BOSCH
Invented for life

Bosch Commercial Boiler

Buderus SB Series

The Buderus SB series is a high efficiency commercial boiler solution that is 98% efficient with input ranges of 563 to 5443 MBH. This high mass condensing design offers flexibility for retrofit and new construction.

A High Efficiency Commercial Boiler That is up to 98% Efficient

Bosch Buderus SB Series

The Buderus SB series of high-efficiency condensing boilers is made of 316 titanium steel, giving this boiler a longer service life, and stronger than other boilers in the market. With its dual return feature this boiler is capable of having a 98% AFUE rating making it one of the highest efficiency in its market. This series can be used with multiple fuels including natural gas, propane, or heating oil.

Features

- Large, full-swing door reversible for left or right installation. Allows full access to the heat exchanger for inspection and service.
- Top connections for easy access to piping. Pre-installed boiler insulation.
- No operational requirement with regard to water flow, minimum return temperature or temperature rise through the boiler.
- Dual return connection for separation of high and low return temperatures to maximize boiler and system efficiency.
- No shunt pump or flow switch required.
- Up to 100 deg. delta T for improved efficiency .
- 10 Year heat exhanger warranty(1)
- Multi fuel options available: NG, LPG, low sulfur oil and heating oil type 2.
- Condensing operation on gas and <50 ppm sulfur #2 oil; non-condensing on standard #2 oil.

(1) Please go to boschheatingandcooling.com for full limited warranty details

Condensing Boiler Technology

Condensing boiler technology is the most efficient, environmentally friendly form of fuel heating available today. Condensing technology recovers the condensation heat retained latently in flue gases—part of the energy that normally disappears up the chimney in other heating systems. Thanks to lower fuel consumption and lower heating costs, condensing boilers usually pay for themselves in only 2 to 5 years.

Additionally, a modern condensing heating system increases the value of the building as well as quality of life by reducing emissions. Condensing technology offers an intelligent, easy-to-install solution to rising fuel costs. High efficiency condensing equipment achieves qualifing points for LEED certification of commercial buildings.

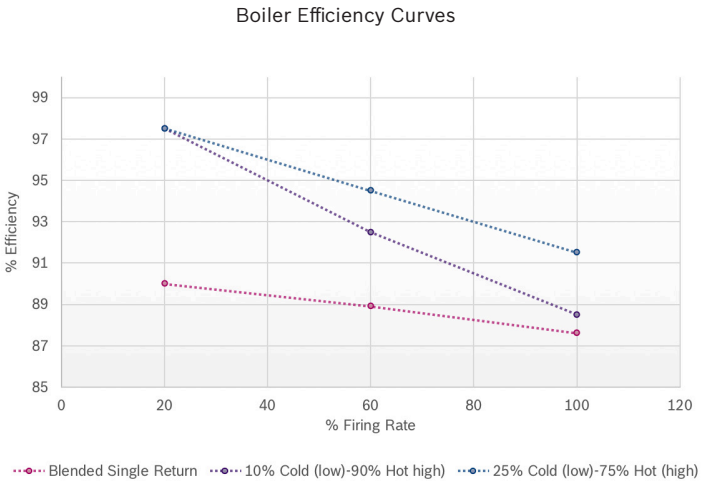
The secondary heating surfaces are long and extremely large in order to ensure optimal heat transfer and a high degree of condensation.

Add up to 8% Improvement in Efficiency With Dual Return Connections

The Buderus SB is a premium high efficiency boiler equipped with dual return connections. This allows an engineer the option to design diverse load demands specific to a customized system for optimize operation.

The dual return advantages is that it does not have a single return like traditional boilers. Most standard hydronic systems blend returns from different loops, compromising the performance of a condensing-boiler system. This approach lowers system efficiency because the condensing zone of the heat exchanger is smaller and less efficient. With the SB series, the dual return connections divert the coldest return temperatures over the third pass of the heat exchanger to maximize heat transfer and efficiency.

