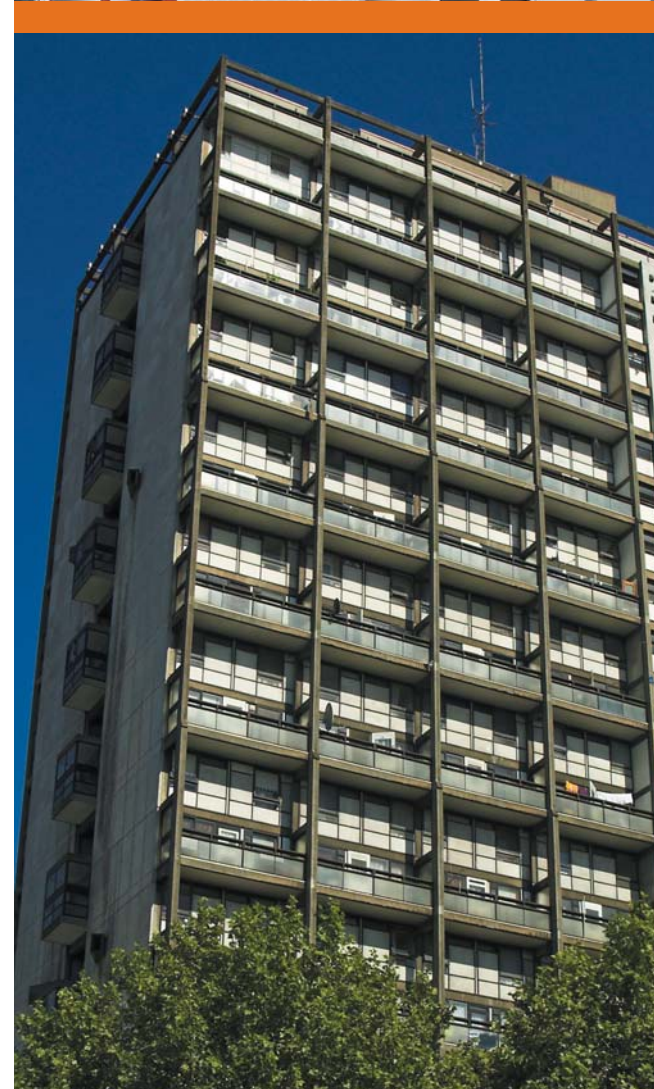


# D248

## GAS-FIRED WATER OR STEAM BOILERS

- 28 Sizes in Capacities from 300 to 3,000 Mbh
- Ideal for apartment buildings, schools, churches, offices and manufacturing facilities



**Dunkirk<sup>®</sup>** 

*America's Hottest Boiler Value!*

An ISO 9001-2000 Certified Company

# D248 SERIES

THE NEXT GENERATION COMMERCIAL BOILER



**Designed to Take Modular Efficiency to the Next Level**

## **New!** Plug 'N Play Harness and Junction Box

**Worry Free Wiring for Fast, Easy Installation...**

Individual base and junction box controls are designed for easy installation with Plug 'N Play harnesses. The entire boiler links together in a "snap". A color-coded factory supplied harness eliminates wiring errors.



## **A Win-Win for Owner and Dealer Modular Efficiency**

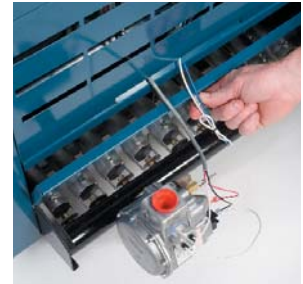
Most commercial boilers are either "all-on" or "all-off". The D248 boiler when used in conjunction with the optional Argo AMB Control Kit will stage fire the individual bases. Depending on model, capacities as low 11% of full load can be obtained for optimal performance. The optional AMB Control Kit adjusts the water temperature for increased fuel economy. The control balances section run time for increased reliability. The modular base design allows for built in back-up to reduce "no heat" situations.



