologies help customers reduce energy consumption while making a lasting contribution to environmental protection. Ensuring reliable steam supply and delivering outstanding customer satisfaction remain at the heart of everything we do.





CERTUSS Is part of the MIURA group


CERTUSS
Steam Generators

LONG-LASTING, EFFICIENT, LOW-MAINTENANCE STEAM GENERATORS

FOR A MORE SUSTAINABLE FUTURE

ENGINEERED FOR PERFECTION

Creating the ideal steam generator takes more than engineering expertise. It takes ingenuity, technical excellence, and an unwavering attention to detail. For decades, our engineers, designers, and skilled technicians have brought these qualities together to develop steam generators that meet the highest standards of quality.
Every component undergoes rigorous quality testing, and we never settle for anything less than the best. The result: CERTUSS steam generators are easy to operate, require minimal maintenance, and deliver reliable performance for decades.







SYSTEM BENEFITS

EASY TO OPERATE

_The intuitive touchscreen interface makes all configurations and settings easy to manage.

BUILT TO LAST

_Feedwater preheated to 194–203°F helps remove dissolved oxygen, protecting the system against corrosion.

RAPID START-UP

_The CERTUSS heating coil is the core component of our water-tube boiler design. The rapid-start steam generator delivers saturated steam just three minutes after start-up.

_PRECISE CONTROL

The precisely controlled burner enables accurate steam pressure adjustment in increments of approximately 1.5 psi.

_SAFE BY DESIGN

Unlike conventional boilers, the water-tube design heats only a small volume of water, reducing potential risks to a minimum.

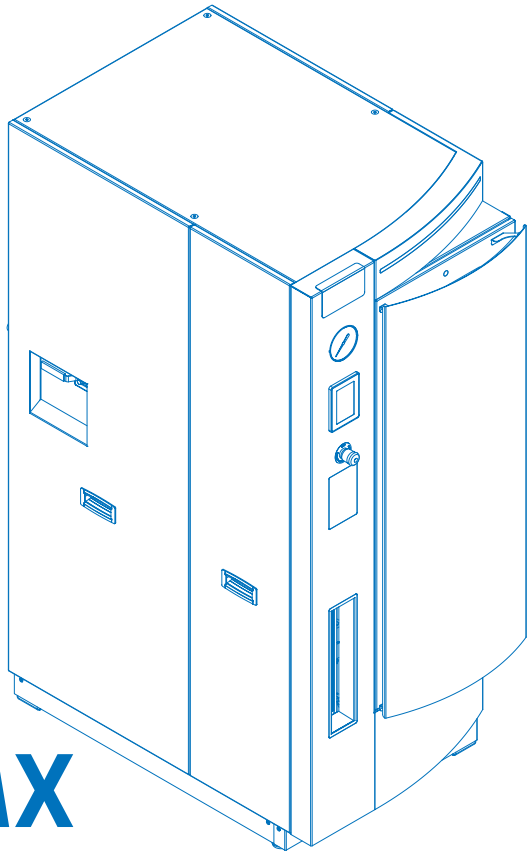
INTEGRATED PROTECTION

_The automatic safety valve protects the system against excessive pressure.

ENERGY EFFICIENT

_A distinctive feature is our triple air-insulation system combined with heat recovery. Combustion air is preheated while the outer casing is simultaneously cooled. This minimizes heat losses and reduces energy consumption. The CERTUSS Economizer further recovers valuable energy from the exhaust gases, maximizing overall system efficiency.





EMX
E110MX – E320MX



Electric, efficient, compact, modular, and powerful

The CERTUSS EMX series – a new performance class in terms of efficiency, load adjustment, and footprint. Electric steam generators are heated by stainless steel heating rods with a large heating surface. The output of the heating elements is regulated continuously via semiconductor contactors. One energy-efficient advantage is the immediate modulating output adjustment to the actual steam demand during the operating cycle.


CERTUSS



ELECTRIC WITH A LOW SPACE REQUIREMENT AND THE OPTION TO INCREASE OUTPUT



The EMX steam generators are ready for use 3–5 minutes after starting up the system and the equipment design guarantees continuous regulation of the steam output from 277 to 805 lbs/h. Each module can be expanded up to an output of 403 lbs/h. The EMX comes in four sizes with regard to output.

The compact design decreases the space requirement by up to 25%. Equipment dimensions match the standard door size (31.5 inch) for efficient assembly and the modular design provides great flexibility because modules can be arranged as desired.





EASY ACCESS [MAINTENANCE ADVANTAGE]

_FLEXIBLE ACCESS POINTS make maintenance quick and easy.

LOW WEAR [LONG LIFE]

_The LONG LIFE DESIGN guarantees high durability, reliability, and long service life.

INSTALLATION [EFFICIENT]

_The optional integrated WATER MODULE MX-CPA simplifies installation and lowers costs.

_The fully automatic 72-HOUR OPERATION increases efficiency.

CONTROL [PLUS]

_The proven THERMOTIMAT-PLUS CONTROL is optional. It provides corrosion protection; constant boiler pressure and consistent steam quality increase process reliability.

OPERATING PRESSURE [UP TO 232 PSIG]

_Safe maximum allowable working pressure (MAWP) up to 150 psig guarantees a wide range of applications.

STEAM [QUALITY]

_Steam can be produced for INDUSTRIAL, CULINARY and CLEAN STEAM NEEDS based on the application.

HMI [EASY CONTROL]

_The HUMAN-MACHINE INTERFACE guarantees easy, intuitive control in 15 languages.

_When steam demand varies, the technology enables intelligent pressure adjustment and reduces consumption.

_It also allows for CONDITION MONITORING and REMOTE SERVICES and meets all of the requirements for Industry 4.0.

