

# GB142-45 Condensing Gas Boiler

Engineering  
Submittal  
Sheet

# Buderus

## Boiler Overview



## Engineering Specifications

There shall be provided and installed a quantity of \_\_\_\_ Buderus GB142/45 wall-hung condensing hot water boiler(s), suitable for induced draft firing with natural gas or propane. Boiler(s) shall have an AFUE efficiency rating of 96.0%.

Boiler(s) shall utilize a cast aluminum heat exchanger with high quality condensing heating surfaces.

Boiler(s) shall be constructed, tested and labeled in accordance with ASME Section IV and shall bear the ASME stamp. Boilers shall be CSA approved and have an applicable Canadian Registration number.

Heat exchanger shall be labeled for 58psig maximum working pressure rating. An integrated pressure sensor shall ensure minimum and maximum water pressures are not exceeded.

Boiler shall be capable of modulating firing from 100% to 30% of capacity continuously based upon (i) supply and return water temperatures, and/or (ii) outdoor reset computerized control. Gross stack temperatures at full firing rate shall not exceed 180°F.

Standard equipment shall include a pump group assembly; Grundfos UPS15-58 three-speed circulator, supply and return shut-off valves, pressure gauge, 30psig relief valve and hydraulic separator with NPT system connections.

Minimal clearances shall be integral to the boiler cabinet design; a removable housing shall be used to access heat exchanger, burner components, gas valve and sensors.

Integrated controller shall monitor and control all combustion process functions, control of the boiler water temperature to a value required by the connected components and shall display current water temperatures or fault conditions with changes in operation status. Additional control functions shall include an on/off button, rotary temperature knobs, LED for burner operation and button for fault condition reset.

Independent outdoor temperature reset may be accomplished with the optional AM10 controller; a mounting enclosure shall be included with the provided resistance dependent sensor. Standard communication interface from the AM10 to boiler shall be a two-wire low voltage bus.

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**Buderus**

Performance Data		
	Unit	Value
Gas input	MBtu/h	160.9
Gross rated output	MBtu/h	143
IBR Rating	MBtu/h	124
Boiler horsepower	H.P	4.2
AFUE thermal efficiency	%	96

General Data		
	Unit	Value
Boiler category	-	Condensing
Heat exchanger construction	-	Aluminum
Maximum allowable working pressure	PSIG	58
Water content	Gallons	1.0
Weight - shipping (approx.)	Lbs	143
Weight - operating (approx.)	Lbs	171
Standard relief valve size (inlet x outlet)	Inch	3/4 x 3/4
Standard relief valve pressure rating (other capacities available upon request)	PSI	30
Venting category	-	IV

Operational Data		
	Unit	Value
Circulator setting	Speed	Medium or High
Maximum flow rate	GPM	15
Minimum flow rate	GPM	8
Maximum supply water temperature	°F	194