## **New!** Jacket Panels

**Easy Installation, Easy Access...**

The new one piece front and top panel is designed for an easy fit and installs with less hardware. A lift out door provides easy access for burner inspection. The three piece side panels can be mounted after the supply and return lines allowing for installation flexibility.



## **New!** Cast Iron Sections

**Better Design, Increased Reliability, Serviceability...**

The new design offers improved combustion performance and now comes with a 10-year limited warranty on cast iron sections. Cast iron sections are also backward compatible with existing D247 sections in the field for maximum serviceability.



## **CSD1 Option**

D248 boilers are available with a CSD1 option to comply with CSD1 standards where required by public building code. The CSD1 option provides the increased number of controls and safety devices required to meet CSD1 standards.

## **Peace of Mind**

- All boiler bases are factory assembled and live-fire tested.
- Controls and junction box assembly are factory tested.
- 10-year Limited Warranty on Cast Iron Sections (Water & Steam)

## D248 STANDARD EQUIPMENT

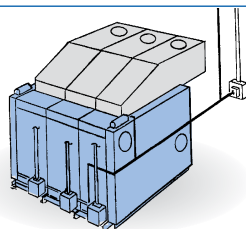
### ELECTRONIC IGNITION BASE STANDARD EQUIPMENT

- Base
- Fire Door
- Burner Orifice
- Manifold
- Main and Pilot Burner
- Electronic Pilot Gas Valve
- Intermittent Pilot Module
- High Gas Pressure Switch

D248 Series Boiler Bases are preassembled at the factory with burner manifold, burner orifices, gas valves, electronic ignition and pilot installed, ready for field installation of the pre-tested boiler sections and appropriate packages.

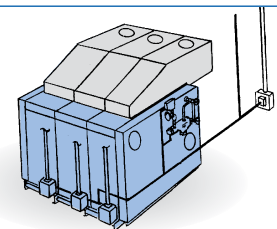
### Water Trim Package

- Limit Control (two required on units 2,500,000 BTU and larger)
- Pressure Temperature Gauge
- Relief Valve
- Drain Valve
- Complete Jacket Assembly



### Steam Trim Package

- Low Water Cut-Off
- Glass Gauge Set
- Pop Safety Valve
- Steam Gauge
- Pressure Limit
- Drain Valve
- Complete Jacket Assembly



## FEATURES & BENEFITS

### Space Savings

Low profile and compact design provides commercial heating capacity within constrained areas.

### Electronic Ignition

Electronic ignition automatically lights the pilot only when needed, eliminating fuel waste.

### Modular Combination Bases

Available in 300, 400 and 500 MBH, bases are bolted together using a combination of modules to meet specific heating capacities.

### Optional AMB Modular Boiler Control Kit

Includes wiring harness specifically designed for fast, easy installation when paired with the D248 boiler. Features a programmable, self-diagnostic, digital display and memory is not affected by power loss.



### Easy Access & Maintenance

Draft Hoods allow for easy cleaning or inspection of flueways. Concealed controls provide added protection and are easily accessible.



### Cast Iron Quality

Improved design for better combustion performance. Backward compatible with existing D247 sections in the field for maximum serviceability.

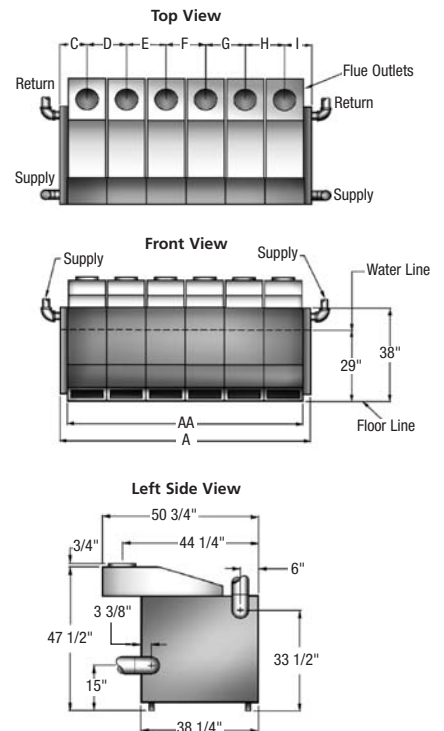
### Easy Installation

The D248 is delivered in sections with factory complete bases and fuel trains, and then assembled on site. All sizes of boilers are installed the same way, aiding installer familiarity.