ONE VIEW CONTROL [REMOTE CONTROL]

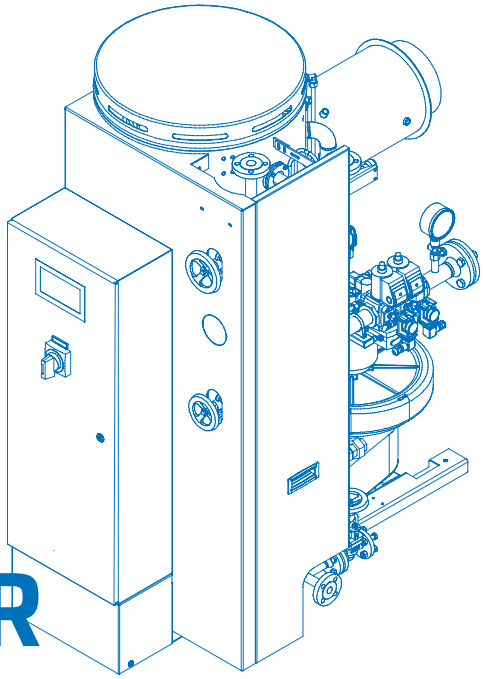
_The LED STATUS DISPLAY and the WATER LEVEL DISPLAY at the front of the equipment provide continuous assurance regarding equipment condition at a glance.

COOLING [INTEGRATED]

_The optional SWITCHING CABINET COOLING FUNCTION ensures operation even at high temperatures.

TECHNICAL DATA
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JUNIOR
TC 80 – 400

The fully automatic, safe solution – in the smallest spaces

This series provides a practical solution for any application areas with low steam demand – such as small breweries or pharmaceutical or food production operations. The electronic control system makes the JUNIOR extremely easy to operate. It is especially adept in working situations in which steam is not continually required and it comes with all of the respective safety equipment ready for operation. The combustion management of the newest generation can be programmed for any fuel type. Its compact, vertical, space-saving design makes it perfect for areas with limited space.


CERTUSS
Made in Germany

EFFICIENT LOAD ADJUSTMENT, EASY TO OPERATE, AND PROVEN IN PRACTICE

System operation can be fully automatic when the optional Thermotimat automatic control is installed. Operators are not required. Manual operation is self-explanatory and easy. The operating display provides graphics which make the instructions for start-up and shutdown easy to understand. It also indicates operating status, programming, errors, and messages in any desired language. Remote control and programming can be set up by request.





USER-FRIENDLY

_Self-explanatory TOUCHSCREEN MENU NAVIGATION makes operation significantly simpler.

REMOTE CONTROL AND SERVICE

_Remote programming, control, and access to data via Ethernet, CAN bus, PROFIBUS or GSM/UMTS modem*.

_Well-known for excellent service, customer service available 24 hours a day, 365 days a year.

ADVANTAGES OF OUR TECHNOLOGY

_Robust all-steel design with double-shell air cooling with no insulation materials.

_Noise and vibration damping, elastic assembly attachments.

_Vertical, stress-free, central mounting of the heating system with low-point blow down.

*Additional equipment.

EFFICIENT AND COST-EFFECTIVE

_Extremely high degree of efficiency (up to 87% gas to steam) due to 3-FOLD AIR INSULATION together with the simultaneous preheating of combustion air with very low emission losses.

_Short heating time. Full steam output is achieved within 3–5 minutes.

_ELECTRONIC COMBUSTION MANAGEMENT and the FIRST/MAIN STAGE BURNER TECHNOLOGY SYSTEM (gas burner) save energy and costs with immediate load adjustment starting at the respective stream demand.

OPERATION AND INSTALLATION

_Fully automatic operation

_Secure installation without a platform

_Small space requirement

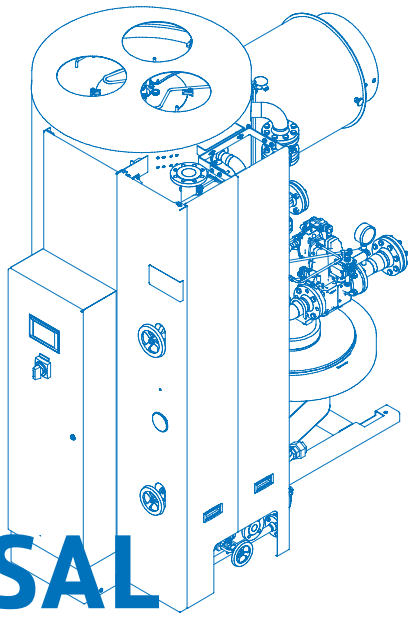
_Can be installed in work areas, no boiler house required.

_Depending on country-specific regulations no permit required for installation and operation.

_Compatible with all CERTUSS steam generators of the same or different designs.

TECHNICAL DATA
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UNIVERSAL
TC 500 – 2000



Economical, highly efficient steam generation – with greater output by request

The UNIVERSAL steam generators are the perfect solution for production operations with higher steam demand. The output is flexible and can be adjusted to meet the amount of steam needed. All UNIVERSAL steam generators consist of modules that are completely equipped and ready for operation. They can be combined with each other in a cascade connection and come with an extensive safety package. In comparison with conventional solutions, CERTUSS steam generators require just one-third of the footprint space.


CERTUSS



THE SECRET TO CERTUSS QUALITY: INNOVATIVE TECHNOLOGY, THE BEST COMPONENTS, AND METICULOUS CARE

Just as all CERTUSS steam generators, the large series also meets the highest requirements with regard to safety, efficiency, and operational advantages. The intuitive, easily understood control system offers both manual and fully automatic operation without any large personnel or time-related costs. Remote control, programming, and diagnostics are available via various connections.

In case the steam demand increases, the systems are compatible with every CERTUSS series and can be expanded to meet the exact needs.



Greater efficiency with the CERTUSS steam generator housing with 3-fold insulation

EFFICIENT AND COST-EFFECTIVE

_Extremely high degree of efficiency (up to 87% steam efficiency) due to 3-FOLD AIR INSULATION together with the simultaneous preheating of combustion air with very low emission losses.

_Short heating time. Full steam output is achieved within 3–5 minutes.

_ELECTRONIC COMBUSTION MANAGEMENT and the FIRST/MAIN STAGE BURNER TECHNOLOGY SYSTEM (gas burner) save energy and costs with immediate load adjustment starting at the respective stream demand.

_Modulating output control from 50% to 100% steam output with GAS BURNER EQUIPMENT (two output increments with oil operation: 50% and 100%).

_Low-maintenance FEED WATER PUMP with infinitely variable speed regulation.

_Low-emission burner for each size developed especially to meet the most recent European standards.

OPERATIONAL ADVANTAGES

_Self-explanatory TOUCHSCREEN MENU NAVIGATION makes operation significantly simpler.

_THERMOTIMAT AUTOMATIC CONTROL for fully automatic operation*.

