

GB300 SERIES

Smith

**Smith**  
CAST IRON BOILERS



**GB300series**

ATMOSPHERIC, GAS-FIRED STEAM  
OR HOT WATER BOILER





# GB300 ATMOSPHERIC BOILER

## A Best-of-Class Commercial Boiler Designed for Value and Performance

The GB300 Series cast iron boiler is ideal for commercial steam or water heating systems utilizing natural or propane gases. Seventeen sizes are available, ranging from 400 MBH up to 2,000 MBH, making it easy to select the right size boiler to fit your spec and your budget.

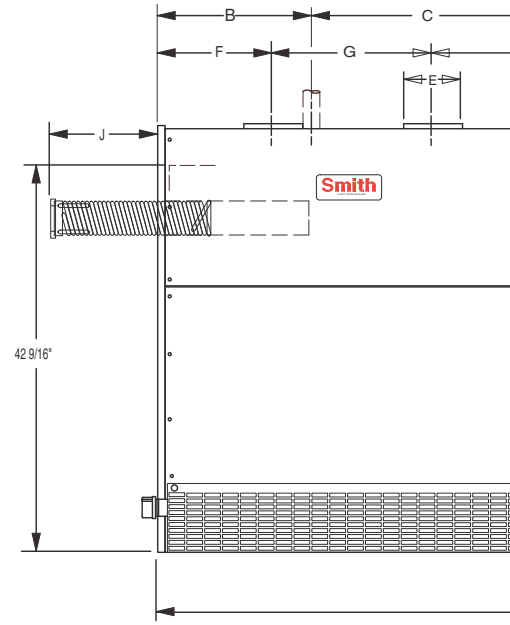
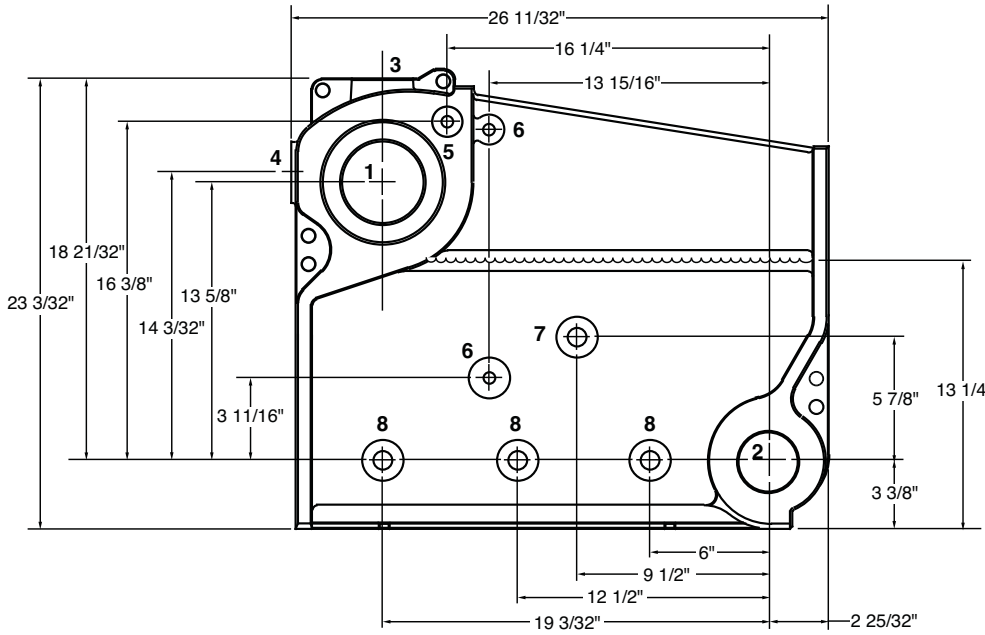
## Easy to install and maintain

GB300 Series boilers are simple to assemble to reduce installed cost. Boilers are tapped for right or left hand piping to provide versatility in tight spaces. Heavy-duty cast iron sections are compact to minimize boiler height for low ceiling installations. Flexible, high-temperature seals reduce assembly time with sophisticated equipment. Maintenance is simplified with easy access flue cleanout openings located in the front of the unit. Dependable performance, wide range of sizes, ease of installation and service – all of which make the GB300 the best atmospheric boiler value in its class.