## D248 SERIES DIMENSIONS IN INCHES

Boiler Model No.	Water Content in Gallons		Shipping Weight Lbs.	A Jacket Width L to R	AA Base & Battery Length	C	D	E	F	G	H	I
	Steam	Water										
300	20	26	922	18 3/4	16 3/4	9 3/8	-	-	-	-	-	9 3/8
400	25	33	1133	23	21	11 1/2	-	-	-	-	-	11 1/2
500	30	40	1344	27 1/4	25 1/4	13 5/8	-	-	-	-	-	13 5/8
600	35	46	1555	31 1/2	29 1/2	9 3/8	12 3/4	-	-	-	-	9 3/8
700	40	52	1766	35 3/4	34 3/4	9 3/8	14 7/8	-	-	-	-	11 1/2
800	45	58	1977	40	38	11 1/2	17	-	-	-	-	11 1/2
900	50	65	2188	44 1/4	42 1/4	11 1/2	19 1/8	-	-	-	-	13 5/8
1000	55	71	2399	48	46 1/2	13 5/8	21 1/4	-	-	-	-	13 5/8
1100	60	78	2610	52 3/4	50 3/4	9 3/8	14 7/8	17	-	-	-	11 1/2
1200	65	84	2821	57	55	11 1/2	17	17	-	-	-	11 1/2
1300	70	91	3032	61 1/4	59 1/4	9 3/8	17	21 1/4	-	-	-	13 5/8
1400	75	97	3243	65 1/2	63 1/2	11 1/2	19 1/8	21 1/4	-	-	-	13 5/8
1500	80	104	3454	69 3/4	67 3/4	13 5/8	21 1/4	21 1/4	-	-	-	13 5/8
1600	85	110	3665	74	72	11 1/2	17	17	17	-	-	11 1/2
1700	90	117	3876	78 1/4	76 1/4	9 3/8	14 7/8	19 1/8	21 1/4	-	-	13 5/8
1800	95	123	4087	82 1/2	80 1/2	11 1/2	17	19 1/8	21 1/4	-	-	13 5/8
1900	100	130	4298	86 3/4	84 3/4	11 1/2	19 1/8	21 1/4	21 1/4	-	-	13 5/8
2000	105	136	4509	91	89	13 5/8	21 1/4	21 1/4	21 1/4	-	-	13 5/8
2100	110	143	4720	95 1/4	93 1/4	9 3/8	12 3/4	17	21 1/4	21 1/4	-	13 5/8
2200	115	149	4931	99 1/2	97 1/2	11 1/2	17	17	19 1/8	21 1/4	-	13 5/8
2300	120	156	5142	103 3/4	101 3/4	11 1/2	17	19 1/8	21 1/4	21 1/4	-	13 5/8
2400	125	162	5353	108	106	11 1/2	19 1/8	21 1/4	21 1/4	21 1/4	-	13 5/8
2500	130	169	5564	112 1/4	110 1/4	13 5/8	21 1/4	21 1/4	21 1/4	21 1/4	-	13 5/8
2600	135	175	5775	116 1/2	114 1/2	9 3/8	12 3/4	17	21 1/4	21 1/4	21 1/4	13 5/8
2700	140	182	5986	120 3/4	118 3/4	9 3/8	14 7/8	19 1/8	21 1/4	21 1/4	21 1/4	13 5/8
2800	145	188	6197	125	123	11 1/2	17	19 1/8	21 1/4	21 1/4	21 1/4	13 5/8
2900	150	195	6408	129 1/4	127 1/4	11 1/2	19 1/8	21 1/4	21 1/4	21 1/4	21 1/4	13 5/8
3000	155	201	6619	133 1/2	131 1/2	13 5/8	21 1/4	21 1/4	21 1/4	21 1/4	21 1/4	13 5/8

