

4/23/2015		Gas Performance Data																					
PT2-100-G-2015		1	2	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
% 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	9.75	14.50	19.25	24.00	28.75	33.50	38.25	43.00	47.75	52.50	57.25	62.00	66.75	71.50	76.25	81.00	85.75	90.50	95.25	100.00
2		KW	1,465	2,857	4,250	5,642	7,034	8,426	9,818	11,210	12,602	13,994	15,386	16,778	18,170	19,562	20,955	22,347	23,739	25,131	26,523	27,915	29,307
3	Gas Flow	SCFH	5,000	9,750	14,500	19,250	24,000	28,750	33,500	38,250	43,000	47,750	52,500	57,250	62,000	66,750	71,500	76,250	81,000	85,750	90,500	95,250	100,000
4		M ³	142	276	411	545	680	814	949	1,083	1,218	1,352	1,487	1,621	1,756	1,890	2,025	2,159	2,294	2,428	2,563	2,697	2,832
5	Gas Pressure at Train Inlet	PSI	4.54	4.32	4.33	4.21	4.10	4.16	4.01	4.09	3.98	4.01	3.92	4.00	3.87	3.92	4.02	3.92	3.90	3.74	3.67	3.84	3.63
6		kPa	31.3	29.8	29.9	29.0	28.3	28.7	27.6	28.2	27.4	27.6	27.0	27.6	26.7	27.0	27.7	27.0	26.9	25.8	25.3	26.5	25.0
7	Gas Manifold Pressure	"w.c"	0.2	0.7	1.2	2.3	3.4	4.2	6.2	8.1	10.7	11.5	13.8	14.4	18.6	20.7	23.8	25.8	28.6	32.1	35.1	39.1	44.8
8		Pa	50	174	299	573	847	1046	1544	2018	2665	2864	3437	3587	4633	5156	5928	6426	7124	7996	8743	9739	11159
9	Gas Valve Position		11.2	14.6	17.5	21.5	24.3	26.2	31.9	35.8	39.1	39.8	42.6	43.6	47.2	48.7	50.8	52.7	55.1	58.8	62.4	66.0	100.0
10	Blower Output	%	0.0	5.0	10.0	14.9	19.9	26.9	30.9	34.9	37.0	42.0	46.0	47.0	52.0	57.0	64.0	69.0	73.0	83.0	89.0	95.0	100.0
11	Blower Speed	Hz	8.3	10	11.8	13.5	15.2	17.6	19	20.4	21.1	22.9	24.3	24.6	26.3	28.1	30.5	32.2	33.6	37.1	39.2	41.3	43
12	Blower Body Pressure	"w.c"	0.33	0.48	0.60	0.80	1.00	1.40	1.60	1.90	2.20	2.50	2.80	2.90	3.40	3.70	4.40	5.00	5.40	6.50	7.30	8.10	8.90
13		Pa	82	120	149	199	249	349	399	473	548	623	697	722	847	922	1096	1245	1345	1619	1818	2018	2217
14	Combustion Air Motor Power	HP	0.52	0.86	1.18	1.59	2.18	3.21	3.92	4.7	5.24	6.55	7.74	8.09	9.89	11.9	15.2	17.9	20.5	26.1	30.7	35.8	40.7
15		KW	0.4	0.6	0.9	1.2	1.6	2.4	2.9	3.5	3.9	4.9	5.8	6.0	7.4	8.9	11.3	13.3	15.3	19.5	22.9	26.7	30.3
16	Combustion Air Motor Current	Amp.	20.4	20.5	20.9	21.8	23.0	25.2	26.8	28.9	29.9	32.7	34.7	35.3	38.6	41.7	47.4	51.4	54.3	60.2	64.6	69.6	73.9
17	Gas Orifice Differential Pressure	"w.c"	0.11	0.19	0.27	0.46	0.65	0.77	1.13	1.36	1.86	2.00	2.44	2.53	3.41	3.80	4.37	4.91	5.51	6.00	6.80	7.51	8.56
18		Pa	27.40	47.33	67.25	114.58	161.90	191.79	281.46	338.75	463.29	498.16	607.76	630.18	849.37	946.51	1088.49	1222.99	1372.44	1494.49	1693.76	1870.61	2132.14
19	Main Air Flow	SCFH	244,034	302,425	316,297	390,303	474,171	539,715	571,454	591,875	635,082	664,282	699,175	707,485	752,700	803,200	867,422	925,090	977,114	1,033,223	1,091,420	1,149,241	1,209,416
20		M ³	6,910	8,564	8,957	11,052	13,427	15,283	16,182	16,760	17,984	18,810	19,798	20,034	21,314	22,744	24,563	26,196	27,669	29,258	30,906	32,543	34,247
21	Excess air	%	385%	208%	117%	102%	96%	87%	70%	54%	47%	38%	32%	23%	21%	20%	21%	21%	20%	20%	20%	20%	20%
22	Flame Length	Feet	3	3.5	4	4.5	4.5	5	5	5	5.5	6	6.5	6.5	6.5	7	7	7	7	7	7	7	7
23	Flame Diameter	Feet	2.5	3	4	4	4	4.5	4.5	5	5.5	6	6	6	6	5	5	5	5	5	5	5	5

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Combustion Air VFD Setup			Limit Switch Setup		
Min Ref	Hz	8.3	Blower Proof of Running	-20	in H ₂ O
Max Ref	Hz	43.0	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	HP	75			

Use Chart 1 below to match the natural gas flow to the blower body pressure. Chart 1 shows the relationship between the gas orifice differential 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.