## GB300 Series boilers include:

- Rugged cast iron construction
- Compact section design for ease of handling and assembly
- Machined ports for precision surfaces
- Aluminized steel flue collector
- Integral draft hood design maintains very low profile
- Short, individual draw rods to simplify assembly and reduce mechanical stress
- Flexible, high temperature seals reduce assembly time and minimize the need for sophisticated assembly equipment
- Easy access front cleanout opening
- Tankless coil options available



**Casting Dimensions & Tapping Locations(4)**

Tapping	Size	For Water Boilers	For Steam Boilers
1	4" NPT	Supply & Opt. Tankless Heater	Opt. Steam Relief Valve Location or Skim Tapping
2	3" NPT	Return & Boiler Drain/Blowoff	Return & Boiler Drain/Blowoff
3	1-1/2" NPT	Water Relief Valve	Steam Relief Valve & Float LWCO's (6)
4	3/4" NPT	Operating Control (5)	Pressure Gauge
5	3/4" NPT	High Limit (5)	High Limit (6)
6	3/4" NPT	Temperature/Pressure Gauge (Top Tapping) (5)	Gauge Glass w/ LWCO's Control Tree (6)
7	3/4" NPT	Optional Probe LWCO	Optional Probe LWCO (6)
8	1" NPT	Optional Float LWCO's	Optional Float LWCO's (6)

**I = B = R Ratings, and D**

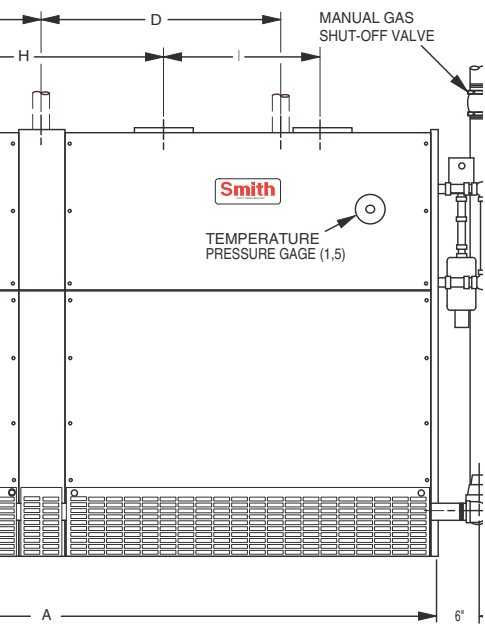
Boiler Number (1)	Boiler Horsepower	Ratings Natural & Propane Gas(2)					A	B	C	D
		A.G.A. Input (MBH)	A.G.A. Output(2) (MBH)	I=B=R Net Ratings (3)						
				Steam		Water				
				Sq. Ft.	MBH	MBH				
†GB300-Ø-5	9.7	400	326	1017	244.6	283.5	29	14-1/2	-	-
†GB300-Ø-6	12.2	500	408	1273	306.1	354.8	34-1/2	14-1/2	-	-
†GB300-Ø-7	14.6	600	489	1526	366.8	425.2	40	20	-	-
†GB300-Ø-8	17.1	700	571	1782	428.3	496.5	45-1/2	20	-	-
†GB300-Ø-9	19.5	800	652	2034	489.1	566.9	51	25-1/2	-	-
†GB300-Ø-10	21.9	900	734	2290	550.6	638.3	56-1/2	14-1/2	27-1/2	-
†GB300-Ø-11	24.3	1000	815	2543	612.0	708.7	62	14-1/2	33	-
†GB300-Ø-12	26.8	1100	897	2799	672.9	780.0	67-1/2	14-1/2	38-1/2	-
†GB300-Ø-13	29.2	1200	978	3051	733.7	850.4	73	20	33	-
†GB300-Ø-14	31.7	1300	1060	3307	795.2	921.7	78-1/2	20	38-1/2	-
†GB300-Ø-15	34.1	1400	1141	3560	856.0	992.2	84	20	44	-
†GB300-Ø-16	36.5	1500	1223	3816	917.5	1063.5	89-1/2	14-1/2	27-1/2	33
†GB300-Ø-17	39.0	1600	1304	4068	978.2	1133.9	95	14-1/2	33	33
†GB300-Ø-18	41.4	1700	1386	4324	1039.7	1205.2	100-1/2	20	27-1/2	33
†GB300-Ø-19	43.8	1800	1467	4577	1100.5	1275.7	106	20	33	33
†GB300-Ø-20	46.3	1900	1549	4833	1162.0	1347.0	111-1/2	20	33	38-1/2
†GB300-Ø-21	48.7	2000	1630	5086	1222.8	1417.4	117	20	38-1/2	38-1/2

