



**BOSCH**

Invented for life

## Bosch Condensing Wall Hung Boiler

Buderus GB162 Boiler

The GB162 is a high-performance, compact gas condensing boiler capable of achieving ultra-high efficiency levels of up to 96%. GB162 boilers are available with individual inputs of 290 MBH or 333 MBH. Each boiler is capable of up to 5:1 turndown ratio for a single boiler and up to 20:1 turndown for 4 boiler cascades.





# The Most Flexible Boiler System in the Industry

## Meet the Bosch Buderus GB162 Boiler

The GB162 can be used individually in a residence or commercial operation, but it is especially well suited for multi-boiler cascades. Typically linking together two to four boilers, cascades may be expanded up to 8 units to meet the required BTU load of your installation.

With the GB162's small size, wall-hung attribute, and light weight—only 150 lbs each—there is a great deal of flexibility in planning an installation. Not only is it easy to install as a single unit, but it is easy to install as a multi-boiler cascade. The boilers can be configured back-to-back or in-line by using our custom frame. This is especially useful when boiler rooms are small or unusually shaped. In fact, a 4-boiler cascade, delivering over 1,000 MBH, can fit in less than 13 square feet of floor space. This makes the GB162 ideal for new installations, as well as for replacing an inefficient heating system and freeing up valuable commercial floor space.

### Features

- ▶ Efficiency of up to 93% AFUE
- ▶ Ideal for commercial, light industrial, and larger residential homes
- ▶ Unique pump manifold kit with insulated cover
- ▶ Cascade kits includes boiler stands, low loss header, supply & return
- ▶ Can cascade up to 8 boilers and common vent up to 4
- ▶ Now approved for PP venting water heating, and circulator pump, each designed for the most common applications
- ▶ 5 year parts and labor for commercial installations. Limited lifetime warranty on the heat exchanger<sup>(1)</sup>
- ▶ Whisper quiet operations, Low flue gas emissions
- ▶ No Minimum Flow Rate
- ▶ LPG conversion kit available

**93%**  
AFUE



(1) Please go to [boschheatingandcooling.com](http://boschheatingandcooling.com) for full limited warranty details