_Remote control and control via Ethernet and mobile networks*.

_Optional: “CVE” supply unit: a complete boiler house installation including a boiler feed pump, feed water tank, steam separator, water treatment, and wastewater mixing heat exchanger.

*Additional equipment.

INSTALLATION ADVANTAGES

_Secure installation without a platform

_Small space requirement

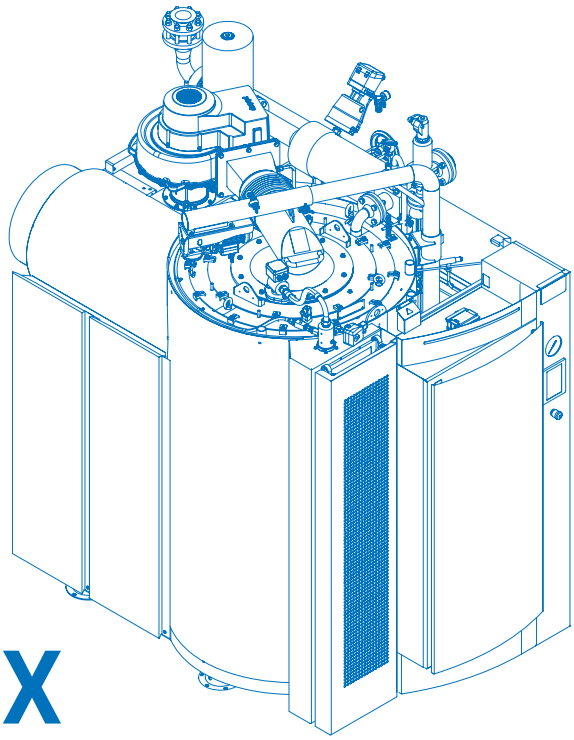
_Can be installed in work areas, no boiler house required.

_Depending on country-specific regulations no permit required for installation and operation.

_Standard versions come with equipment for up to 72 hours of operation without manual invention (water monitoring optional).



TECHNICAL DATA
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UMX
U1500MX – U2000MX

The new standard with UMX: reduce costs and conserve resources

The UMX on-demand steam generator is completely newly developed and is designed for use with NG or LPG or both (dual gas). The system is ready for operation just 3 to 5 minutes after start-up and allows for continuous modulation between 20% and 100% output. NOx emissions remain well below the required regulations. With its high efficiency, environmental compatibility, and user-friendly operation, the UMX sets new standards in its class.

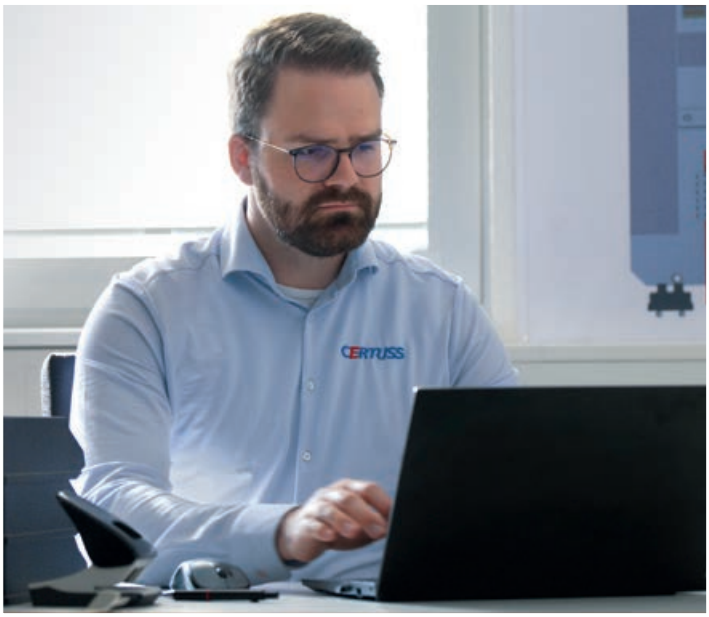

CERTUSS

EFFICIENCY REDEFINED – THE NEXT GENERATION OF STEAM GENERATORS

In the new UMX model series, features that were previously optional are now included as standard. Components such as the water pump, sliding gate valve, hot water filter, gas filter and steam separator are fully integrated and pre-installed – making the CERTUSS UMX ready for immediate use.

An integrated maintenance chain block hoist, a practical access ladder, and improved service access ensure greater safety and efficiency during maintenance work. The 7-inch display enables convenient operation control – also via connection to a central building management system. Thanks to the innovative One View Control, the device status remains visible at all times – even remotely.





REMOTE CONTROL

_Thanks to ONE VIEW CONTROL, the device status is always in view – and can also be programmed, read or controlled remotely.

INSTALLATION ADVANTAGES

_Everything you need for immediate use is integrated and pre-installed:: WATER PUMP, SLIDING GATE VALVE, HOT WATER FILTER, GAS FILTER and STEAM SEPARATOR.

_The proven THERMOTIMAT-PLUS CONTROL is now standard equipment.

USER-FRIENDLY

_An optimised SERVICE ACCESS, a pre-assembled CHAIN BLOCK HOIST and an integrated ACCESS LADDER make maintenance work easier, safer and more efficient.



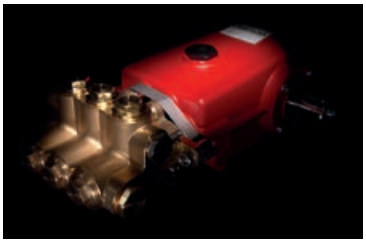
EFFICIENT AND COST-EFFECTIVE

_Short heating time. Full steam output is achieved within 3–5 minutes.

_Fully modulating 5:1 turndown burner offers continuous modulation between 20% and 100% output.

_Designed for use with NG or LPG or dual gas (NG/LPG).

_NOx emissions are well below the required standards.



OPERATION AND INSTALLATION

_Fully automatic operation

_Secure installation without a platform

_Small space requirement

_Can be installed in work areas, no boiler house required.