(1) Important Ordering Information: † Insert "P" for Propane, Ø Insert "S" for Steam, "W" for Water

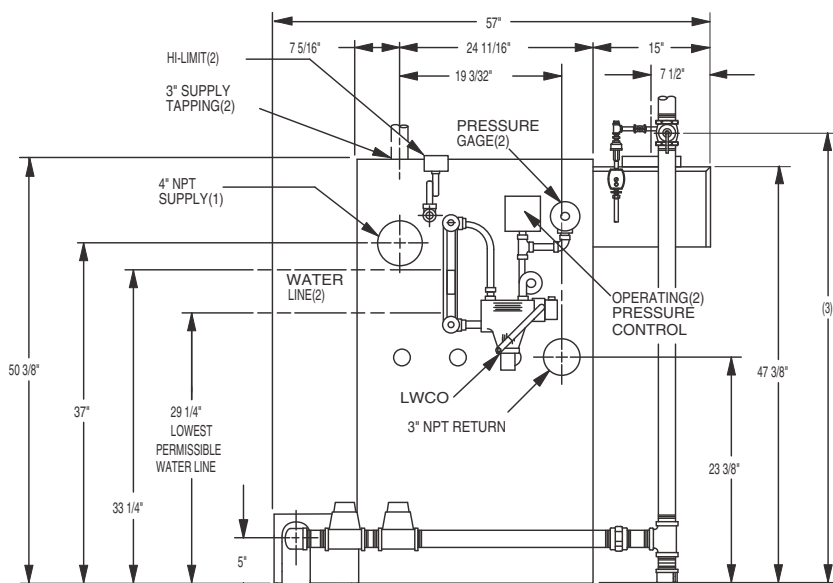
(2) Based on S.S. Eff. = 80.5% for Steam, S.S. Eff. = 81.5% for Water. For forced hot water heating systems where the boiler and all the piping are within the area to be heated, the boiler may be selected on the basis of its A.G.A. Output. NOTE: For altitudes above 2,000 feet, ratings should be reduced at the rate of 4% for each 1,000 feet above sea level. \*Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.\*

(3) The net I=B=R Steam Ratings shown are based on a piping and pickup allowance of 1.15. The manufacturer should be consulted before selecting a boiler for intermittent system operation, extensive piping system, etc.

(4) Based on 20 foot chimney height.



FRONT VIEW(7)



RIGHT VIEW

**DIMENSIONAL DRAWING AND TAPPING CHART NOTES:**

- (1) Water boilers only.
- (2) Steam boilers only.
- (3) Install manual shutoff valve 5 ft. above floor where required by local codes.
- (4) The left end section contains the same tappings as the right end section.
- (5) These controls must be located on the supply piping side of the boiler.
- (6) These controls must be located on the steam equalizer piping side of the boiler.
- (7) 5-12 Sections: Single jacket front.  
13-21 Sections: Dual jacket front with splice panel.

S.S. Efficiency	
Water	81.5%
Steam	80.5%



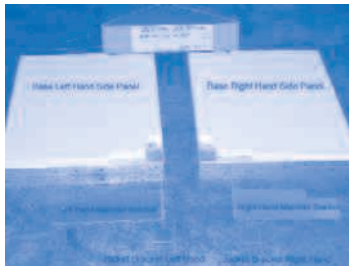
**Dimensions (inches)**

Dimensions (inches)						Equivalent Breeching & Chimney Diameter (4) (inches)	Water Contents (Gals.)		Working Weight (Lbs.)	
E	F	G	H	I	J		Steam	Water	Steam	Water
10	14-1/2	-	-	-	26	10	14.0	25.5	1231	1326
12	17-1/4	-	-	-	38	12	17.3	31.4	1452	1570
12	20	-	-	-	42	12	20.6	37.3	1674	1813
2 @ 10	13-5/16	18-7/8	-	-	46	14	23.9	43.2	1895	2056
2 @ 10	14-11/16	21-5/8	-	-	54	14	27.2	49.0	2116	2300
2 @ 10	16-1/16	24-3/8	-	-	54	14	30.5	54.9	2345	2552
2 @ 12	17-1/2	27-1/8	-	-	54	15	33.8	60.8	2566	2797
2 @ 12	18-13/16	29-7/8	-	-	54	15	37.1	66.6	2787	3041
2 @ 12	20	33	-	-	54	15	40.4	72.5	3057	3341
12, 2 @ 10	20	-	26-3/8	18-7/8	54	16	43.7	78.4	3327	3641
4 @ 10	13-5/16	18-7/8	19-3/4	18-7/8	54	17	47.0	84.3	3597	3941
4 @ 10	13-5/16	18-7/8	21-1/8	21-5/8	54	17	50.3	90.1	3867	4241
4 @ 10	14-11/16	21-5/8	22-7/16	21-5/8	54	17	53.6	96.0	4137	4541
4 @ 10	14-11/16	21-5/8	23-13/16	24-3/8	54	17	56.9	101.9	4407	4841
4 @ 10	16-1/16	24-3/8	25-1/8	24-3/8	54	17	60.2	107.7	4677	5141
10, 2 @ 12	16-1/16	24-3/8	26-7/16	27-1/8	54	19	63.5	113.6	4963	5457
4 @ 12	17-1/2	27-1/8	27-3/4	27-1/8	54	20	66.8	119.5	5264	5759

