

# **PROFIRE<sup>®</sup> NTH BURNERS**

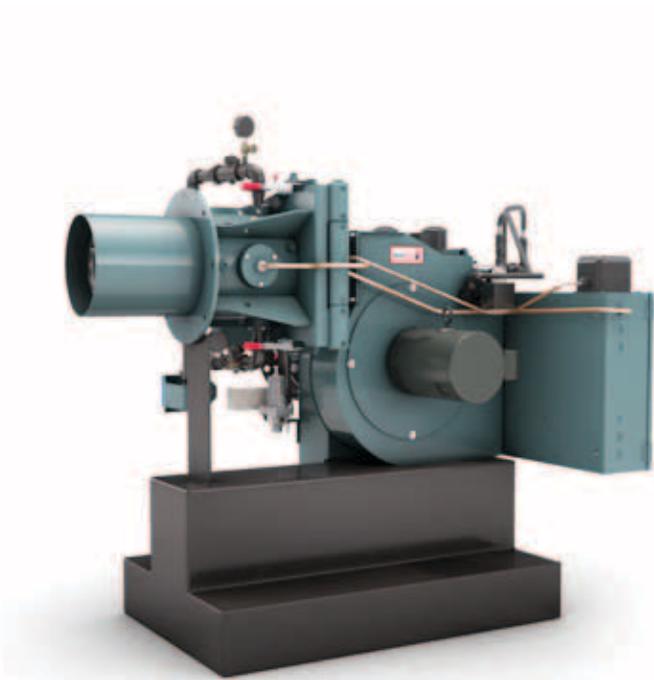
**1.5 TO 12.5 MMBTU/HR**

**Ultra Low NOx technology for the most stringent emissions requirements.**

# Ultra-Low-NOx Configuration

The ProFire NTD was designed and developed with a Flue Gas Recirculation (FGR) system which has proven to be the benchmark in the industry, the C-B ProFire NTH burner is capable of firing up to 300 HP firetube and watertube boilers. The ProFire NTH features an advanced design impeller with backwards-inclined vanes. Unlike ordinary forward-curved impellers, the backward incline design does not allow for dust to collect on the vanes, thus allowing the impeller to maintain its original balance while supplying combustion air. A special air intake box with a rotary air damper and FGR modulating valve, allows a precise amount of induced FGR and fuel-to-air ratio control throughout the firing range.

## ProFire NTH



**Available to** <9 ppm NOx.

**Induced FGR** modulating valve and shutoff valve.

**Parallel Positioning** available for optimal control throughout the firing range.

**Fuel Options** gas, #2 oil and combination fuel capabilities.

**Rotary Air Damper** precise fuel-to-air ratios.

**Hinged Air Housing** for easy access to internal components.

**Gas Injectors** are a low-NOx, lance-style, hammerhead design, with all gas injectors mounted to an internal gas manifold assembly.

**Backward-Curved Impeller** provides adequate combustion air for various furnace

**Panel Options** top- or rear- mount available.

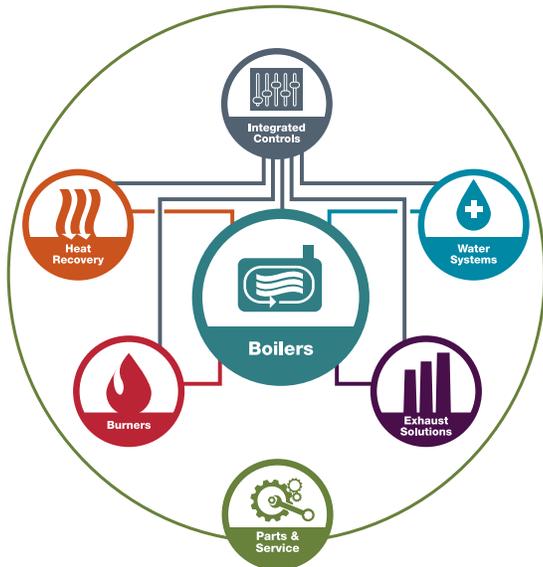
Frame	Model Range	Boiler HP	Capacities		Mode of Operation	Fuel	Parallel Positioning
			MBH	GPH			
Size 2-4	32-86	36-299	1,500-12,500	90-239	Full Modulation	Gas, Oil, Comb.	Standard