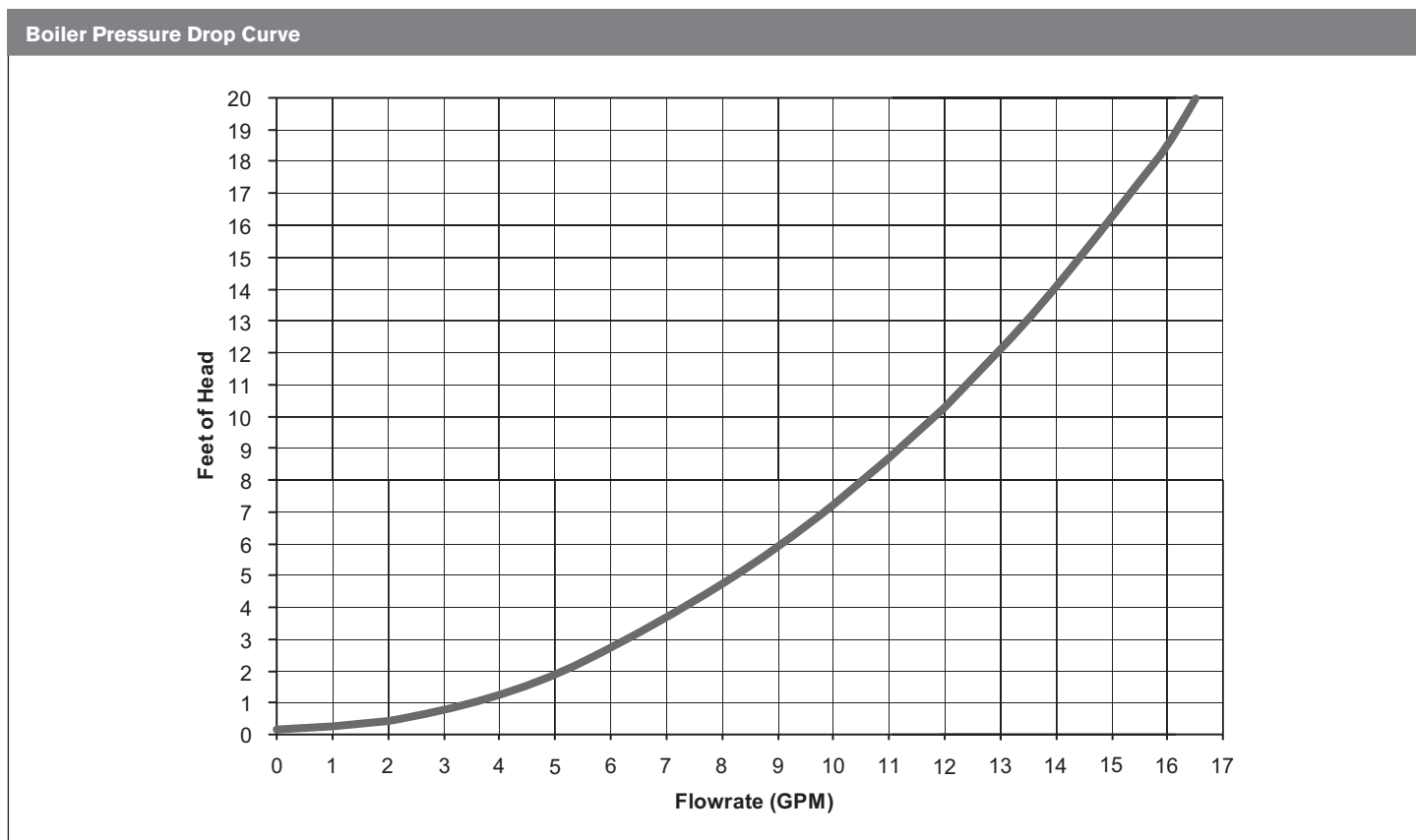
Electrical Data		
	Unit	Value
Electrical voltage mains	V AC	120
Electrical voltage controls	V AC	120
Power consumption max load	Watts	64
Power consumption partial load	Watts	20
Max. permissible fuse rating	Amps	15