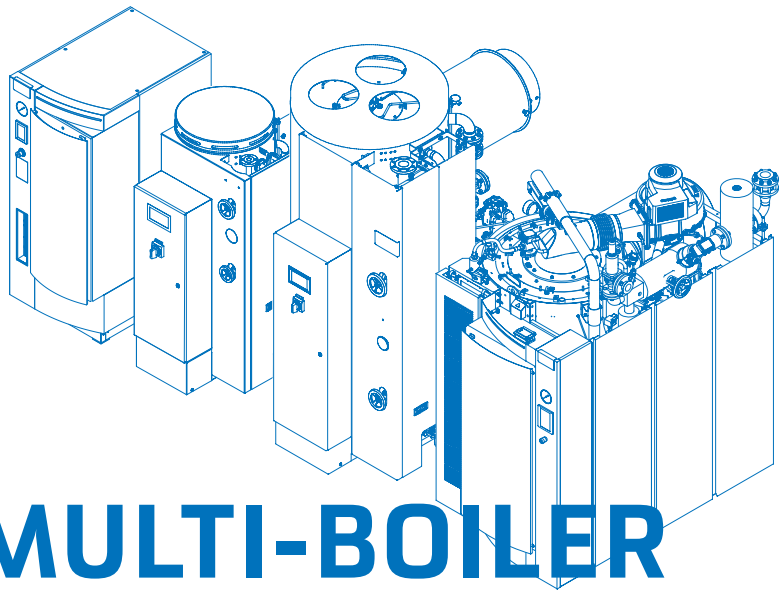
_Depending on country-specific regulations no permit required for installation and operation.

_Compatible with all CERTUSS steam generators of the same or different designs.

_Hybrid solution possible with electric steam generator EMX.



TECHNICAL DATA
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MULTI-BOILER SYSTEMS



"ONLY AS MUCH STEAM AS YOU NEED"

That's efficiency.

CERTUSS multi-boiler systems provide a highly flexible and energy-efficient steam supply. An integrated diagnostics system intelligently distributes steam generation between the base-load and peak-load boilers. This ensures that steam production is precisely matched to actual demand, enabling reliable, long-lasting, and sustainable operation.

Different fuel and heating technologies, including natural gas, oil, and electricity, as well as various capacity ranges, can be combined to meet specific production requirements.
Particularly efficient hybrid configurations are possible by combining EMX electric steam generators with UMX units featuring fossil-fuel-fired burners. Thanks to their identical control systems, both technologies can operate together in a multi-boiler system.


CERTUSS

CVE | CERTUSS SUPPLY UNIT

RELIABLE SUPPLY

THE FOUNDATION FOR LONG SERVICE LIFE AND CONSISTENT STEAM QUALITY

Consistent water quality is essential to the service life of a steam generator and the quality of the steam it produces. The factory-integrated CERTUSS CVE ensures a reliable supply, precisely tailored to the individual system and installation requirements.
The CVE can also be configured to accommodate future increases in capacity. It integrates and manages all water, steam, electrical, and energy supply connections. High-quality components for water treatment and supply are easily accessible and arranged in a compact, space-saving design.



CERTUSS FLEXIBILITY

Every CERTUSS supply unit is individually configured to meet current operating requirements and anticipated future demand.

REDUCED ON-SITE INSTALLATION TIME THROUGH CUSTOM PREFABRICATION

All piping between the steam generator and the supply unit is professionally engineered to meet the specific requirements of each installation and prefabricated in advance. The same applies to the electrical wiring and connection cables.
Advance planning using CAD technology ensures precision and reliability. These preparations reduce on-site installation work to an absolute minimum.



OPTIONAL EQUIPMENT

_Water treatment system with automatic chemical dosing
_Blowdown heat exchanger
_Feedwater tank
_Steam dryer
_Blowdown tank
_Booster pump
_Testomat water monitoring system
_Conductivity meter
_Control cabinet

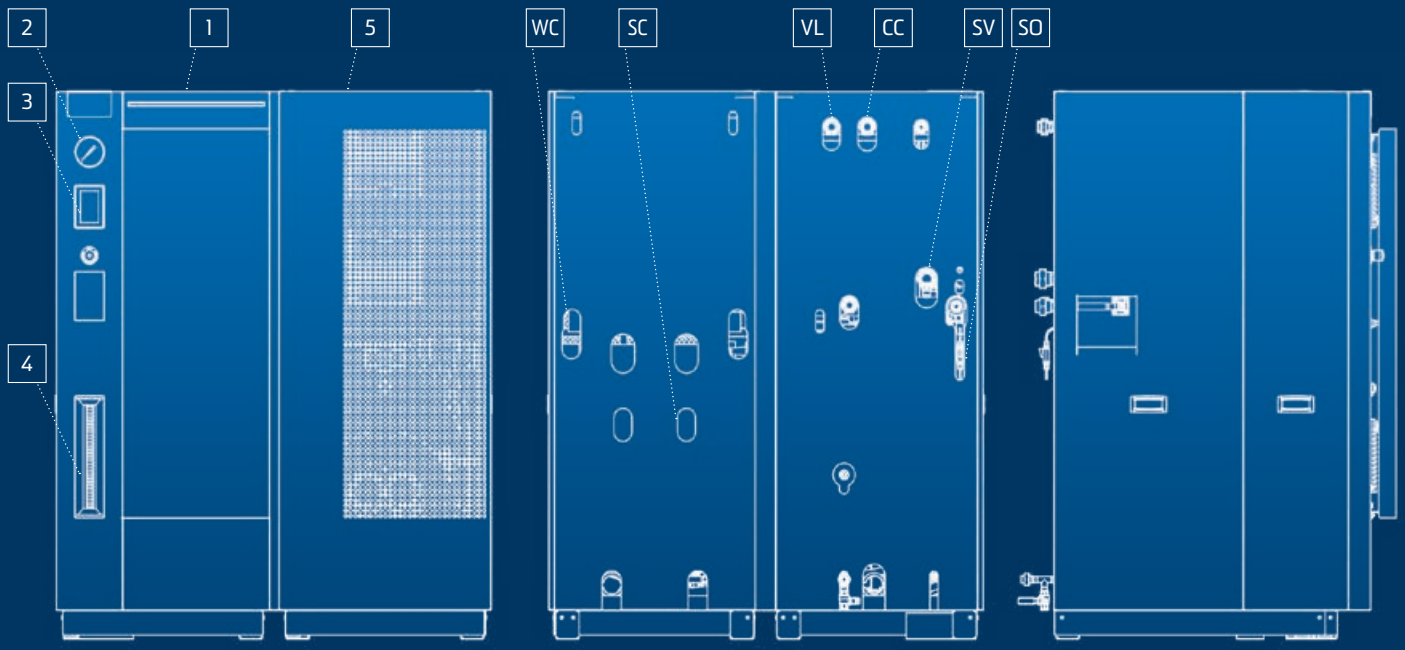




CVE ADVANTAGES

_Complete integration of all components required for steam supply and water treatment for CERTUSS steam generators
_Compact design with minimal space requirements
_Professional installation for safe and reliable operation
_Corrosion protection through a powder-coated base frame
_Complete electrical distribution panel
_Easy maintenance and convenient access to all components
_Cost-efficient series production with perfectly matched components
_Use of approved, high-quality materials
_Reduced installation time for significant cost savings
_Enhanced safety through factory-preinstalled water, steam, electrical, and energy connections

