

10/15/2010		Gas Performance Data																						
PT-75-G (2010)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
1 % Burner output		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%		
2 Heat input	Btu/hr	4,200,000	11,500,000	15,236,842	18,973,684	22,710,526	26,447,368	30,184,211	33,921,053	37,657,895	41,394,737	45,131,579	48,868,421	52,605,263	56,342,105	60,078,947	63,815,789	67,552,632	71,289,474	75,026,316	78,763,158	82,500,000		
3 Gas Flow	SCFH	4,200	11,500	15,237	18,974	22,711	26,447	30,184	33,921	37,658	41,395	45,132	48,868	52,605	56,342	60,079	63,816	67,553	71,289	75,026	78,763	82,500		
4 Gas Mod. valve position	%	7.00	14.50	17.00	20.00	23.50	26.00	29.50	32.50	35.50	38.00	41.00	43.00	45.50	48.00	50.50	53.00	57.00	60.00	65.00	73.00	100.00		
5 Gas Pressure at Train Inlet	PSI	5.30	5.30	5.30	5.30	5.27	5.27	5.26	5.25	5.24	5.24	5.20	5.18	5.17	5.17	5.17	5.18	5.17	5.17	5.17	5.16	5.15		
6 Gas Manifold Pressure	"w.c."	0.10	1.10	2.00	3.10	4.60	5.80	7.40	9.20	11.50	13.70	16.80	19.10	22.40	25.70	28.90	32.30	37.00	40.70	45.40	50.00	55.00		
7 Blower Output	%	5.00	9.00	12.50	18.00	23.00	27.00	32.00	36.00	41.00	46.00	51.50	56.00	61.00	66.50	71.00	76.00	81.20	85.00	90.00	95.00	100.00		
8 Blower Body Pressure	"w.c."	0.38	0.52	0.66	0.93	1.20	1.43	1.80	2.05	2.46	2.93	3.40	3.85	4.50	5.00	5.50	6.20	6.90	7.30	8.10	8.80	9.65		
9 Blower Speed	Hz	10.20	11.80	13.10	15.20	17.10	18.70	20.60	22.20	24.20	26.10	28.20	30.00	31.90	34.00	35.80	37.70	39.70	41.20	43.10	45.10	47.00		
10 Combustion Air Motor Power	HP	0.70	1.00	1.10	1.53	2.30	2.70	3.70	4.30	5.80	7.20	8.60	10.50	13.10	15.80	18.20	21.50	24.50	27.60	32.00	34.60	42.00		
11 Combustion Air Motor Current	Amp.	16.00	16.30	16.50	17.00	18.00	20.00	21.20	22.60	24.40	27.40	30.50	32.50	37.00	39.00	43.00	45.80	50.20	53.70	56.00	60.00	65.00		
12 Gas Manifold Pressure - Body Pressure	"w.c."	-0.28	0.58	1.34	2.17	3.40	4.37	5.60	7.15	9.04	10.77	13.40	15.25	17.90	20.70	23.40	26.10	30.10	33.40	37.30	41.20	45.35		
13 Main Air Flow	SCFH	200,000	200,000	242,105	284,211	326,316	368,421	410,526	452,632	494,737	536,842	578,947	621,053	663,158	705,263	747,368	789,474	831,579	873,684	915,789	957,895	1,000,000		
14 Excess air	%	373%	73%	58%	49%	43%	38%	35%	33%	31%	29%	28%	26%	25%	24%	24%	23%	22%	22%	21%	21%	20%		
15 Flame Length	Feet	2	2	2	4	4.5	4.5	4.5	5	5	5	5	5	5	6.5	6.5	6.5	7	7	7	7	7		
16 Flame Diameter	Feet	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		

Combustion Air VFD Setup		Limit Switch Setup			
Min Ref	Hz	8.3	Blower Proof of Running	-20	in H ₂ O
Max Ref	Hz	47.00	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	70.2	Pilot Low Gas Pressure	n/a	PSI
Motor Frequency	Hz	60			
Motor Voltage	V	460			
Motor Power	kW	37.3			

Use Chart 1 below to match the natural gas flow to the blower body pressure. Chart 1 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 desired pressures. Chart 2 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.