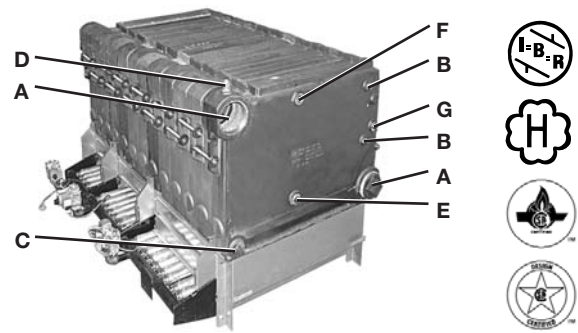


Note: All supply and return connections are 4 inches.

## D248 SERIES RIGHT- AND LEFT-END TAPPINGS DATA

\* If opening F is to be used for something other than the Pop Safety Valve or Pressure Relief Valve, or the Safety/Relief Valve is larger than 1", the Safety/Relief Valve must be installed in the Header Piping as near to the boiler as possible.

OPENING	SIZE	STEAM	WATER
A	4"	Supply and Return	Supply and Return
B	1/2"	Primary LWCO and Gauge Glass Set	Plugged
C	1 1/2"	Drain, Left End	Drain, Left End
C	3/4"	Drain, Right End	Drain, Right End
D	1/2"	Plugged	Limit Control
E	1"	Accessories	Accessories
*F	1"	Pop Safety Valve	Pressure Relief Valve
G	3/4"	Plugged or Electronic (Probe Type) LWCO	Plugged



## D248 SERIES WATER OR STEAM SPECIFICATIONS

Boiler Model No.	A.G.A. Input (1)		NET I=B=R Ratings (2)			Base Size & Flue Outlet			Chimney Size (6)	Flue Collector Size to Chimney	Horsepower Gross Output (4)	Pressure Drop Thru Water Boiler (5)		
	Btu Mbh	Btu Mbh	Steam Sq. Ft. (3)	Steam Btu Mbh	Water Btu Mbh	300 8"	400 10"	500 12"				I.D. x Ht.	GPM	In. Water
300	300	240	750	180	209	1			8"x20'	8	7.16	18.9 37.8	0.10 0.50	
400	400	320	1000	240	278		1		10"x20'	10	9.55	25.2 50.4	0.27 0.86	
500	500	400	1250	300	348			1	12"x20'	12	11.94	31.5 63.0	0.40 1.20	
600	600	480	1500	360	417	2			12"x20'	12	14.33	37.8 75.6	0.50 1.70	
700	700	560	1750	420	487	1	1		12"x20'	12	16.72	44.1 88.2	0.70 2.50	
800	800	640	2000	480	557		2		14"x20'	14	19.10	50.4 100.8	0.88 2.90	
900	900	720	2250	540	626		1	1	14"x20'	14	21.49	56.7 113.4	1.10 3.80	
1000	1000	800	2500	600	696			2	14"x20'	14	23.88	63.0 126.0	1.30 4.00	
1100	1100	880	2750	660	765	1	2		16"x20'	16	26.27	69.3 138.6	1.50 5.00	
1200	1200	960	3000	720	835		3		16"x20'	16	28.66	75.6 151.2	1.80 6.00	
1300	1300	1040	3250	780	904	1		2	16"x20'	16	31.04	81.9 163.8	2.00 5.60	
1400	1400	1120	3500	840	974		1	2	18"x20'	18	33.43	88.2 176.4	2.40 7.00	
1500	1500	1200	3750	900	1043			3	18"x20'	18	35.82	94.5 189.0	2.60 8.30	
1600	1600	1280	4008	962	1113		4		18"x20'	18	38.21	100.8 201.0	2.80 9.60	
1700	1700	1360	4283	1028	1183	1	1	2	18"x20'	18	40.60	107.1 214.2	3.15 10.30	
1800	1800	1440	4563	1095	1252		2	2	20"x20'	20	42.99	113.4 226.8	3.50 11.00	
1900	1900	1520	4838	1161	1322		1	3	20"x20'	20	45.37	119.7 239.4	4.00 12.50	
2000	2000	1600	5117	1228	1391			4	20"x20'	20	47.76	126.0 252.0	4.50 14.00	
2100	2100	1680	5392	1294	1461	2		3	20"x20'	20	50.15	132.3 264.6	4.95 16.00	
2200	2200	1760	5671	1361	1530		3	2	22"x20'	22	52.54	138.6 277.2	5.40 18.00	
2300	2300	1840	5913	1426	1600		2	3	22"x20'	22	54.93	144.9 289.8	5.70 17.00	
2400	2400	1920	6213	1491	1670		1	4	22"x20'	22	57.31	151.2 302.4	6.00 19.00	
2500	2500	2000	6471	1553	1739			5	22"x20'	22	59.70	157.5 315.0	6.00 20.50	
2600	2600	2080	6729	1615	1809	2		4	22"x20'	22	62.09	163.8 327.6	7.00 24.00	
2700	2700	2160	6988	1677	1878	1	1	4	24"x20'	24	64.48	170.1 340.2	7.50 24.00	
2800	2800	2240	7246	1739	1948		2	4	24"x20'	24	66.87	176.4 352.8	8.00 26.00	
2900	2900	2320	7504	1801	2017		1	5	24"x20'	24	69.25	182.7 365.5	8.50 27.50	
3000	3000	2400	7763	1863	2087			6	24"x20'	24	71.64	189.1 378.2	9.00 29.00	