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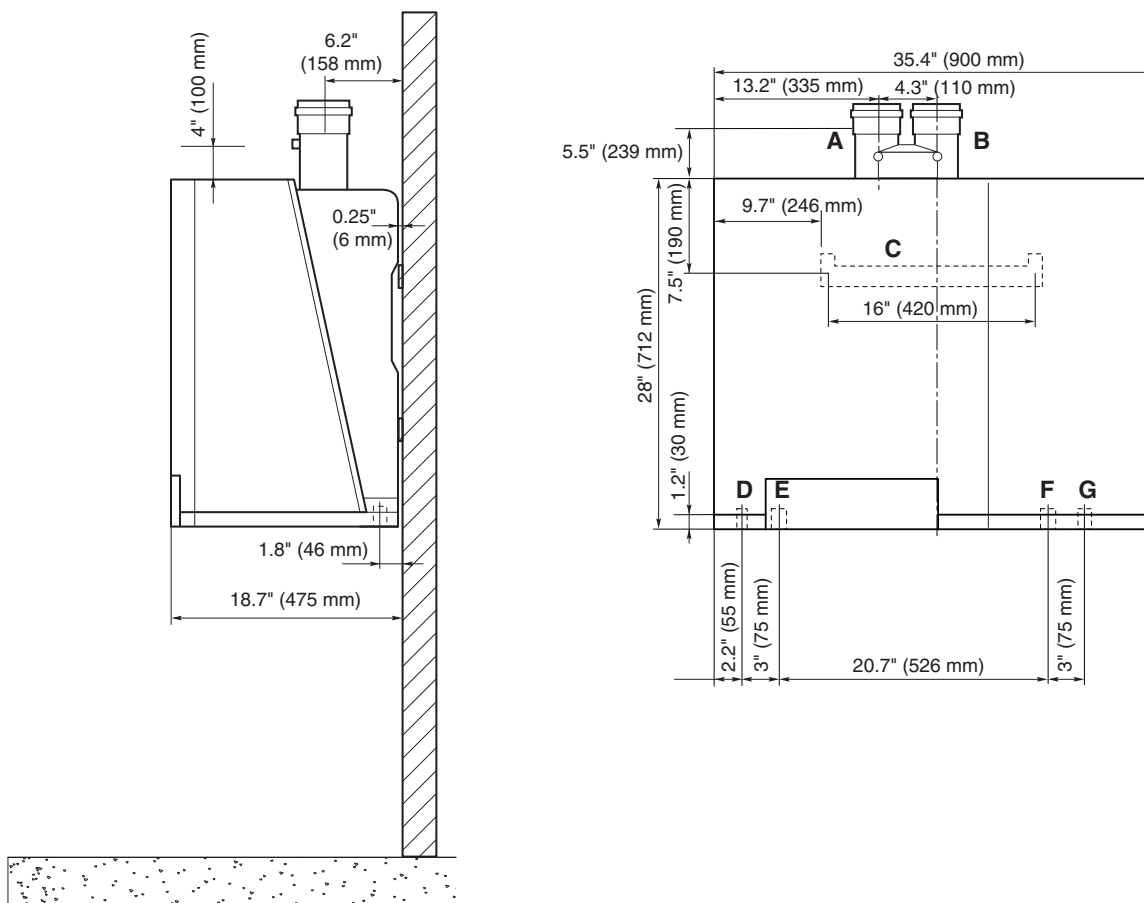


Burner Data		
	Unit	Value
Allowable fuels	-	Natural gas, LP
Min Inlet Gas Pressure - NG	Inch W.C.	3.5
Max Inlet Gas Pressure - NG	Inch W.C.	10.5
Min Inlet Gas Pressure - LP	Inch W.C.	8.0
Max Inlet Gas Pressure - LP	Inch W.C.	13.0

Approval Data	
Approval description	Approval number
Massachusetts Approval #	G3-0610-523
New York MEA #	MEA 419-07-E
CRN #	7790.7C