## ALU-Plus Heat Exchanger

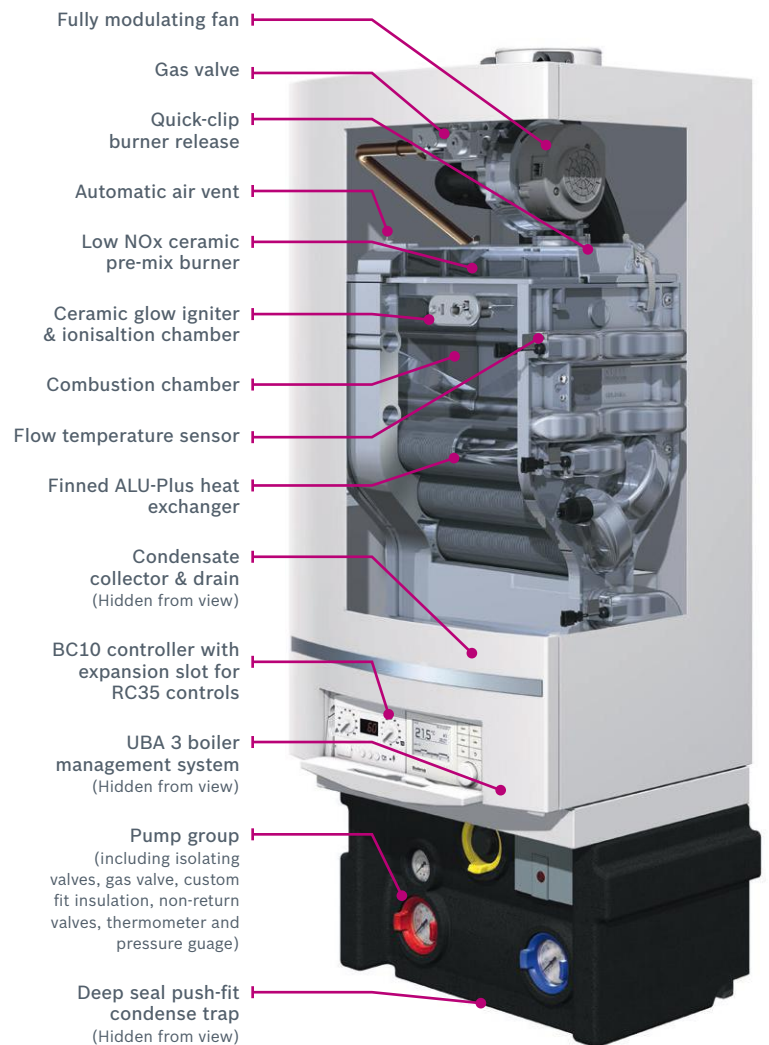
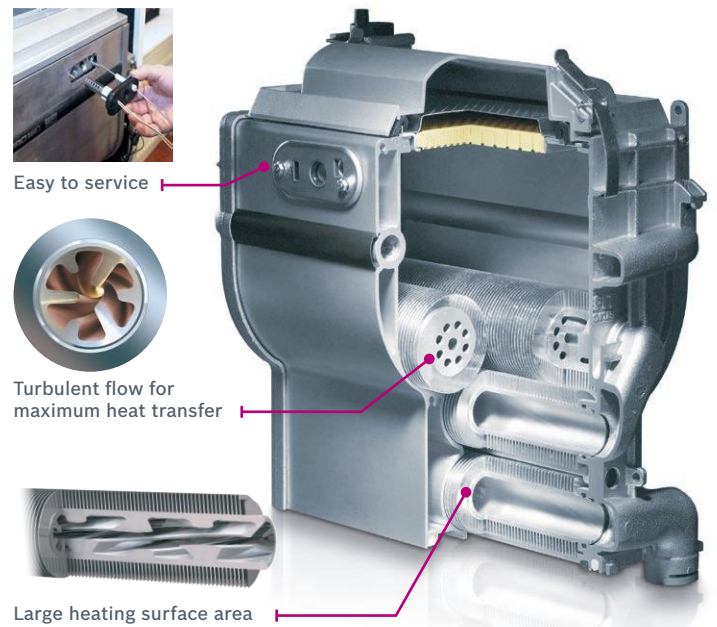
The Buderus GB162 wall-hung condensing boilers use an advanced, aluminum ALU-Plus heat exchanger design. This lightweight heat exchanger has a number of innovative features to prolong its life and increase the efficiency of the boiler. Fins on the outside of the aluminum tube increase the exterior surface area. This means more hot flue gas comes into contact with the heat exchanger to maximize heat transfer. A spiral channel on the inside of the tube increases the internal surface area and creates turbulence, bringing more water into contact with the heating surface, also ensuring optimal heat transfer. The surface of the heat exchanger tubes are treated with a patented plasma-polymerization process that leaves the surface so smooth that no deposits can adhere to it. In addition to also helping maintain extremely high efficiency, this keeps the heat exchanger clean.

## Achieve Greater Efficiencies

Energy efficiency is not just applicable to residential boilers, even though that is what we most often hear of. Boilers for commercial applications—from offices and public buildings to hospitals, schools and colleges, multi-family dwellings, and sports centers—also have a significant impact on our environment. Companies and owners of commercial properties are increasingly looking to improve or upgrade their boiler rooms to maximize energy efficiency, but also to minimize their carbon emissions and increase the value of the building. Cascade systems, a relatively new development in heating technology, achieve significant energy savings because their output can be precisely controlled to match the demand for heating. Each individual unit comes into operation only when the demand is high enough for an additional boiler in the cascade to fire. A cascade system adapts particularly well to seasonal temperature changes by allowing heat output to be precisely matched to heating demand whether in summer or winter.

