



UNIVERSAL steam boiler CSB

Ultra-compact steam boiler for the smaller output range. Enables future-proof low emissions and a high efficiency level. The ideal solution for food and beverage industries, manufacturing industries, hospitals, laundries and hotels.

Technical data of the CSB

Heat transfer medium	Low-pressure saturated steam	High-pressure saturated steam
Design	Shell boiler	
Output in kg/h	300 up to 4.800	300 up to 5.200
Safety pressure in bar	up to 0.5	up to 16
Max. temperature in °C	110	204
Fuel	Oil, gas, multi-fuel firing Biogas, bio-oil, hydrogen, special fuels	

High level of efficiency for reduced operating costs

The integrated economizer uses flue gas heat to reduce fuel consumption and lower the flue gas temperature. Together with the innovative insulation concept and Bosch compound insulating materials, this allows for a particularly high level of boiler efficiency.

- ▶ High efficiency rating of up to 95.3% with integrated economizer (optional)
- ▶ Reduced power consumption of the burner fan thanks to low resistance on the flue gas side
- ▶ Fit for the future: Thanks to the low-NO_x burner and generously dimensioned flame tube, the boiler already reliably falls below the strict EU emissions limits of the MCPD for 2025 and/or local emissions regulations

User-friendly operating concept

- ▶ Compact control CSC with touchscreen mounted on the boiler
- ▶ Alternatively available with boiler control BCO which offers additional functions: Remote access via MEC Remote, connection to automation systems and efficiency assistant MEC Optimize

Reliable performance and customised equipment

The steam-drying unit and the generously dimensioned steam chamber in the Universal CSB design guarantee a high level of steam quality that suits your processes.

- ▶ Available in high-pressure and low-pressure versions
- ▶ Flexible boiler equipment including firing unit, flue gas heat exchanger, water treatment and control system
- ▶ Universally applicable with different fuels and multi-fuel firing
- ▶ Certified in accordance with the European Pressure Equipment Directive (high-pressure steam boilers), internationally applicable with country-specific safety equipment

Quick installation and hassle-free maintenance

- ▶ Compact design optimised for ease of transport and simple installation
- ▶ Smooth commissioning thanks to pre-wired compact control and pre-assembled modules
- ▶ Easy cleaning, maintenance and service thanks to telescopic reversing chamber
- ▶ No inserts in the heat exchanger tubes allow good accessibility





Design

The steam-drying unit and the generously dimensioned steam chamber in the Universal CSB design guarantee a high level of steam quality that suits your processes. The high-quality production of the entire boiler body using the latest in welding robots allows for a particularly high level of robustness and durability.

Thanks to the special helical heat exchanger tubes, the heat exchange per m² of heating surface is improved significantly. The use of inserts in the exhaust system

is not required, which makes cleaning significantly easier. Furthermore, the energy requirement for the burner fan is reduced thanks to the low flue-gas-side resistance.

The telescopic reversing chamber of the industrial steam boiler makes maintenance and inspection work easier. It can be opened safely by a sliding system without needing very much space. Likewise, the entire rear tube plate is fully accessible.

Compatible products

- ▶ Flue gas heat exchanger ECO
- ▶ Feed water cooling module WM
- ▶ Condensate service module CSM
- ▶ Water service module WSM
- ▶ Water treatment module WTM
- ▶ Pump module PM
- ▶ Water analyzer WA
- ▶ Feed water regulation module RM
- ▶ Blow-down, expansion and cooling module BEM
- ▶ Expansion and heat recovery module EHM
- ▶ Expansion, heat recovery and blow-down module EHB
- ▶ Vapour cooler VC
- ▶ Gas regulation module GRM
- ▶ Oil supply module OSM
- ▶ Oil circulation module OCM
- ▶ Oil pressure regulation module ORM
- ▶ Oil preheater module OPM
- ▶ Steam distributor SD
- ▶ Steam accumulator module SAM
- ▶ Controls for optimising combustion
- ▶ Compact steam boiler control CSC
- ▶ Boiler control BCO
- ▶ System control SCO
- ▶ Remote access MEC Remote
- ▶ Digital efficiency assistant MEC Optimize

For further information please see our brochure 'Boiler and efficiency components'.

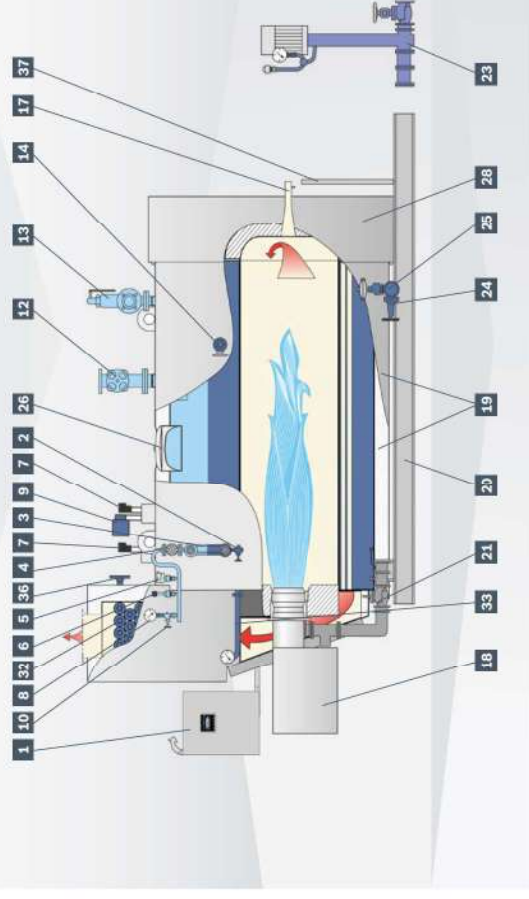


Compact steam boiler control CSC

Equipment

We offer the UNIVERSAL steam boiler CS3 as a complete boiler system including equipment*. The basic equipment comprises the boiler pressure vessel, the control and safety components, the burner unit, an integrated economizer, a pump module, a terminal box and the compact control CSC mounted on the boiler. Alternatively, you can select

the boiler control BCO that allows connection to automation systems. The sensors, actuators and country-specific safety equipment are already wired and combined in the terminal box. Pre-assembled, plug-in and coded cable bundles simplify the connection between the boiler control cabinet and the terminal box.



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| 1 Control cabinet with compact steam control CSC, swivel-mounted (alternatively boiler control BCO) | 17 Sight hole |
| 2 Blow-off tap | 18 Burner |
| 3 Reflective water level indicator | 19 Insulation with protective shell |
| 4 Manostat tube shut-off valve, maintenance-free | 20 Base frame |
| 5 Pressure limiter | 21 Gas regulation module |
| 6 Pressure transducer (4–20 mA) | 23 Pump module |
| 7 Low-level limiter electrode | 24 Drain shutoff valve, maintenance-free |
| 8 Pressure gauge | 25 Quick shut-off blow-down valve |
| 9 Level transducer (4–20 mA) | 26 Inspection opening, steam side |
| 10 Pressure gauge shut-off valve with testing function | 28 Telescopic rear reversing chamber for easy inspection |
| 12 Steam removal valve | 32 Flue gas heat exchanger ECO |
| 13 Full-lift safety valve | 33 Connection piping ECO/boiler |
| 14 Desalting and fully automatic conductivity measurement (here not drawn) | 36 Water inlet connection ECO |
| | 37 Bow-type handle for reversing chamber |

*The equipment level is variable and can be freely configured to customer requirements.