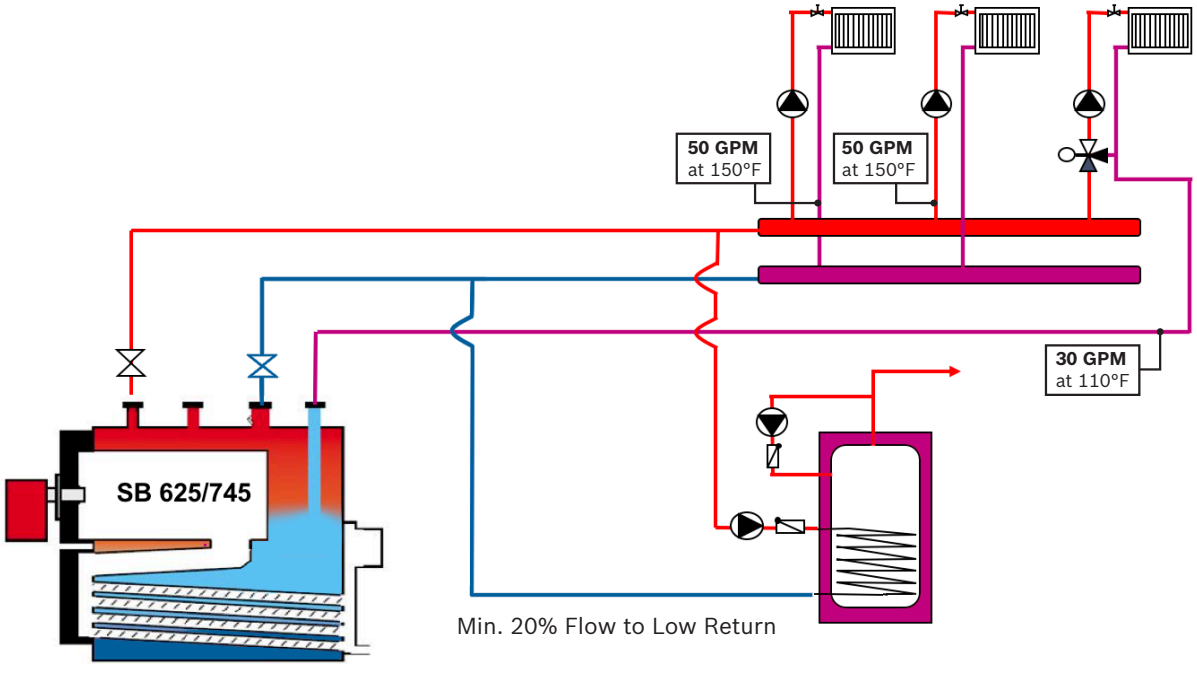
Dual return application can be utilized for any systems with multiple return water temperatures, which inherently have higher temperature differentials with lower return temperatures. Dual return can save money in Multi-zone space heating, space heating with domestic hot water combination systems, radiant floor heating, pool heating, snow melt, and supplementary heat for heat pump systems.