The optional 4323 commercial control handles up to eight GB162 boilers and offers the flexibility to operate the cascade in either series or parallel mode. In series mode the heat demand will fire the first boiler and, as load increases, it will continue to modulate to 100%. If the heating demand is not satisfied, the control will fire additional boilers in the same manner until the load or capacity is met. To better conserve energy, the boiler cascade can also operate in parallel mode.

In parallel mode the first boiler would fire at 20% and, as the heat load increases, additional boilers would fire at 20% until all boilers are operational. Once all the boilers in the cascade are firing, the control collectively modulates all the boilers to satisfy the load. Parallel mode enables the boilers to run at the lowest modulation rate for the longest period of the heating cycle.



## Straight Forward Installation

A single GB162 boiler comes complete with a pump group and wall mounting bracket. For a single boiler installation our low loss header kit must be purchased additionally to expedite the assembly of the near boiler piping.

For a multi-boiler system, Buderus offers both in-line and back-to-back cascade packages. With all the necessary fittings and accessories to allow the installer to simply assemble the framework and join everything together. Once the boilers are mounted on the frame work, they are connected with the factory-supplied low-loss header and then covered with the pipe insulation. The result is an easy installation where everything fits perfectly, all the piping is neat, and the boilers are ready to be connected to the main heating system. The combination of the low-loss header and EMS control system ensures worry-free boiler flow rates.

The compact size and light weight of the GB162 allows for ease of installation, even where space is limited.

### 3rd step:

Individual GB162 boilers are mounted securely on the framework.



### 1st step:

The sturdy floor standing cascade framework is bolted together.



### 2nd step:

Low-loss header, flow, return and gas pipes are fitted.



### 4th step:

Pump groups (additional accessory) and valves are connected to boilers and flow and return pipe work attached to the headers.



### 5th step:

Custom-fit insulation is added to pipe work and fitted around each pump group to minimize heat loss. Can be assembled to either side.