of 1.333. The net I=B=R Water Ratings shown are based on an al- or installations having unusual piping and pickup requirements such

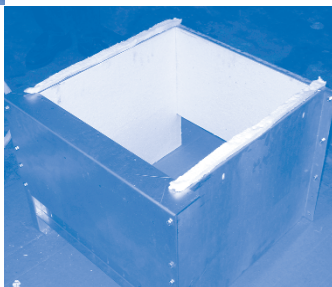
**NOTE: Dimensions are approximate. Should not be used to "rough in" equipment.**

*Every GB300 Series boiler is shipped with a pictorial, step-by-step, installation manual for problem-free, "out-of-the-box" assembly.*



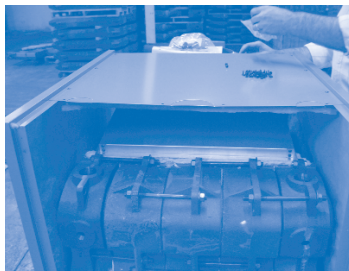
**Burner base and side panels packaged for easy assembly**

**Burner base and frame assembly with insulation board installation**



**Cast iron section assembly with rope seal and gasket placement**

**Cast iron section assembly with flue collector/draft hood installation**



**Jacket panel assembly**

## STANDARD EQUIPMENT

### All Boilers

- Cast iron sections with machined ports  
Water: 80 psi M.A.W.P.  
Steam: 15 psi M.A.W.P.
- Both end sections tapped to accommodate a gauge glass and up to three low water cut-offs
- Flexible, high temperature hydronic seals
- Fiberglass rope seal between sections
- Insulated aluminized steel base with aluminized steel lanced port burners
- Stainless Steel lanced port burners for propane gas.
- Continuous gas manifold capped for gas train connection at either end
- Insulated metal jacket
- Low profile, aluminized steel flue collector and draft hood
- 7" W.C. gas train with fittings
- Electronic spark ignited pilot system  
5-12 sections: (1) S8610 Ignition control & pilot  
13-21 sections: (2) S8610 Ignition controls & pilots
- Simple and efficient on-off operation

### Water Boilers

- 40 psi pressure relief safety valve
- Theraltimeter (Temp. & Pressure gauge)
- Hi-Limit operating temperature control
- Manual reset, Hi-Limit temperature control

