

8/16/2016		Gas Performance Data																					
PT2-50-G-2015		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
% Burner output		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	
1	Heat input	MMBtu/hr	5.00	7.25	9.50	11.75	14.00	16.25	18.50	20.75	23.00	25.25	27.50	29.75	32.00	34.25	36.50	38.75	41.00	43.25	45.50	47.75	50.00
3	Gas Flow	SCFH	5,000	7,250	9,500	11,750	14,000	16,250	18,500	20,750	23,000	25,250	27,500	29,750	32,000	34,250	36,500	38,750	41,000	43,250	45,500	47,750	50,000
4		M ³	142	205	269	333	396	460	524	588	651	715	779	842	906	970	1,034	1,097	1,161	1,225	1,288	1,352	1,416
5	Gas Pressure at Train Inlet	PSI	5.24	4.81	4.37	4.38	4.38	4.31	4.24	4.37	4.50	4.22	3.94	4.09	4.23	3.98	3.73	3.66	3.58	3.56	3.53	3.74	3.95
6		kPa	36.13	33.13	30.13	30.17	30.21	29.72	29.23	30.13	31.03	29.10	27.17	28.17	29.16	27.44	25.72	25.20	24.68	24.51	24.34	25.79	27.23
7	Gas Manifold Pressure	"w.c"	1.1	1.8	1.9	3.0	3.4	4.3	5.6	6.3	7.8	9.7	10.9	13.4	15.2	17.2	17.8	21.1	23.9	26.4	28.1	31.1	34.3
8		Pa	264.03	448.35	473.26	747.25	846.88	1071.05	1394.86	1569.22	1942.84	2416.10	2714.99	3337.70	3786.05	4284.21	4433.66	5255.63	5953.06	6575.76	6999.20	7746.45	8543.51
9	Gas Valve Position	%	14.00	17.6	21.1	23.95	26.8	31.3	35.8	37.9	40	41.25	42.5	45.35	48.2	50.6	53	58.95	64.9	66.4	67.9	83.95	100
11	Blower Speed	Hz	12.4	14.5	17.4	18.2	20.6	22.2	23.9	25.5	27.5	29.5	32.4	34.4	37.3	38	40.5	42.9	46.1	47.8	50.6	53	55.1
12	Blower Body Pressure	"w.c"	0.58	0.79	1.09	1.18	1.52	1.76	2.03	2.31	2.66	3.05	3.68	4.13	4.94	5.08	5.82	6.52	7.57	8.10	9.13	10.03	10.85
13		Pa	144	208	271	325	379	442	506	584	663	790	917	1074	1230	1340	1450	1668	1886	2080	2274	2488	2703
14	Combustion Air Motor Power	HP	0.72	0.94	1.3	1.4	2	2.4	2.8	3.3	4.1	4.9	6.4	7.5	9.5	10.1	14.3	17.7	19.6	22.9	26.4	29.6	33.1
15		KW	0.54	0.75	0.97	1.23	1.49	1.79	2.09	2.57	3.06	3.91	4.77	5.93	7.08	8.02	11.07	13.20	15.14	17.08	19.57	22.07	25.0
16	Combustion Air Motor Current	Amp.	18.2	18.3	18.6	18.7	18.9	19.1	19.5	19.7	20.1	20.7	21.5	22.1	23.6	24	25.3	26.8	29.1	30.4	32.9	35.2	37.3
17	Gas Orifice Differential Pressure	"w.c"	0.27	0.56	0.85	1.16	1.47	1.98	2.48	2.84	3.20	3.73	4.25	5.00	5.74	6.50	7.25	8.45	9.64	10.36	11.08	12.10	13.11
19	Main Air Flow	SCFH	149,000	167,298	185,596	203,894	222,192	240,490	258,788	277,086	295,384	313,682	331,980	359,142	386,304	413,466	440,628	467,790	494,952	522,114	549,276	576,438	603,600
20		M ³	4,219	4,737	5,255	5,774	6,292	6,810	7,328	7,846	8,364	8,882	9,401	10,170	10,939	11,708	12,477	13,246	14,015	14,785	15,554	16,323	17,092
21	Excess air	%	196%	129%	94%	72%	58%	47%	39%	28%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
22	Flame Length	Feet	2.0	2.0	2.0	2.9	3.8	4.0	4.1	4.2	4.3	4.1	3.9	4.1	4.2	4.3	4.4	4.4	4.4	4.3	4.1	4.3	4.4
23	Flame Diameter	Feet	1.4	1.5	1.6	2.0	2.3	2.3	2.3	2.3	2.3	2.6	2.8	2.7	2.5	2.6	2.6	2.6	2.6	2.7	2.7	2.6	2.4

15-346 16.625" Throat Diameter, Sun Nozzle

Combustion Air VFD Setup			Limit Switch Setup		
Min Ref	Hz	12.4	Blower Proof of Running	-20	in H ₂ O
Max Ref	Hz		Blower Proof of High Fire	6.9	in H ₂ O
Ramp Up Time	Sec	40	Blower Proof of Low Fire	0.5	in H ₂ O
Ramp Down Time	Sec	40	Low Gas Pressure	1.5	psi
Nominal Motor Speed	rpm	1780	High Gas Pressure	10	psi
Motor Current	A	115	Pilot Low Gas Pressure	n/a	PSI
Motor Frequency	Hz	60			
Motor Voltage	V	480			
Motor Power	kW	75			

Use Chart 1 below to match the natural gas flow to the blower body pressure. Chart 1 shows the relationship between the gas manifold pressure and the appropriate blower body pressure. Chart 2 shows the relationship between the differential pressure as measured across the gas orifice plate with gas flow. Increase or decrease the fan speed or the gas control valve setting in the burner profile as needed to match the values. Please note that in premix burners gas and air compete for space inside the burner. That means that a change in the pressure or flow of either gas or air will effect the other. You will usually have to adjust both fuel and air to get the the desired pressures.