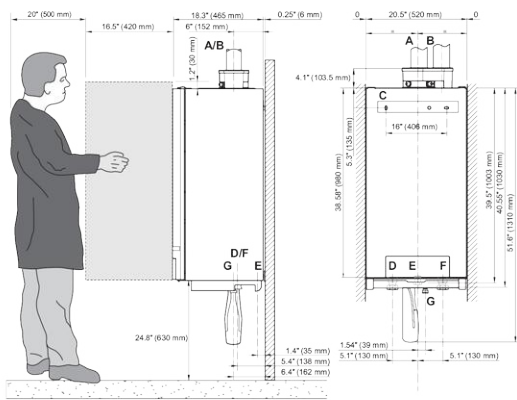


## System & Technical Information

Model	GB162/80 NG	GB162/80 LP*	GB162/100 NG	GB162/100 LP*
Performance Data				
Rated thermal load input	72,000–290,000 btu/h	62,000–270,000 btu/h	72,000–333,000 btu/h	62,000–315,000 btu/h
Heating capacity / Gross output	260,000 btu/h	242,000 btu/h	302,000 btu/h	282,000 btu/h
Net IBR	226,000 btu/h	210,000 btu/h	263,000 btu/h	245,000 btu/h
Efficiency rating	92.1% AFUE	92.1% AFUE	Low Fire 96.1% High Fire 90.8%**	Low Fire 96.1% High Fire 90.8%**
De-ration altitudes 2,000–5,500 ft.. %/1,000 ft.	2.2	2.3	2.0	2.1
De-ration altitudes 5,500–8,000 ft. %/1,000 ft.	2.0	2.5	1.7	2.1
De-ration altitudes 8,000–10,200 ft. %/1,000 ft.	2.8	2.0	2.6	1.9
Heating				
Maximum flow temperature	180°F (82°C)			
Max. working pressure (boiler)	50 psi (3.6 bar)			
Min. water circulation volume	0			
Flow temperature	86–180°F (30–82°C), can be set on the BC10 basic controller			
Resistance at rT = 20 K	3.26 psi (225 mbar)	3.26 psi (225 mbar)	4.57 psi (315 mbar)	4.57 psi (315 mbar)
Heating circuit volume of heat exchanger	1.3 gal. (5.0 l)	1.3 gal. (5.0 l)	1.3 gal. (5.0 l)	1.3 gal. (5.0 l)
Pipe Connections Boiler, Without Pump Group				
Gas connection (E)	Rp1"			
Heating water connection	G1½" union nut with female thread enclosed			
Condensate connection (G)	Ø 1¼" (32 mm)			
Flue Gas Values				
Condensate quantity at 122/86°F (50/30°C)	2.4 gal/h (9.0 L/h)	2.4 gal/h (9.0 L/h)	2.85 gal/h (10.8 L/h)	2.85 gal/h (10.8 L/h)
pH value of condensate	approx 4.1			
Flue gas mass flow rate, full load	35.3 g/s		44.9 g/s	
Flue gas temp, full load 176/140°F (80/60°C)	153°F (67°C)	149°F (65°C)	169°F (76°C)	165°F (76°C)
Flue gas temp, partial load 176/140°F (80/60°C)	142°F (61°C)	136°F (58°C)	142°F (76°C)	136°F (76°C)
Flue gas temp, full load 122/86°F (50/30°C)	118°F (48°C)	114°F (46°C)	124°F (76°C)	120°F (76°C)
Flue gas temp, partial load 122/86°F (50/30°C)	93°F (34°C)	88°F (31°C)	93°F (76°C)	88°F (76°C)
CO2 content at full load	9.3	9.6	9.4	9.7
Free fan feed pressure	0.602 inch w.c. (150 Pa)		0.883 inch w.c. (220 Pa)	
Ø flue gas system, room-air dependent	Ø 4" (100 mm)			
Ø flue gas system, room-air independent	Ø 4" (100 mm) / 4" (100 mm) parallel			

\* Special order field conversion kit required \*\* I=B+R Rating based on AHRI BTS2000 spec. 180° F supply and 80° F return

Without pump group

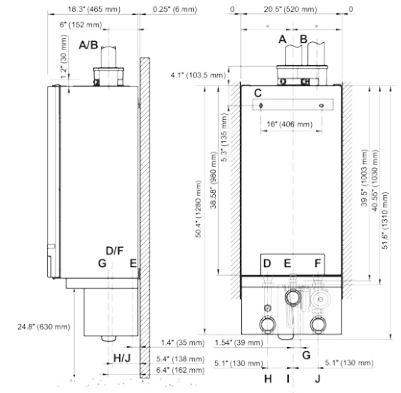


The required permanent minimum clearances are:

Front: 1" (25 mm)  
 Right Side: 0  
 Left Side: 0  
 Above: 6" (152 mm)

The position selected for installation MUST allow at least 37" (940 mm) for adequate space for servicing in front of the boiler. Maintain an installation clearance from combustible construction from hot water piping of at least 1" (25 mm).

With pump group



#### Buderus GB162 Components

<b>GB162-80</b>	Single 290 MBH boiler & pump module
<b>GB162-100</b>	Single 333 MBH boiler & pump module
<b>GB162-80LB</b>	Single 290 MBH LB* boiler & pump module
<b>GB162-100LB</b>	Single 333 MBH LB* boiler & pump module
<b>Single Boiler Kit</b> Required with purchase of a single boiler	Low-loss header and AM10 outdoor reset module with temperature sensor

#### Back to Back Installations - Boilers not included

<b>TR2 Cascade Package</b>	For 2 boilers assembled back to back
<b>TR3 Cascade Package</b>	For 3 boilers assembled back to back
<b>TR4 Cascade Package</b>	For 4 boilers assembled back to back

