

Addendum for arctic/free flex installation, operation, and service instructions

This document supplements and/or replaces information found in the Boiler Installation, Operation, and Service Instructions manuals 105641-01 revision 18 and 105641-03 revision 18.

105641-01 covers ARC 1000-6000 models.

105641-03 covers FF 1000-6000 models.


⚠ WARNING

Asphyxiation Hazard. Fire Hazard. Explosion Hazard.

This boiler must be installed, serviced or repaired by a skilled and experienced service technician. Improper installation, adjustment, alteration, service or maintenance can cause severe personal injury, death, or substantial property damage. Read and understand these instructions and entire boiler manual before attempting to service boiler. Up to date boiler manual is posted on manufacturer's website.

III. Product Ratings

Table 2: Performance Ratings

Commercial Gas Boiler							
Boiler Model	Input (MBH)		Gross Output (MBH)	Net Ratings Water1 (MBH)	Thermal Efficiency (%)	Combustion Efficiency (%)	Water Volume (gal)
	Min.	Max.					
1000	200	999	949	825	95	94	19.7
1500	300	1500	1425	1239	95	94	27.3
2000	400	1999	1899	1651	95	94	27.3
2500	500	2500	2375	2065	95	94	39.3
3000	600	3000	2820	2452	95	94	39.3
3500	875	3500	3290	2861	95	94	56.1
4000	1000	3999	3759	3269	95	94	56.1
4500	1125	4500	4230	3678	95	94	80.9
5000	1250	4999	4699	4086	95	94	80.9
5500	1375	5500	5170	4496	95	94	80.9
6000	1500	6000	5640	4904	95	94	80.9

¹ Ratings shown are for installations at sea level and elevations up to 2000 ft. at minimum vent length. For high altitude installations above 2000 ft. consult factory.

III. Requirements

D. Pump and Piping Requirements

Table 20: Water Flow Requirements for Variable Primary Piping

Model	Maximum MBH		Minimum Flow Rate			Maximum Flow Rate		
	Input	Output	gpm	Δ P (ft)	High Fire Δ T (°F)	gpm	Δ P (ft)	High Fire Δ T (°F)
1000	999	949	22	0.71	85	95	12.7	20
1500	1500	1425	34	0.52	85	143	9.2	20
2000	1999	1899	45	0.91	85	190	16.3	20
2500	2500	2375	56	1.12	85	238	20	20
3000	3000	2820	67	1.61	85	285	28.7	20
3500	3500	3290	102	1.05	65	333	11.33	20
4000	3999	3759	117	1.3	65	380	15.17	20
4500	4500	4230	132	0.8	65	428	25.17	20
5000	4999	4699	146	1.46	65	475	33.5	20
5500	5500	5170	161	2.09	65	523	37.25	20
6000	6000	5640	175	3.34	65	570	37.92	20

Note: Not for sizing constant volume pump.

1000-3000 models will force modulation at delta of 89°F, recycle at 95°F, and lock out at 100°F.

3500-6000 models will force modulation at delta of 69°F, recycle at 75°F, and lock out at 80°F.

Appendix F: Water Flow Pressure Drops

3000			3500			4000			4500		
Delta T	GPM	Ft. Hd.	Delta T	GPM	Ft. Hd.	Delta T	GPM	Ft. Hd.	Delta T	GPM	Ft. Hd.
90F	63	1.42	N/A			N/A			N/A		
80F	71	1.79	N/A			N/A			N/A		
70F	81	2.34	70F	95	0.92	70F	109	1.17	70F	122	0.67
60F	95	3.19	60F	111	1.17	60F	127	1.42	60F	143	0.92
50F	114	4.59	50F	133	1.50	50F	152	2.42	50F	171	2.92
45F	127	5.67	45F	148	2.08	45F	169	2.58	45F	190	4.17
40F	143	7.18	40F	166	2.60	40F	190	3.17	40F	214	6.25
35F	163	9.27	35F	190	3.33	35F	217	4.42	35F	244	8.17
30F	190	12.76	30F	222	4.58	30F	253	6.08	30F	285	11.17
25F	228	18.37	25F	266	7.33	25F	304	9.67	25F	342	16.08
20F	285	28.70	20F	333	11.33	20F	380	15.17	20F	428	25.17
5000			5500			6000					
Delta T	GPM	Ft. Hd.	Delta T	GPM	Ft. Hd.	Delta T	GPM	Ft. Hd.			
70F	136	0.83	70F	149	1.25	70F	163	2.50			
60F	158	2.08	60F	174	2.92	60F	190	4.17			
50F	190	4.17	50F	209	5.83	50F	228	6.00			
45F	211	6.25	45F	232	7.25	45F	253	7.42			
40F	238	7.92	40F	261	9.25	40F	285	9.42			
35F	271	10.42	35F	299	12.08	35F	326	12.33			
30F	317	14.25	30F	348	16.50	30F	380	16.83			
25F	380	21.42	25F	418	23.83	25F	456	24.25			
20F	475	33.50	20F	523	37.25	20F	570	37.92			