TECHNICAL DATA



1 Model Electrical E110MX–E 320MX
2 Pressure gauge
3 Touchscreen
4 Level indicator
5 Supply unit MX-CPA

SO Steam outlet
SV Safety valve to the outside
VL Vapor vent line to the outside
WC Water connection
CC Condensate connection
SC Drain line

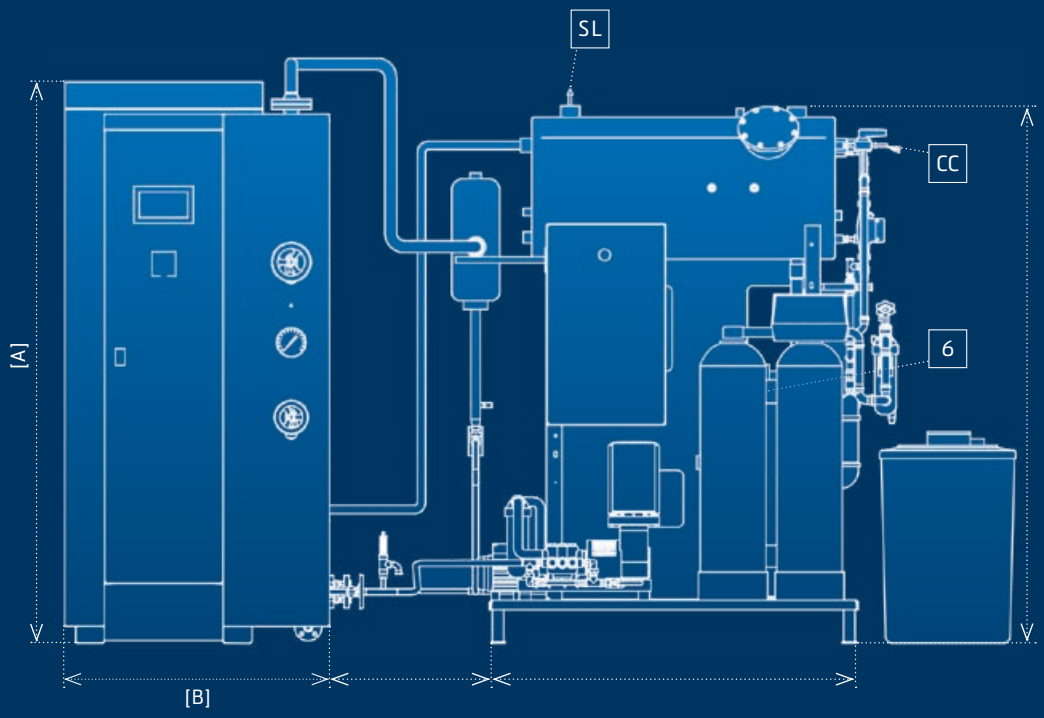
EMX
E110MX – E320MX

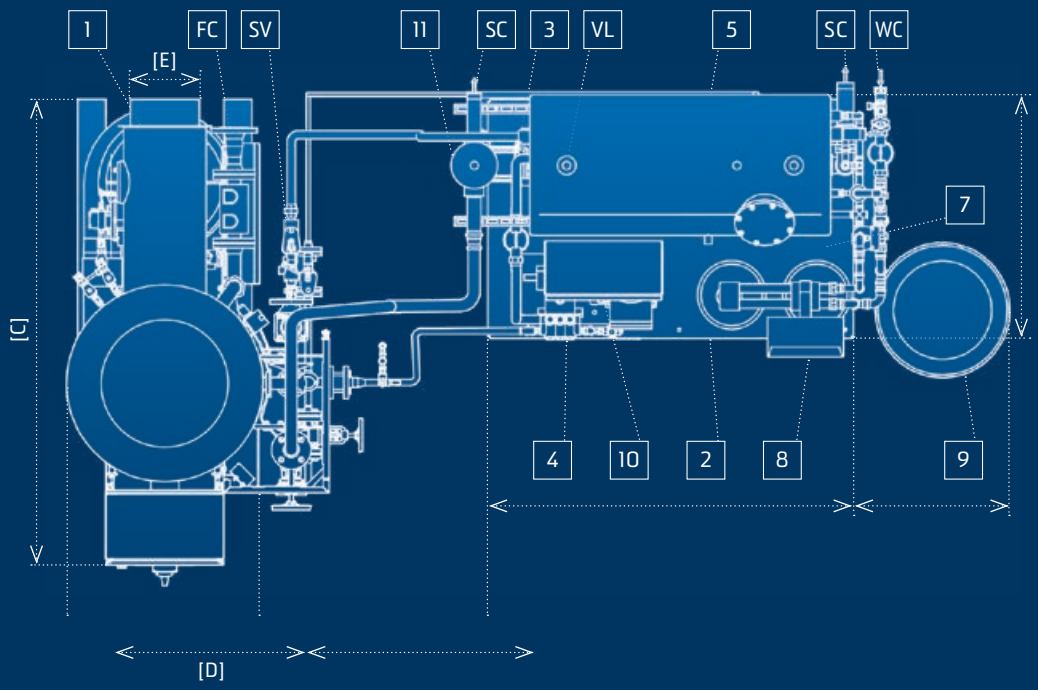
Model E-MX		E110MX	E160MX	E220MX	E320MX
Capacities					
Steam output	lb/h	277	403	553	805
Rated output US*	MBtu	281.5	409.5	563.0	818.9
	BHP	8.4	12.2	16.8	24.5
Total load**	hp	112	162	222***	323***
Water content	gal	10.3		20.7	
Electrical supply	V	440 / 460 / 480			
Pressures					
Operating pressure min.	psig	44 / 51			
Operating pressure max.	psig	52 / 82 / 112 / 135			
Max. allowable working pressure (MAWP)	psig	60 / 90 / 120 / 150			
Pressure vessel materials					
Carbon steel		ASME SA-234 Grade WPB et. al.			
Stainless steel****		ASME SA-182/240/403 et. al. Grade 316			
Measures and weight					
Dimensions (H x W x D)	inch	74.8 x 36.4 x 49		74.8 x 68.1 x 49	
Operating weight	lbs	1389		2116	
The following services are incurred depending on the design					
Electrical power cooling unit	hp	1.2		1.9	
Electrial power feed water heating	hp	12 / 24		12 / 18 / 27 / 36	
Connections					
Steam outlet	inch	1/2"		1"	
Water*****	inch	1/2"		1/2"	
Safety valve******	inch	1"		1" – 1 1/2"	
Drain	inch	1"			