#### In-Line Installations - Boilers not included

<b>TL2 Cascade Package</b>	For 2 boilers assembled in line
<b>TL3 Cascade Package</b>	For 3 boilers assembled in line
<b>TL4 Cascade Package</b>	For 4 boilers assembled in line

#### Controls

<b>MCM10</b>	Cascade module
<b>AM10</b>	Weather compensation module

#### Flanges included with cascade system

Cascade	Flange Size & Type
<b>TL2 / TR2 / TL3</b>	2 ½ " Weld Neck and 2" NPT
<b>TR3</b>	2 ½ " Weld Neck
<b>TL4 / TR4</b>	3" Weld Neck

TR configuration



TL configuration



## Buderus GB162 Component Selector

Using the chart below select the BTU requirements and configuration then order the designated components.

Note: LP installations require field conversion and an LP conversion Kit (7738000850) must be ordered separately for each boiler that will be converted.

Configurations	Cascade NG MBH Input / Output	Cascade LP* MBH Input / Output	GB162-80 Boiler*	GB162-100 Boiler*	BACK-TO-BACK CASCADES**			IN-LINE CASCADES**			CONTROLS	
					TR2 Cascade Package	TR3 Cascade Package	TR4 Cascade Package	TL2 Cascade Package	TL3 Cascade Package	TL4 Cascade Package	MCM10	AM10
<b>TR2-160</b>	580 / 520	540 / 484	2		1						1	1
<b>TL2-160</b>	580 / 520	540 / 484	2					1			1	1
<b>TR2-180</b>	623 / 556	585 / 524	1	1	1						1	1
<b>TL2-180</b>	623 / 556	585 / 524	1	1				1			1	1
<b>TR2-200</b>	666 / 592	630 / 564		2	1						1	1
<b>TL2-200</b>	666 / 592	630 / 564		2				1			1	1
<b>TR3-240</b>	870 / 780	810 / 726	3			1					1	1
<b>TL3-240</b>	870 / 780	810 / 726	3						1		1	1
<b>TR3-260</b>	913 / 816	855 / 766	2	1		1					1	1
<b>TL3-260</b>	913 / 816	855 / 766	2	1					1		1	1
<b>TR3-280</b>	956 / 852	900 / 806	1	2		1					1	1
<b>TL3-280</b>	956 / 852	900 / 806	1	2					1		1	1
<b>TR3-300</b>	999 / 888	945 / 846		3		1					1	1
<b>TL3-300</b>	999 / 888	945 / 846		3					1		1	1
<b>TR4-320</b>	1160 / 1040	1080 / 968	4				1				1	1
<b>TL4-320</b>	1160 / 1040	1080 / 968	4							1	1	1
<b>TR4-340</b>	1203 / 1076	1125 / 1008	3	1			1				1	1
<b>TL4-340</b>	1203 / 1076	1125 / 1008	3	1						1	1	1
<b>TR4-360</b>	1246 / 1112	1170 / 1048	2	2			1				1	1
<b>TL4-360</b>	1246 / 1112	1170 / 1048	2	2						1	1	1
<b>TR4-380</b>	1289 / 1148	1215 / 1088	1	3			1				1	1
<b>TL4-380</b>	1289 / 1148	1215 / 1088	1	3						1	1	1
<b>TR4-400</b>	1332 / 1184	1260 / 1128		4			1				1	1
<b>TL4-400</b>	1332 / 1184	1260 / 1128		4						1	1	1

\* For High Altitude applications (4,000 - 10,000') order "LB" boilers listed in Component Pricing Table. \* For LP installations order 1 conversion kit (7738000850) per boiler ordered. \*\* Cascade Kits include low-loss header, frames, supply and return piping, pipe insulation, and connection set

# 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](http://boschheatingandcooling.com) and [bosch.ca](http://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](http://boschheatingandcooling.com).



Heating



Cooling



Hot Water



Controls

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