



BOSCH
Invented for life

The perfect heating system from one hand

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Optimally matched boiler, burner and system control

Efficient commercial condensing solutions

The perfect combination of boiler and burner for highest efficiency with NO_x levels below 30 mg/m³. High quality components, that complement each other, ensure reliable operation, easy installation and handling as well as one service contact for the entire boiler system.



- ▶ Uni Condens 8000F heating boiler with stainless steel heating surfaces for condensing technology
- ▶ Perfectly combined system from boiler, burner and control allows highly efficient and low emission condensing solution from a single source
- ▶ Ready for future emissions requirements already today with ultra low NO_x values below 30 mg/Nm³
- ▶ Solutions for lowest noise emissions by using pre-mix technology (e.g. < 30% vs equivalent pressure Jet Burner)
- ▶ With speed control and if applicable O₂ control in addition, the electrical power consumption can be reduced up to 70%
- ▶ One service contact for the entire boiler system
- ▶ All components for quick and easy assembly included in scope of delivery (eg. matching burner plate or slider kit)

Perfectly combined: The optimal efficiency

Each boiler and burner combination has its own advantages and is suitable for different kinds of projects. No matter which commercial project it is and which output level is required, with our perfect combinations we can deliver just the right solution for your specific project.

Boiler and burner solution	Uni Condens 8000 F 800–1200: Combination with Weishaupt PLN	Uni Condens 8000 F 800–1200: Combination with Weishaupt 4LN with EGR	Uni Condens 8000 F 145–640: Combination with Riello RX
Output range	800–1200 kW	800–1200 kW	145–640 kW
Main characteristics	Quiet, space saving, high reliability and operational safety	Highest efficiency, lowest excess air demand, optional O ₂ -control	Quiet, space saving, compact, easy servicing
Heating surface	Stainless steel	Stainless steel	Stainless steel
Ultra-low-NO _x operation (<30 mg/m ³)	Possible	Possible	Possible
Fuel	Natural gas	Natural gas	Natural gas, LPG
Various fan speed control	Standard scope*	Possible (accessory)	Standard scope*
O ₂ -control (Continuous adjustment of fuel-air mixture for even higher efficiency)	–	Possible (accessory)	–
Controls and connectivity	Control 8000, Modbus interface integrated for BMS	Control 8000, Modbus interface integrated for BMS	Control 8000, Modbus interface integrated for BMS
Application area (examples)	Commercial application with high heat demand like schools, apartment blocks, shopping malls, hospitals, etc. in which a save and quiet operation is requested	Commercial and industrial (up to 100°C) applications like area/district heating or process heating for which highest efficiency and lowest emissions are desired at the same time	Commercial application with medium heat demand like schools, apartment blocks, shopping malls, hospitals, etc. in which a quiet operation is requested and structural building conditions are limited

* Variable simultaneous control of fan speed and gas proportional valves in standard scope.

Uni Condens 8000 F 800–1200: Combination with Weishaupt PLN

The ideal solution for commercial applications with high heat demand like schools, apartment blocks, shopping malls, hospitals, etc. in which a save and quiet operation is requested.

Highlights:

- ▶ Ready for future emissions requirements already today with ultra low NO_x values below 30 mg/Nm³
- ▶ Reduction of electrical power consumption up to 35 % due to variable simultaneous control of fan speed and gas proportional valves in standard scope
- ▶ Less noise protection measures in new building necessary and simplification of building design because of very low noise emissions: <30% vs. equivalent pressure Jet Burner
- ▶ High operational safety and availability: Advanced filter technology and ionisation electrode, that monitors the combustion surface, while an infrared flicker detector secures the pre-mix chamber and the burner tube

Uni Condens 8000 F 800–1200: Combination with Weishaupt 4LN with EGR

Best fit for commercial and industrial applications like area/district heating or process heating for which highest efficiency and lowest emissions are desired at the same time.