# CAPACITIES AND SPECIFICATIONS

Burner Sizes		15	20	25	30	35	40	42	45	50	52	55
Gas Input (MBtu/hr)		1,500	2,000	2,500	3,000	3,500	4,000	4,200	4,500	5,000	5,200	5,500
Oil Input (US gph)		-	-	-	-	-	-	-	32	36	37	39
Boiler HP @80% Eff.		36	48	60	72	84	96	100	108	120	125	131
Oil Pump Motor HP		-	-	-	-	-	-	-	3/4	3/4	3/4	3/4
Compressor Motor HP		-	-	-	-	-	-	-	3	3	3	3
Min. Gas Pressure Req. (PSI)		4	4	4	4	4	4	4	4	4	4	4
< 30 PPM	Frame Size	2	2	2	2	2	2	2	3	3	3	3
	Blower Motor HP	3/4	3/4	3/4	1	1 1/2	2	2	3	3	3	5
	Furn. Press. "W.C.	0.4	0.8	1.2	1.0	1.4	1.5	0.6	1.9	2.4	1.0	2.9
< 20 PPM	Frame Size	2	2	2	2	2	2	2	3	3	3	3
	Blower Motor HP	3/4	3/4	1	1	1 1/2	2	2	3	5	5	5
	Furn. Press. "W.C.	0.5	0.8	1.3	1.1	1.5	1.6	0.7	2.1	2.5	1.0	3.1
< 15 PPM	Frame Size	2	2	2	2	2	3	3	3	3	3	3
	Blower Motor HP	3/4	3/4	1	1 1/2	2	3	3	3	5	5	5
	Furn. Press. "W.C.	0.5	0.9	1.4	1.2	1.6	1.7	0.7	2.2	2.7	1.1	3.3
< 12 PPM	Frame Size	2	2	2	2	2	3	3	3	3	3	3
	Blower Motor HP	3/4	3/4	1	1 1/2	2	3	3	5	5	5	7 1/2
	Furn. Press. "W.C.	0.6	1.0	1.6	1.3	1.7	1.9	0.8	2.4	3.0	1.2	3.7
< 9 PPM	Frame Size	2	2	2	2	2	3	3	3	3	3	3
	Blower Motor HP	3/4	1	1 1/2	2	3	5	3	5	7 1/2	7 1/2	7 1/2
	Furn. Press. "W.C.	0.6	1.1	1.8	1.4	2.0	2.2	0.9	2.7	3.4	1.4	4.1

Burner Sizes		60	63	70	80	84	90	100	105	110	120	125
Gas Input (MBtu/hr)		6,000	6,300	7,000	8,000	8,400	9,000	10,000	10,500	11,000	12,000	12,500
Oil Input (US gph)		43	45	50	57	60	64	71	75	79	86	89
Boiler HP @80% Eff.		143	150	167	191	200	215	239	250	263	287	299
Oil Pump Motor HP		1	1	1	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2
Compressor Motor HP		3	3	3	3	3	3	3	3	3	3	3
Min. Gas Pressure Req. (PSI)		4	4	4	4	4	4	5	5	5	6	6
< 30 PPM	Frame Size	3	3	3	3	3	4	4	4	4	4	4
	Blower Motor HP	5	5	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	10	10	15	15
	Furn. Press. "W.C.	3.4	1.6	2.5	3.3	2.2	4.1	3.8	2.0	4.6	5.5	6.0
< 20 PPM	Frame Size	3	3	3	3	3	4	4	4	4	4	4
	Blower Motor HP	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	10	10	10	15	15
	Furn. Press. "W.C.	3.6	1.7	2.6	3.5	2.4	4.4	4.1	2.1	4.9	5.8	6.3
< 15 PPM	Frame Size	3	3	3	4	4	4	4	4	4	4	-
	Blower Motor HP	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	10	10	10	15	15	-
	Furn. Press. "W.C.	3.9	1.8	2.8	3.7	2.5	4.7	4.4	2.3	5.3	6.3	-
< 12 PPM	Frame Size	3	3	4	4	4	4	4	4	4	4	-
	Blower Motor HP	7 1/2	7 1/2	7 1/2	10	10	10	15	15	15	15	-
	Furn. Press. "W.C.	4.4	2.0	3.2	4.1	2.8	5.2	4.8	2.5	2.0	1.5	-
< 9 PPM	Frame Size	3	3	4	4	4	4	4	4	-	-	-
	Blower Motor HP	7 1/2	7 1/2	10	10	10	15	15	15	-	-	-
	Furn. Press. "W.C.	4.9	2.3	3.5	4.6	3.2	5.9	5.4	2.9	-	-	-

For firetube, firebox and commercial watertube boilers only. Turndown on tangent tube commercial watertube boilers may be restricted, consult factory. Consult factory for oil applications for burner models 15 through 42. Input is based on fuel Btu content, list furnace pressure and altitude of 2,000 feet or less. If altitude > 2,000 feet and < 8,000 feet, derate capacity 4% per 1,000 feet over 2,000. Consult factory for higher altitudes. If furnace pressure exceeds listed value, derate capacity 5% for every 1/2" w.c. of pressure in excess of stated. Consult factory if derate exceeds 20%. Gas input is based on natural gas with 1,000 Btu/cu.ft., 0.60 gravity, 0 furnace pressure and the aforementioned conditions. Gas pressure based on zero furnace pressure. For total pressure at manifold, add furnace pressure. Oil input based on 140,000 Btu/gal and the aforementioned conditions. Consult factory for 50Hz applications.



## Total integration doesn't stop with the burner.

Only Cleaver-Brooks offers complete boiler systems, from fuel inlet to stack outlet, that are completely designed, engineered, manufactured, integrated, and serviced by one company. That integration starts with the burner, and Cleaver-Brooks has been perfecting this integral element of the boiler system through innovation and expert engineering for more than 80 years.



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