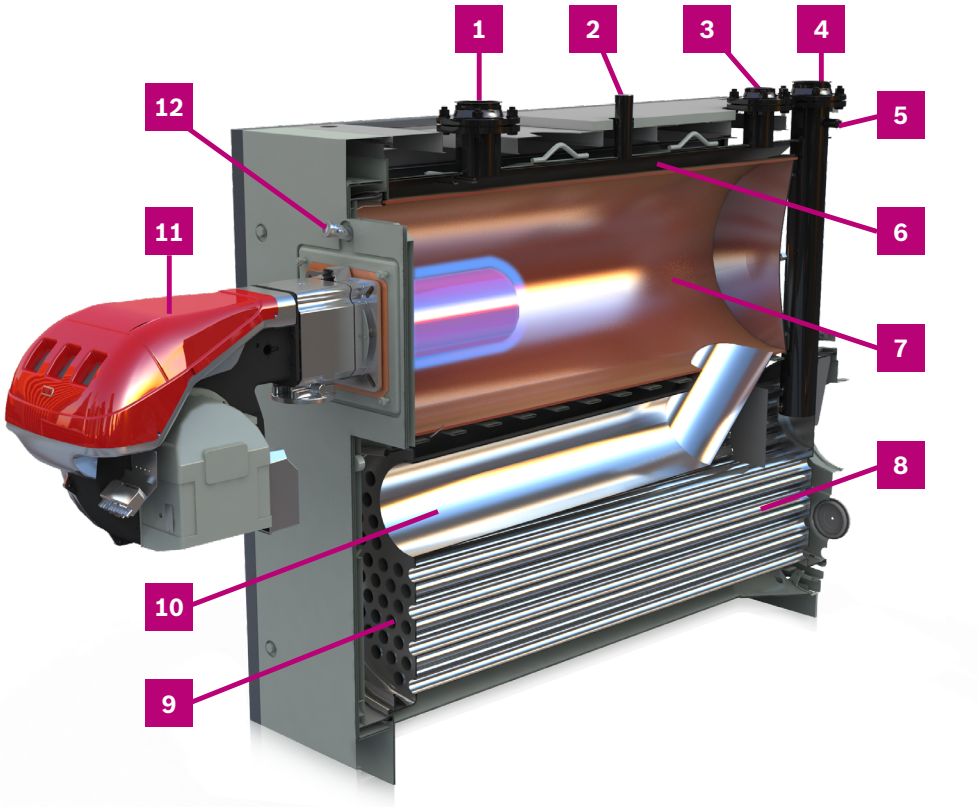


Total System Flow
130 gpm

High Temp Flow
100 gpm at 150°F

Low Temp Flow
30 gpm at 110°F





1. Heating flow outlet
2. Safety device fitting
3. Heating return (high temperature)
4. Heating return (low temperature)
5. Blind plug
6. Instrument bulb/probe socket
7. Combustion chamber
8. Flue pipes
9. Turbulators
10. Second flue pass
11. Burner
12. Flame inspection window with pressure measurement point

Ensure Energy Efficiency & Low Pollutant Emissions.

The Buderus SB Series Condensing Boilers have more than exemplary economy to offer. Equipped with a two-staged or modulating forced-draft burner, they achieve extremely low pollutant emissions. Multiple burner selections available. High- and low-temperature heating circuit returns to the boiler should be connected separately to achieve higher efficiencies and higher rates of condensation. These boilers are equipped with two return water connections, which allow for separate return flows and optimal efficiencies.

When return-flow temperatures below the dew point of combustion gases are reduced, even more heat is reclaimed from the flue products. In the Buderus SB Series, low flue gas temperatures are achieved by low flow return water temperatures, highly efficient heat exchanger surfaces, two-stage or full modulating burners, and continuous operation. These boilers are ideally suited for direct piping in commercial systems to make maximum use of low return water temperatures.

High Quality Stainless & High Mass Design

The SB series full 3-pass heat exchanger is constructed with 316Ti, Titanium stabilized stainless steel. The addition of titanium is made to reduce the risk of intercrystalline corrosion following heating in the temperature range 797-1500°F. It is more resistant to corrosion than the other Stainless Steel materials such as 304 stainless steel or 316L stainless steel.

The high mass design of the SB series pressure vessel further enhances its flexibility. The large water volume (approx. 100 gal/1mmbtu) enables operation at high delta T while having no minimum flow or return water temperature requirements. Therefore, the SB series is ideally suited for direct piping without need of an additional boiler pump, allowing for simplified piping and system design for any application.

Complete Your System

Once you have a Buderus boiler, you can add a Buderus indirect fired hot water tank, an optional Buderus Control or both. The Logamatic Control maximizes your comfort and fuel savings. It will also accommodate specialized heating applications such as radiant flooring. Combined, this premium heating system will provide years of exceptional comfort and economical savings.

Domestic Hot Water Tanks

Heatronic 4000 Control

Convenient Buderus Control

Buderus Controls can be used to adjust the firing rates of burners in multi-boiler systems. Controls can be pre-programmed with automatic night and day functions and set to trigger automatic adjustments based on shifts in outdoor or indoor temperatures. An optional module is available for direct communication with building management systems.

Heatronic 4000 Control Series

The Heatronic 4000 is pre-loaded with the parameters for Bosch and Buderus commercial boilers. Pre-programmed options include fuel type, boiler type, high and low fire outputs, motor speed, pump purge time, maximum temperature output, and min/max modulation parameters. The Heatronic 4000 works with up to four condensing and non-condensing boilers that are either modulating, single stage or two stage. Designed to accurately maintain target water temperature based on outdoor temperature reset or a fixed setpoint for space or process heating applications. Optional features to increase efficiency and boiler plant reliability include domestic hot water and setpoint heating, boiler run-time balancing, stand-by primary pump operation, and pump exercising.

Integrated multi-boiler system controller with the following features and optional control modules:

- Outdoor reset, staged burner operation
- Control of single, two-stage and modulating burners (up to 8 boilers)
- Automatic and load/switch dependent boiler rotation
- Operation of boiler pumps, 2-way valves, 3 or 4-way valves and system pumps
- BMS interface capability
- External load capability: DHW and other on-demand loads
- Self diagnostics and system parameter display