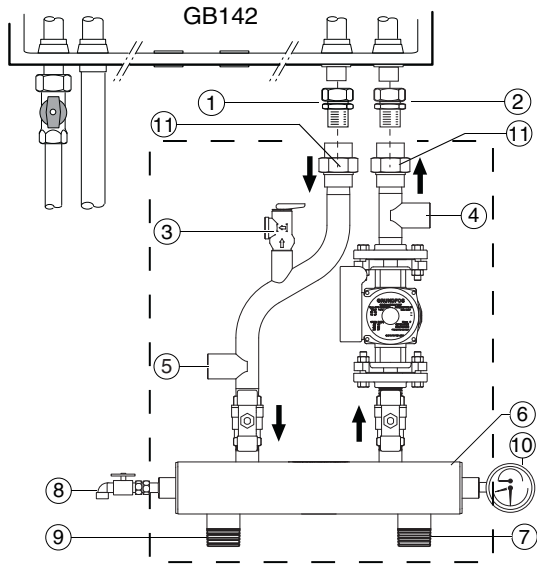
**Boiler Dimensions and Connections**



**Boiler Dimensions / Connections Data**

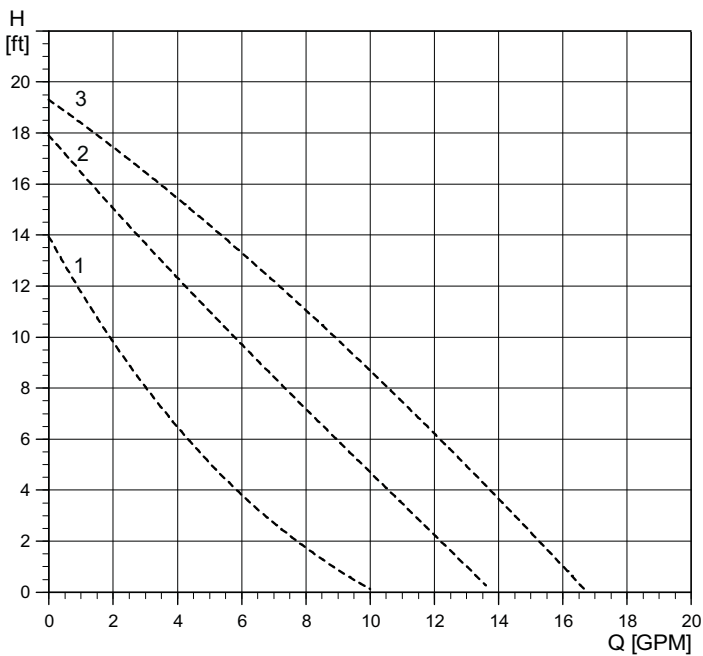
Item	Description	Unit	Value
A	Flue gas connection (inside diameter)	Inch	3
B	Air intake (inside diameter)	Inch	3
C	Wall bracket	—	—
D	Boiler gas connection	Inch	3/4
E	Boiler condensate drain (inside diameter)	Inch	1.3
F	Boiler supply	Inch	1
G	Boiler return	Inch	1

**Pump Manifold Connections**



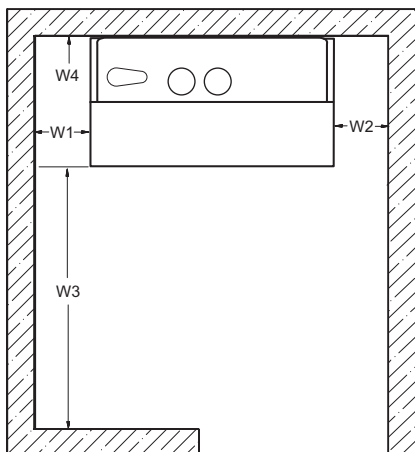
Ref	Description	Unit	Value
1	Compression fitting (heating supply)	—	—
2	Compression fitting (heating return)	—	—
3	Relief valve	—	—
4	DHW return	Inch	1 FPT
5	DHW supply	Inch	1 FPT
6	Low loss header	—	—
7	System return	Inch	1½ MPT
8	Drain valve	—	—
9	System supply	Inch	1½ MPT
10	Tridicator	—	—
11	Di electric union	—	—

**Grundfos UPS 15-58 FC Pressure Drop Curve**

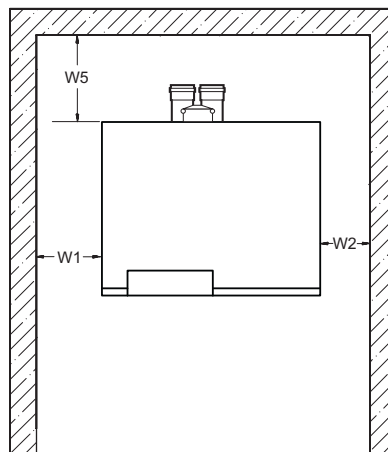


- - - - With check valve
- 3 Circulator speed - high
- 2 Circulator speed - medium
- 1 Circulator speed - low

**Boiler Clearances**



Top View



Front View

Description	Unit	Minimum clearance
Wall clearance W1	Inch (mm)	> 6 (150)
Wall clearance W2	Inch (mm)	> 4 (100)
Wall clearance W3	Inch (mm)	20 (500)
Wall clearance W4	Inch (mm)	Wall Mounted
Top clearance W5	Inch (mm)	> 8 (203)

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