

PT-50-G		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	Btu/hr	8,000,000	10,350,000	12,700,000	15,050,000	17,400,000	19,750,000	22,100,000	24,450,000	26,800,000	29,150,000	31,500,000	33,850,000	36,200,000	38,550,000	40,900,000	43,250,000	45,600,000	47,950,000	50,300,000	52,650,000	55,000,000
2 Gas Flow	SCFH	8,000	10,350	12,700	15,050	17,400	19,750	22,100	24,450	26,800	29,150	31,500	33,850	36,200	38,550	40,900	43,250	45,600	47,950	50,300	52,650	55,000
3 Gas Pressure at Train Inlet	PSI	4.28	4.27	4.22	4.26	4.21	4.28	4.25	4.21	4.21	4.20	4.23	4.20	4.21	4.26	4.23	4.21	4.22	4.20	4.23	4.20	4.24
4 Gas Manifold Pressure	" w.c	3.60	3.80	4.30	5.70	8.00	10.30	12.60	14.20	16.60	19.30	23.20	25.80	29.00	33.10	37.50	41.00	45.40	50.30	55.30	59.80	66.30
5 Gas Manifold Pressure - Body Pressure	" w.c	3.20	3.22	3.50	4.62	6.60	8.55	10.47	11.65	13.55	15.70	19.00	21.00	23.50	27.00	30.50	33.10	36.80	40.50	44.60	48.20	53.50
6 Dp at gas orifice	" w.c	0.07	0.10	0.16	0.22	0.29	0.36	0.48	0.56	0.68	0.76	0.95	1.07	1.22	1.41	1.58	1.73	1.95	2.15	2.36	2.57	2.88
7 Main Air Flow	SCFH	120,000	147,271	174,541	201,812	229,082	230,000	283,623	310,894	338,164	365,435	392,706	419,976	447,247	474,517	501,788	529,058	556,329	583,599	610,870	638,140	665,411
8 Blower Body Pressure	" w.c	0.40	0.58	0.80	1.08	1.40	1.75	2.13	2.55	3.05	3.60	4.20	4.80	5.50	6.10	7.00	7.90	8.60	9.80	10.70	11.60	12.80
9 Combustion Air Motor Power	HP	0.5	0.5	0.8	1.0	1.4	2.0	2.3	3.4	4.5	5.7	7.1	9.0	10.8	13.0	15.5	18.6	21.5	25.2	29.5	34.0	40.0
10 Combustion Air Motor Current	Amp.	17.0	16.0	15.5	16.6	15.4	15.6	16.0	17.0	18.1	19.3	20.7	22.5	24.3	26.2	28.5	30.5	32.5	35.1	37.8	40.4	43.0
11 Flame Length	Feet	2.5	2.5	3	3	3	3	3	3	3	3	3.5	3.5	3.5	3.5	3.75	3.75	3.75	4	4	4	4
12 Flame Diameter	Feet	4.0	4.0	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.8	5.8	5.8	6.0	6.0	6.0	6.0
13 Excess air	%	49%	41%	37%	33%	31%	16%	28%	26%	25%	25%	24%	23%	23%	22%	22%	22%	21%	21%	21%	20%	20%

Min Ref	Hz	9
Max Ref	Hz	60
Ramp Up Time	Sec	40
Ramp Down Time	Sec	40
Nominal Motor Speed	RPM	1764
Motor Current	A	59.2
Motor Frequency	Hz	60
Motor Voltage	V	480
Motor Power	Hp	40
	kW	30

Use either chart 1 or chart 2 below to match the natural gas flow to the blower body pressure. Chart 1 shows the relationship between the differential pressure as measured across the gas orifice plate with the appropriate blower body pressure. Chart 2 shows the relationship between the differential pressure as measured between the difference of the gas manifold on the burner body and the burner body pressure and the appropriate blower body pressure. 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. Chart 3 shows natural gas flow against the difference of the gas manifold pressure and the burner body pressure. The unique geometry of the Phoenix Talon allows the gas to be measured this way, eliminating the need for a traditional orifice plate.