System & Technical Buderus SB625WS Series

Technical Specifications	160	220	290	370	480	640
Performance Data (Unit of Measure)						
Gas input (MBH (kW))	563 (164.9)	788 (230.9)	1,014 (297.1)	1,314 (385.0)	1,689 (494.9)	2,200(644.7)
Oil input (GPH)	N/A	5.6	7.2	9.4	12.0	16.0
Gross rated output (MBH (kW))	532 (155.9)	745 (218.3)	959 (281.0)	1,243 (364.2)	1,598 (468.3)	2,081 (609.9)
Gross output (MBH (kW)) @ 104 °F supply / 86 °F return (40 °C / 30 °C)	544 (159.7)	762 (223.6)	990(290.2)	1,280 (375.2)	1,642 (481.5)	2,190 (642.0)
Gross output (MBH (kW)) @ 176 °F supply / 140 °F return (80 °C / 60 °C)	504 (147.8)	707 (207.3)	920 (269.9)	1,183 (346.7)	1,519 (445.2)	2,025 (593.6)
IBR Net Rating (MBH (kW))	463 (135.7)	648 (189.9)	834 (244.4)	1,081 (316.8)	1390 (407.4)	1810 (530.4)
Boiler horsepower (H.P)	16.3	22.8	29.6	38.2	49.1	65.4
Natural gas combustion efficiency (%)	95.0	95.0	95.0	95.0	95.0	95.0
Natural gas thermal efficiency (%)	94.6	94.6	94.6	94.6	94.6	94.6
General Data (Unit of Measure)						
Boiler category	Condensing					
Heat exchanger construction	Stainless steel					
Heating surface (Sq. Ft (m2))	65.65 (6.1)	94.72 (8.8)	139.93 (13.0)	175.45 (16.3)	234.65 (21.8)	310.00 (28.8)
Maximum allowable working pressure (PSIG (bar))	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)
Water content (Gallons (Liters))	85.3 (323)	95.1 (360)	130.7 (495)	146.6 (555)	196.2 (743)	203.4 (770)
Weight - dry (lbs (kg))	1232 (559)	1276 (579)	1,624 (737)	1,814 (823)	2,612 (1,185)	3,019 (1,370)
Weight - shipping (lbs (kg))	1350 (612)	1380 (626)	1,760 (798)	1,950 (885)	2,900 (1,315)	3,300 (1,497)
Venting category	II, IV					
Operational Data (Unit of Measure)						
Fireside pressure drop (Inch W.C. (mbar))	0.802 (2.0)	1.083 (2.7)	1.284 (3.2)	1.846 (4.6)	2.007 (5.0)	2.208 (5.5)
Required vent connection pressure (Inch W.C. (mbar))	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)
Minimum flow rate (GPM (LPM))	none					
Maximum flow rate (GPM (LPM))	none					
Maximum supply water temperature (°F (°C))	210 (98.8)					
Minimum return water temperature (°F (°C))	none					
Boiler Dimensions Data (Unit of Measure)						
Base width (Inch (mm))	$27^{3}/_{16}$ (690)	$27^{3}/_{16}$ (690)	29½ (750)	29½ (750)	31⅛ (790)	31⅛ (790)
Overall width (Inch (mm))	29⅛ (740)	29⅛ (740)	33½ (850)	33½ (850)	$35^{7}/_{16}$ (900)	$35^{7}/_{16}$ (900)
Height of burner plate (center line) (Inch (mm))	$36^{7}/_{16}$ (925)	$36^{7}/_{16}$ (925)	$40^{9}/_{16}$ (1030)	$40^{9}/_{16}$ (1030)	48⅝ (1235)	48⅝ (1235)
Flue depth (Inch (mm))	2¾ (70)	2¾ (70)	2¾ (70)	2¾ (70)	2¾ (70)	2¾ (70)
Height of water fittings (inch (mm))	52¾ (1340)	52¾ (1340)	57⅛ (1450)	57⅛ (1450)	66¾ (1695)	66¾ (1695)
Boiler height (inch (mm))	$52^{3}/_{16}$ (1325)	$52^{3}/_{16}$ (1325)	56½ (1435)	56½ (1435)	66⅛ (1680)	66⅛ (1680)
Length (inch (mm))	$57^{5}/_{16}$ (1455)	$57^{5}/_{16}$ (1455)	$64^{3}/_{16}$ (1630)	$72^{1}/_{16}$ (1830)	80⅛ (2035)	88 (2235)
Base Length (inch (mm))	51 (1295)	51 (1295)	57⅞ (1470)	65¾ (1670)	$73^{13}/_{16}$ (1875)	$81^{11}/_{16}$ (2075)