*0 psi, 212 °F
**without optional loads listed below
***two power modules, each with a separate power supply
****max. feed water conductivity 1 µS/cm according to ASME BPVC I PEB-5.3
*****feedwater or raw water with MX-CPA
******depending on MAWP

Dimensions and weights have been rounded up or down. psig is overpressure value.
Performance values referenced to 212 °F feed-water temperature and 135 psig steam overpressure.

Right to technical revision reserved.





1 Model JUNIOR TC
2 CVE supply unit
3 Pre-pressure pump
4 Feed water pump
5 Feed water tank
6 Mixing heat exchanger
7 Dosing device
8 Water softening system
9 Brine tank
10 Switching cabinet
11 Steam separator

SC Steam connection
WC Water connection
VL Vapor vent line to the outside
SV Safety valve to the outside
SC Sewer connection
CC Condensate connection
FC Fuel connection

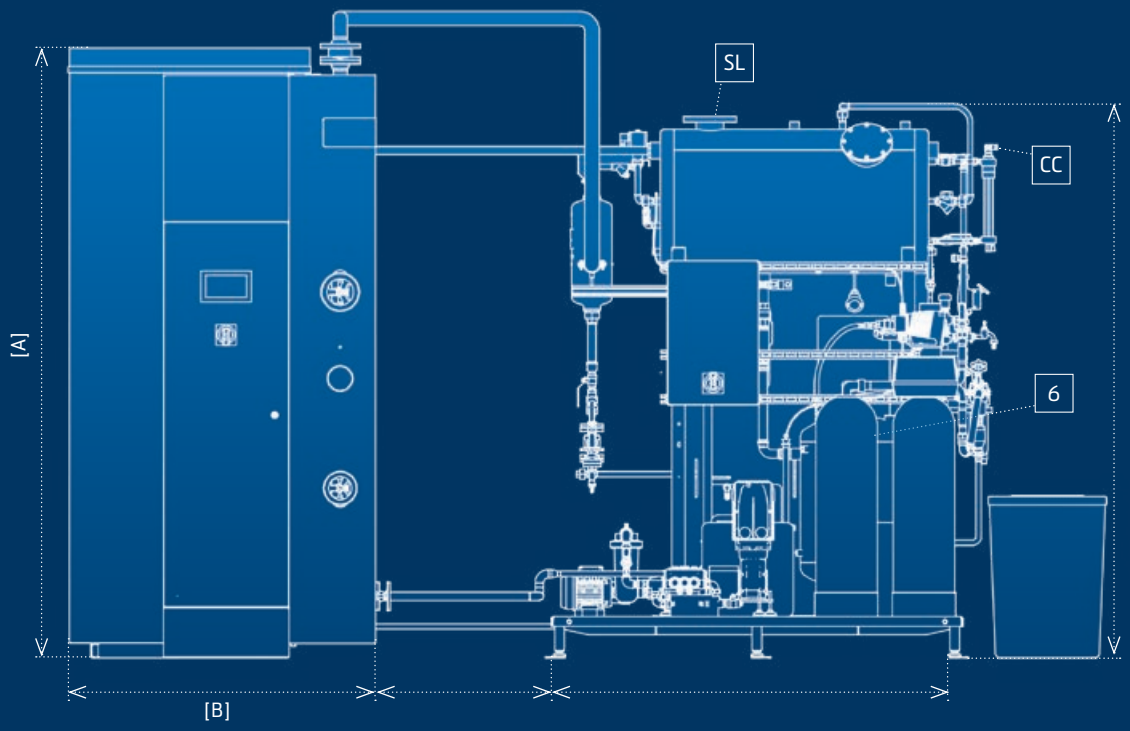
JUNIOR
TC 80 – 400

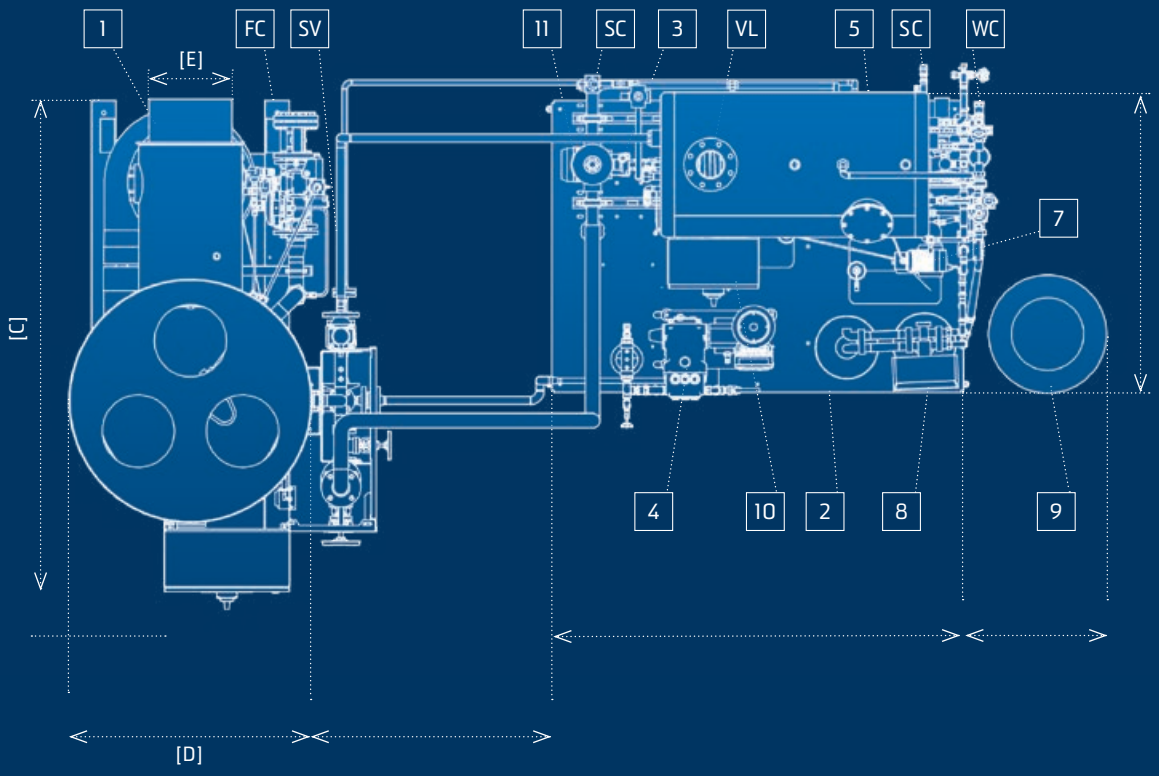
Model JUNIOR		80	120	150	200	250	300	350	400
Size		1		2		3			
Capacities									
Steam output	lb/h	176	265	331	441	551	661	772	882
Rated output*	BHP	5.4	8.0	10.0	13.4	16.7	20.1	23.4	26.8
Nominal load	MBTU	198	298	372	496	620	672	784	896
Levels		1		1		1			
Pressures									
Operating pressure min. / max.	psi	87 / 121		87 / 121		87 / 461			
Max. allowable working pressure (MAWP)	psi	150 – 460		150 – 460		150 – 460			
Consumption									