### Steam Boilers

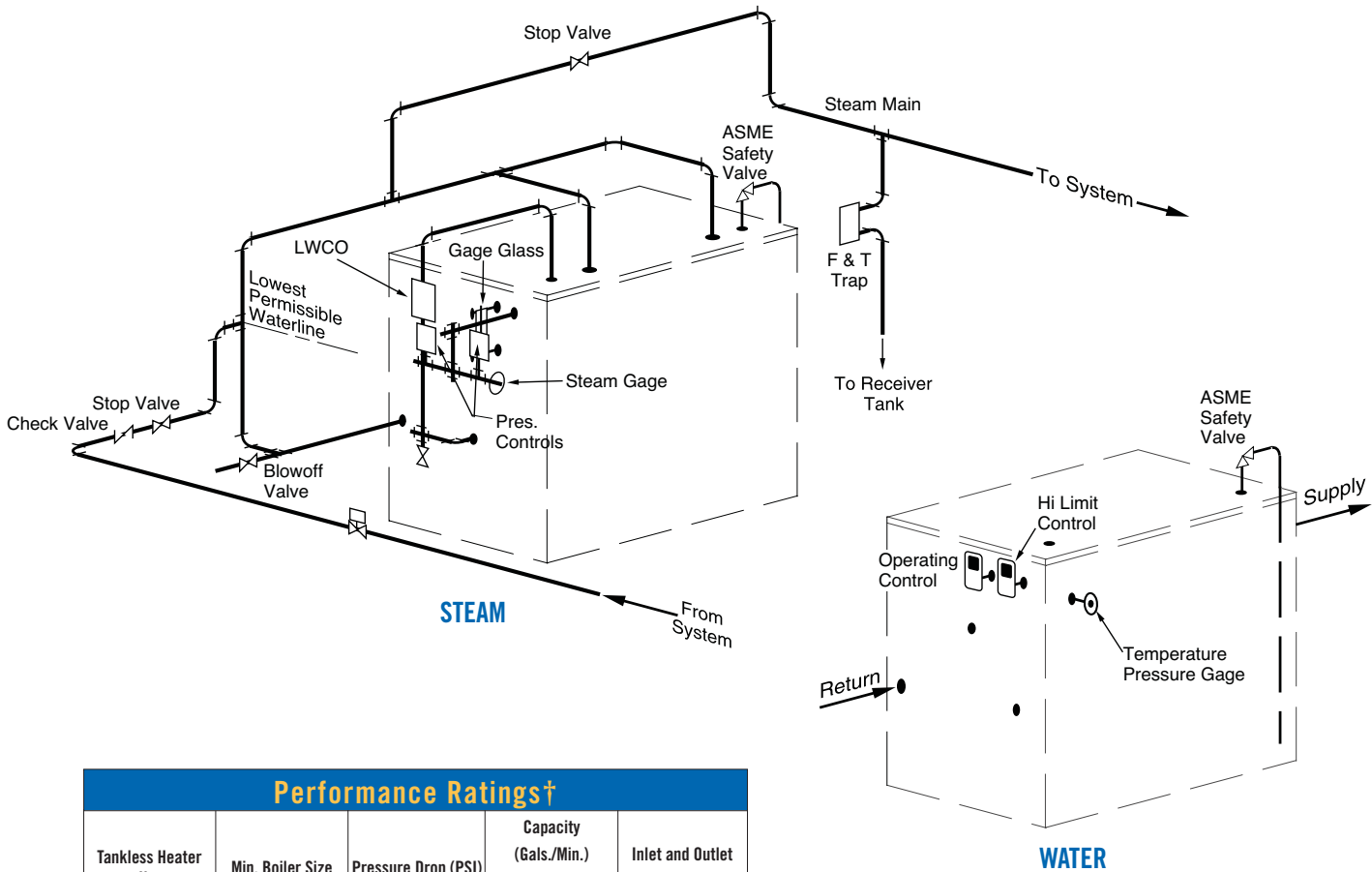
- 15 psi pressure relief safety valve
- Pressure gauge
- Hi-Limit operating pressure control
- Manual reset, Hi-Limit pressure control
- Gauge glass with gauge cocks and guards
- Low water cut-off, M&M #67 float type

## OPTIONAL EQUIPMENT

- Assembled Sections
- Assembled Base
- Tankless heaters (see page 6 for details)
- Low limit operating temperature control for domestic water heating
- Standing pilot ignition system
- Low water cut-off and feeder combination controls
- Electronic probe type low water cut-off
- CSD-1, FM, or IRI approved gas trains
- 5" W.C. gas train with fittings

# GB300 series

## RECOMMENDED BOILER PIPING



### Performance Ratings†

Tankless Heater No.	Min. Boiler Size	Pressure Drop (PSI)	Capacity (Gals./Min.) Boiler Water @ 200°F	Inlet and Outlet Size (Ins.)
L34	5	11.00	5.33	1/2
L44	5	7.10	5.33	1/2
L45	5	8.33	6.66	1/2
L56	5	11.66	8.00	1/2
L67	5	15.00	9.33	3/4
L78	6	8.33	10.67	3/4
L89	7	10.00	12.00	3/4
L910	7	11.66	13.33	3/4
L1011	8	13.35	14.66	3/4
L1112	9	16.67	16.00	3/4

† Capacities of tankless heaters based on 100° temperature rise.

### Riser, Equalizer & Header Pipe Sizes

Boiler Model	Risers	Equalizer	Header
GB300-5 to -9	1 @ 3"	1-1/2"	3"
GB300-10 to -15	2 @ 3"	2"	4"
GB300-16 to -21	3 @ 3"	3"	5"

*In the interest of product improvement, we reserve the right to make changes without notice.*

**Smith**  
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