Highlights:

- ▶ Ready for future emissions requirements already today with ultra low NO_x values below 30 mg/Nm^3
- ▶ With speed control and if applicable O_2 control in addition, the electrical power consumption can be reduced up to 70 %
- ▶ No additional design work necessary for exhaust recirculation thanks to fitting re-circulation piping set for EGR
- ▶ Lowest excess air demand to reach ultra-low- NO_x values of 30 mg/Nm^3 (~ 25 % less excess air) allows lower requirements on boiler room, e.g. smaller air openings for combustion
- ▶ Lower O_2 and excess air demand increases total efficiency due to lower electrical consumption of fan and lower fuel consumption



The Uni Condens 8000F floor standing condensing boiler is consistently designed with stainless steel heating surfaces for condensing technology in 3-pass design. It is tested according to the Gas Appliances Directive and Efficiency Directive (boilers up to 400 kW), is type-tested and carries the CE certification. Various standards are used as the basis, depending on the boiler (e.g. EN 303- 1, EN 303-3, EN 676, EN 677, DIN EN 15417). Quality assurance measures to DIN ISO 9001 and DIN EN 29001 contribute to the high manufacturing quality and functional reliability. The combination of this high efficient stainless steel condensing boiler with advanced pre-mix burners or burners with exhaust gas recirculation (“EGR”) technology combines highest efficiency with lowest emissions, or in other words: Technically most advanced gas-heating technology.

Uni Condens 8000 F 145–640: Combination with Riello RX

Ideal solution for commercial applications with medium heat demand like schools, apartment blocks, shopping malls, hospitals, etc. in which a quiet operation is requested and structural building conditions are limited.

Highlights:

- ▶ Ready for future emissions requirements already today with ultra low NO_x values below 30 mg/Nm^3
- ▶ The combination is tested according to the Gas Appliances Directive and Efficiency Directive (ErP) which makes it easy to proof the alignment with this regulations
- ▶ Reduction of electrical power consumption up to 35 % due to variable simultaneous control of fan speed and gas proportional valves in standard scope
- ▶ Less noise protection measures in new building necessary and simplification of building design because of very low noise emissions: <30% vs. equivalent pressure Jet Burner
- ▶ Less space requirements in the boiler room as well as easy access for annual maintenance and service necessary thanks to Bosch sliding kit (Boiler door can be opened without removing of the burner)
- ▶ Usage with LPG possible, system leak test available as accessory, which makes this solution flexible



More than 150 Bosch boilers for clean air in Beijing

Below the limit value: 22 mg/m³ NO_x emissions

For replacing existing heating boilers in Beijing, Bosch Thermotechnology delivered more than 150 Uni Condens 8000F* with ultra low-NO_x burners since 2016. Clean and energy-efficient heating technology in China's metropolises is now more important than ever. Particularly stringent emission standards have been introduced in order to reduce pollutant emissions. In Beijing the NO_x limit value for heat generation systems and power plants is just 30 mg/m³. With 22 mg/m³ the optimised and natural gas-fired Uni Condens 8000F heating systems produce even lower emissions than the stipulated limit values, and use condensing technology to offer maximum efficiency.

Beijing Huaying Tianrun Energy Technology Co. Ltd. operates several heating plants in Beijing and approached Bosch Thermotechnology for the first time in 2016. The objective was to use new heating systems to significantly reduce NO_x emissions and improve energy efficiency. Special factors had to be taken into account during the early technical design phase, above all the high levels of air pollution in Beijing. In addition to an optimised combustion chamber and modified control system, the Uni Condens 8000F boilers also use the recirculation technology, which is commonly used for industrial boilers. They are characterised by their robust design, are resistant to contamination and guarantee extremely low NO_x values in the exhaust gas with a relatively low excess oxygen level of less than 3.5%: Depending on the set burner output, NO_x emissions are between 22 and 29 mg/m³ – and therefore below the limit value for Beijing of 30 mg/m³.

The 1.2 MW Uni Condens boilers also use sophisticated condensing technology, which further reduces the amount of energy used as well as NO_x emissions. In comparison to their predecessors, the boilers use up to 15% less fuel. The low nitric oxide values and excellent efficiency were also confirmed in March 2018 by the "China Special Equipment Inspection and Research Institute (CSEI)", who carried out measurements on site. With its further-developed boilers, Bosch Thermotechnology successfully implemented a solution for a special market requirement in just a few months – for better air quality in Beijing.

Beijing Daxing District Project – Heating area 145,000 m² with previously four 2,800 kW hot water boilers that have been replaced with six Uni Condens 8000F 1,200 kW Bosch condensing boilers in 2019.



*The boiler is introduced in China under the name Uni Condens 6000 F.

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