System & Technical Buderus SB745WS Series

Technical Specifications	800	1050	1300	1550
Performance Data (Unit of Measure)				
Gas input (MBH (kW))	3003 (880)	3754 (1100)	4692 (1375)	5443 (1595)
Oil input (GPH)	21.4	26.8	33.5	38.1
Gross rated output (MBH (kW))	2,846 (834.0)	3,529 (1,034)	4,364 (1,279)	5,029 (1,474)
Gross output (MBH (kW)) @ 104 °F supply / 86 °F return (40 °C / 30 °C)	2,738 (802.4)	3,650 (1,070)	4,563 (1,337)	5,293 (1,551)
Gross output (MBH (kW)) @ 176 °F supply / 140 °F return (80 °C / 60 °C)	2,648 (791.2)	3,309 (989.4)	4,137 (1,237)	4,799 (1,434)
IBR Net Rating (MBH (kW))	2,475 (725.3)	3,069 (899.4)	3,795 (1,112)	4,373 (1,281)
Boiler horsepower (H.P)	81.8	109.1	136.3	158.1
Natural gas combustion efficiency (%)	95.0	95.8	96.6	92.5
Natural gas thermal efficiency (%)	94.8	94.8	94.8	92.4
General Data (Unit of Measure)				
Boiler category	Condensing			
Heat exchanger construction	Stainless steel			
Heating surface (Sq. Ft (m2))	426.25 (39.6)	500.52 (46.5)	604.93 (56.2)	670.37 (62.28)
Maximum allowable working pressure (PSIG (bar))	80 (5.5)	80 (5.5)	80 (5.5)	80 (5.5)
Water content (Gallons (Liters))	348.7 (1320)	368.5 (1395)	482.1 (1825)	501.9 (1900)
Weight - dry (lbs (kg))	4430 (2010)	4948 (2245)	6017 (2730)	7230 (3280)
Weight - shipping (lbs (kg))	4830 (2191)	5400 (2449)	6590 (2989)	7950 (3606)
Venting category	II, IV			
Operational Data (Unit of Measure)				
Fireside pressure drop (Inch W.C. (mbar))	2.288 (5.7)	2.529 (6.3)	2.729 (6.8)	2.970 (7.4)
Required vent connection pressure (Inch W.C. (mbar))	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)	+.01 – +0.2 (.025 - .498)
Minimum flow rate (GPM (LPM))	none			
Maximum flow rate (GPM (LPM))	none			
Maximum supply water temperature (°F (°C))	210 (98.8)			
Minimum return water temperature (°F (°C))	none			
Boiler Dimensions Data (Unit of Measure)				
Base width (Inch (mm))	37 7/16 (950)	37 7/16 (950)	42⅛ (1070)	44½ (1130)
Overall width (Inch (mm))	41¾ (1060)	41¾ (1060)	46 7/16 (1180)	48¼ (1225)
Height of burner plate (center line) (Inch (mm))	54¾ (1390)	54¾ (1390)	58 7/8 (1495)	62⅝ (1590)
Flue depth (Inch (mm))	2¾ (70)	2¾ (70)	2¾ (70)	2¾ (70)
Height of water fittings (inch (mm))	75 (1905)	75 (1905)	80 5/16 (2040)	85 13/16 (2180)
Boiler height (inch (mm))	74 7/16 (1890)	74 7/16 (1890)	79¾ (2025)	85¼ (2165)
Length (inch (mm))	100¾ (2560)	110⅝ (2810)	118½ (3010)	121¼ (3080)
Base Length (inch (mm))	94½ (2400)	104 5/16 (2650)	112 3/16 (2850)	112 3/16 (2850)

About Bosch

Bosch Group

The Bosch Group is a leading global supplier of technology and services in the areas of Automotive, Industrial Technology, Consumer Goods and Building Technology. The company was founded in Stuttgart, Germany, in 1886 and presently has more than 440 subsidiaries and is represented in over 150 countries.

In the U.S., Canada and Mexico, the Bosch Group manufactures and markets automotive original equipment and aftermarket solutions, industrial drives and control technology, power tools, security and communication systems, packaging technology, thermotechnology, household appliances and software solutions. The Bosch Group's products and services are designed to improving quality of life by providing innovative and beneficial solutions. In this way, the company offers technology worldwide that is "Invented for life." Additional information is available online at boschheatingandcooling.com and bosch.ca.

Bosch Thermotechnology in North America

Bosch Thermotechnology is a leading source of high quality water heating and comfort systems. The company offers gas tankless, electric whole house and point-of-use water heaters, Bosch and Buderus floor-standing and wall mounted boilers, Bosch and FHP geothermal, water-source and air-source systems as well as controls and accessories for all product lines. Bosch Thermotechnology is committed to being Simply Smart by offering products that work together as integrated systems that enhance quality of life in an ultra-efficient and environmentally friendly manner. For more information, visit boschheatingandcooling.com.

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