Natural gas	CFH	198	298	372	496	620	744	868	992
Liquid gas	CFH	79	119	149	195	248	298	347	397
#2 oil (@59°F)	GPH	1.42	2.13	2.66	3.54	4.43	5.32	6.20	7.09
Dimensions									
Height A	inch	60		63		73			
Width B	inch	29		30		34			
Depth C	inch	51		58		62			
Boiler ø D	inch	20		22		25			
Flue gas pipe ø E	inch	7		8		10			
Flue gas center F	inch	41		44		54			
Weight	**lb**	**705**		**926**		**1146**			
Connections									
Electrical connection load**	hp	4.96		4.96		4.96			
Oil connection	NPT	3/8"		3/8"		3/8"			
Natural gas	NPT	1"		1"		1 1/2"			
Liquid gas	NPT	1"		1"		1"			
Feed water inlet	class 300	3/4"		3/4"		3/4"			
Steam outlet	class 300	1"		1"		1"			
Safety valve (inlet x outlet)	NPT	150-200 psi: 3/4" x 1 1/4" 250-460 psi: 1" x 1 1/2"		1" x 1 1/2"		1" x 1 1/2"			
Start-up line	NPT	1"		1"		1"			

Reference values: natural gas 1000 Btu/ft³, liquid gas 2500 Btu/ft³, heating oil (EL) 140 MBTU/gal (LHV).
Dimensions and weights have been rounded up or down.
*psi is overpressure value. Performance values referenced to 212 °F feed-water temperature and 150 psi steam overpressure.
**Nominal values without air condition.

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TECHNICAL DATA





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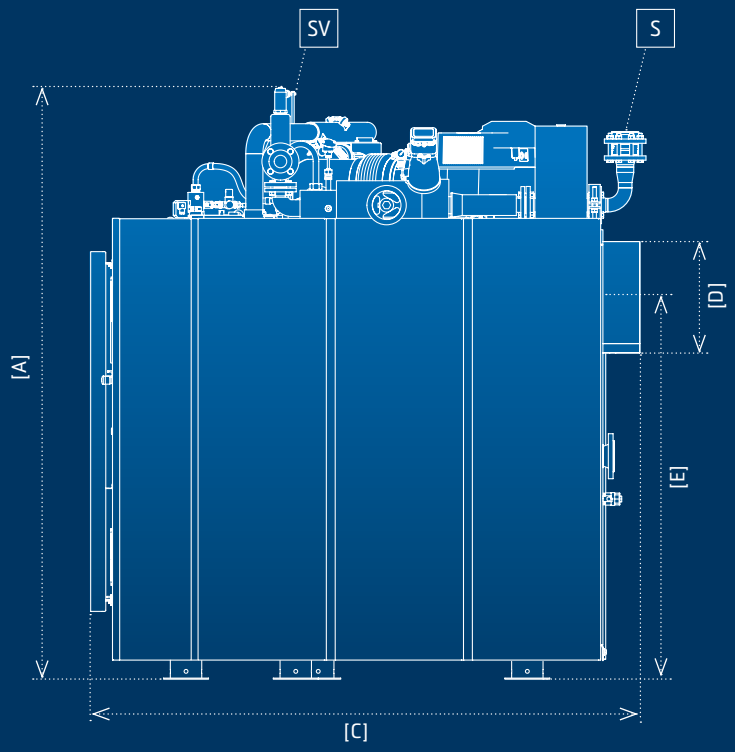
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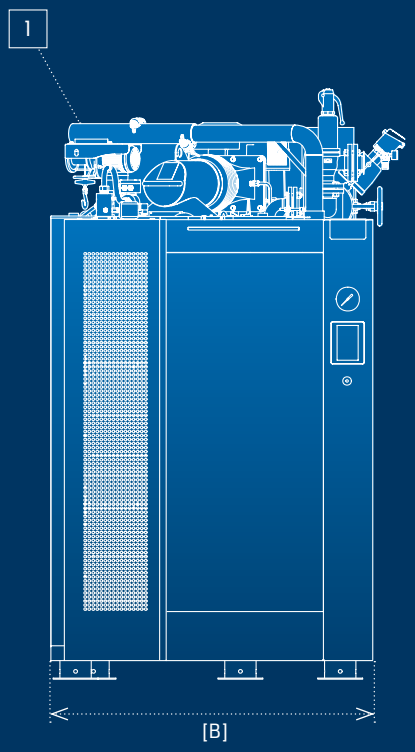
UNIVERSAL
TC 500 – 2000