- Ratings are at sea level to 2,000 feet. For altitudes above 2,000 feet, reduce all ratings 4% for each 1,000 feet above sea level.
- Ratings based on selection factors recommended by Hydronics institute for piping and pickup. Net water boiler ratings are based on an allowance of 1.15, and net steam boiler ratings are based on an allowance of 1.33. For water applications with high piping and pickup requirements, use steam rating.
- Ratings in square feet are computed at 240 Btu/square foot for steam boilers.

- Ratings based on 33,500 Btu/h per horsepower.
- Pressure drop based on given flow from a single outlet and returning to a single inlet at the opposite end of the boiler.
- Chimney sizes shown are one option based on a typical venting system, and sized according to the National Fuel Gas Code, assuming Type B double wall vent and vent connectors, other venting system designs are acceptable as shown on Flue Connection And Venting section of the installation manual. For further chimney design and sizing information, consult the National Fuel Gas Code, ANSI Z223.1/NFPA 54-latest revision, or ASHRAE-1996 HVAC Systems and Equipment Handbook, Chapter 30, Chimney, Gas Vent, and Fireplace Systems, or the Standard for Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances. NFPA 211 -latest revision. Follow standard engineering practice.



An ISO 9001-2000 Certified Company   
 85 MIDDLE RD DUNKIRK, NY 14048  
 716/366-5500 FAX 866/432-7329  
 e-mail: heating@dunkirk.com  
 Web Site: www.dunkirk.com  
 USA Contractor Assistance: 800-325-5479



- The ratings marked Net I=B=R Ratings represent the heat available to the radiation or terminal units.
- Water boiler size should be based upon Net I=B=R Rating being equal to or greater than the calculated heat loss of the building.
- Selection of steam boiler size should be based upon Net I=B=R Steam Rating being equal to or greater than the installed radiation in square feet EDR.
- Consult manufacturer before selecting a boiler for installations having unusual piping and pick-up requirements.

- These gas-fired boilers are sectional cast iron boilers design certified by CSA in the U.S. for use with natural gas. They are constructed and hydrostatically tested for a maximum working pressure of 100 psi in accordance with A.S.M.E. (American Society of Mechanical Engineers) Boiler And Pressure Vessel Code Section IV standards for cast iron heating boilers. They are capacity rated in accordance with the code of The Hydronics Institute.

Specifications and dimensions are subject to change without notice.  
 Made in America by American Craftsmen.