

Checking Firing Rate (Clocking Meter)

Checking the firing rate of a furnace is a very important element of the installation procedure. Over-firing can cause premature heat exchanger failure. This is done by measuring the time it takes to consume 1 cubic foot of gas.

When performing this procedure it is important to activate the furnace for about 10-15 minutes, and all the other gas appliances are turned off. Adjust inlet gas pressure to between 5 and 7 inches water column then time the meter for 2 revolutions and then divide by 2 to get the time for one revolution. Need to check meter size (1 CuFt or 10 CuFt).

The following table shows approximate gas consumption (measured in cubic feet per hour), and the gas input (measured in Btu/Hr), based on Natural gas whose caloric value ranges from 900 to 1050 Btu/cu. ft. We are assuming 1000 Btu/cu. ft. This chart assumes a 1 CuFt meter size.

<i>Seconds per Cubic ft</i>	<i>Consumption Cubic ft per Hour</i>	<i>Gas Input btu/hr at 1,000 btu/cu ft</i>
20	180	180,000
22	164	164,000
24	150	150,000
26	138	138,000
28	129	129,000
30	120	120,000
32	113	113,000
34	106	106,000
36	100	100,000
38	95	95,000
40	90	90,000
42	86	86,000
44	82	82,000
46	78	78,000
48	75	75,000
50	72	72,000
52	69	69,000
54	67	67,000
56	64	64,000
58	62	62,000
60	60	60,000
62	58	58,000
64	56	56,000
66	54	54,000
68	53	53,000
70	51	51,000
72	50	50,000
74	48	48,000
76	47	47,000
78	46	46,000
80	45	45,000
82	44	44,000
84	43	43,000
86	42	42,000
88	41	41,000
90	40	40,000

$$\text{Gas Input (Btu/Hr)} = \frac{\text{Caloric Value of Gas} \times 3600}{\text{Meter Time (seconds)}}$$