Model UNIVERSAL		500	600	700	850	1000	1300	1500	1800	2000
Size		4		5		6		7		
Capacities										
Steam capacity	lb/h	1102	1323	1543	1874	2205	2866	3307	3968	4409
Rated output*	BHP	33.5	40.2	46.9	56.9	66.9	87.0	100.4	120.5	133.9
Firing range	MBTU	1240	1488	1736	2109	2481	3225	3721	4465	4961
Stages		2		2		2		2		
Pressures										
Operating pressure min. / max.	psi	87 / 121		87 / 121		87 / 121		87 / 121		
Max. allowable working pressure (MAWP)	psi	150 – 460		150 – 460		150 – 460		150 – 460		
Consumption										
Natural gas	CFH	1240	1488	1736	2109	2481	3225	3721	4465	4961
Liquid gas	CFH	496	595	695	843	992	1290	1488	1786	1985
#2 oil (@59°F)	GPH	8.86	10.63	12.40	15.06	17.72	23.03	26.58	31.89	35.44
Dimensions										
Height A	inch	78		90		100		105		
Width B	inch	38		46		50		56		
Depth C	inch	68		76		84		95		
Boiler ø D	inch	28		34		39		43		
Flue gas pipe ø E	inch	10		12		14		20		
Flue gas center F	inch	57		69		76		80		
Weight	**lb**	**2094**		**2425**		**3307**		**5071**		
Connections										
Electr. connection gas**	hp	7.86		9.59		17.58		23.92		
Electr. connection oil/comb.**	hp	8.49		10.23		18.89		25.23		
Oil connection	NPT	3/8"		3/8"		3/8"		3/8"		
Natural gas	NPT	1 1/2"		2"		2"	2 1/2"	2 1/2"		
Liquid gas	NPT	1"		1"		1 1/2"		1 1/2"		
Feedwater	class 300	1"		1"		1"		1 1/4"		
Steam connection	class 300	1 1/2"		2"		2"		2 1/2"		
Safety valve (inlet x outlet)	class 300	1"x 1 1/2"		1"x 1 1/2"		150 psi: 1 1/2" x 2 1/2" 200-460 psi: 1 x 1 1/2"		1 1/2" x 2 1/2"		
Start-up line	NPT	1"		1 1/4"		1 1/4"		1 1/2"		

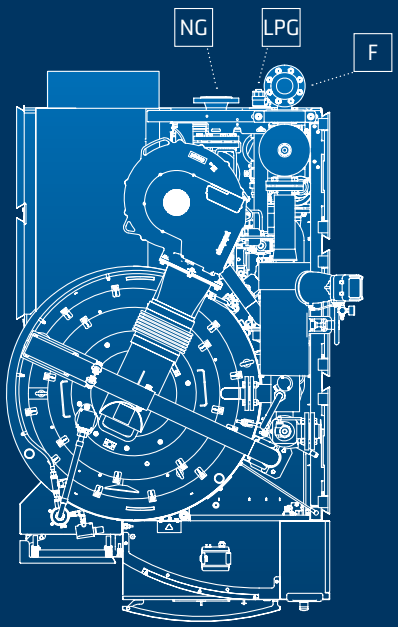
Reference values: natural gas 1000 Btu/ft³, liquid gas 2500 Btu/ft³, heating oil (EL) 140 MBTU/gal (LHV).
Dimensions and weights have been rounded up or down.
*psi is overpressure value. Performance values referenced to 212 °F feed-water temperature and 150 psi steam overpressure.
**Nominal values without air condition.

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1	Model UMX
A	Height
B	Width
C	Depth
D	Flue Gas Pipe Ø
E	Flue Gas Center
S	Steam
F	Feedwater
SV	Safety Valve
NG	Natural Gas Train
LPG	LP Gas Train



UMX
U1500MX–U2000MX

Model UMX		1500	1800	2000
Capacities				
Steam capacity	lb/h	3307	3968	4409
Rated output[1]	MBtu	3210	3852	4280
Firing rate	MBtu	744 – 3721 (20 – 100 %)	893 – 4465 (20 – 100 %)	992 – 4961 (20 – 100 %)
Modulation			20 – 100 % (1:5)	
Water volume	gal		59.4	
Heating surface	ft^2		330.5	
Pressures				
Operating pressure min.	psig		87	
Operating pressure max.	psig		121 / 171 / 221 / 271 / 416	
Max. allowable working rpressure (MAWP)	psig		150 / 200 / 250 / 300 / 360	
Combustion NG				
Fuel volume flow[3]	SCFH	744 – 3721 (20 – 100 %)	893 – 4465 (20 – 100 %)	992 – 4961 (20 – 100 %)
NOx-emission[2]	ppm		25 (at 4.5 % O_2) · 13 (at 5.5 % O_2) · 6 (at 6.5 % O_2) · 2 (at 7.5 % O_2)	
Combustion LPG (Propane)				
Fuel volume flow[1]	CFH	298 – 1488 (20 – 100 %)	357 – 1786 (20 – 100 %)	397 – 1985 (20 – 100 %)
NOx-emission[2]	ppm		40 (at 5.5 % O_2) · 13 (at 6.5 % O_2) · 8 (at 7.5 % O_2)	
Measures				
Height A	inches		97.8	
Width B	inches		56.5	
Depth C	inches		96.1	
Flue gas pipe ø D	inches		19.5	
Flue gas center E	inches		67	
Operating weight	**lbs**		**~7100**	
Connections				
Compressed air inlet	inches		1/4"	
Natural gas train inlet	inches		2 1/2"	
LP gas train inlet	inches		1 1/2"	
Feedwater inlet	inches		1 1/4"	
Start up	inches		1"	
Steam outlet	inches		2 1/2"	
Safety valve (inlet x outlet)	inches		1 1/2" x 2 1/2	
Draining	inches		1/2"	
Blowdown	inches		1"	
Vent line	inches		1"	

1) according to 212 °F feed water temperature and 150 psig operating pressure
2) corrected to 3% O_2
3) Reference values: natural gas 1000 Btu/ft^3, liquid gas 2500 Btu/ft^3

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