

6/14/2011		Oil Performance Data																						
PT2-100-O-2011		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	8.5	13.1	17.7	22.2	26.8	31.4	36.0	40.5	45.1	49.7	54.3	58.8	63.4	68.0	72.6	77.1	81.7	86.3	90.9	95.4	100.02	1
2	Oil Flow	GPM	1.0	1.5	2.1	2.6	3.1	3.7	4.2	4.8	5.3	5.8	6.4	6.9	7.4	8.0	8.5	9.1	9.6	10.1	10.7	11.2	11.7	2
3		LPM	3.8	5.8	7.9	9.9	11.9	13.9	16.0	18.0	20.0	22.1	24.1	26.1	28.2	30.2	32.2	34.3	36.3	38.3	40.4	42.4	44.4	3
4	Oil Control Valve Percentage		0.1	4.7	26.6	30.1	34.3	36.6	41.5	44.1	44.4	46.7	49.7	53.1	52.8	54.7	58.8	59.5	64.2	66.6	72.4	82.3	100.0	4
5	Oil Control Valve Position		0.00	0.30	3.00	3.50	3.90	4.00	4.50	4.80	5.00	5.30	5.70	5.80	5.90	6.00	6.10	6.30	7.00	7.50	8.00	9.00	11.70	5
6	Oil Pressure at Train Inlet	PSI	102	102	100	100	100	100	98.5	98	98	96.5	96	96	96	94	94	92.5	92	92	90	90	90	6
7		kPa	703	703	689	689	689	689	679	676	676	665	662	662	662	648	648	638	634	634	621	621	621	7
8	Oil Pressure at Nozzle	PSI	12.5	14	16	18	20	22	24	28	30	32	34	34.5	36	38	40	42	44	46	48	48	50	8
9		kPa	86	97	110	124	138	152	165	193	207	221	234	238	248	262	276	290	303	317	331	331	345	9
10	Compressed air Pressure	PSI	72	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	10
11		kPa	496	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	11
12	Blower Output	%	0.0	0.0	1.0	4.5	8.0	14.5	19.5	26.5	32.5	38.5	44.0	49.5	55.0	61.0	66.0	72.0	78.0	83.5	88.5	95.0	100.0	12
13	Blower Speed	Hz	8.3	8.3	8.6	9.8	11.1	13.3	15.0	17.4	19.4	21.5	23.3	25.2	27.1	29.2	30.9	32.9	35.0	36.9	38.6	40.8	42.5	13
14	Blower Power	HP	0.5	0.5	0.6	0.8	0.9	1.4	2.0	2.9	3.9	5.1	6.5	8.2	10.1	12.5	14.7	17.8	21.3	25.0	28.8	33.8	38.1	14
15		KW	0.4	0.4	0.4	0.6	0.7	1.0	1.5	2.2	2.9	3.8	4.8	6.1	7.5	9.3	11.0	13.3	15.9	18.6	21.5	25.2	28.4	15
16	Blower Current	A	19.5	19.8	19.8	19.2	18.9	19.4	20.1	21.6	23.4	26.1	29	32.2	35.7	39.8	42.8	47.6	51.8	56.0	60.2	65.5	68.7	16
17	Blower Body Pressure	i.w.c.	0.31	0.31	0.33	0.42	0.54	0.77	1.00	1.30	1.60	2.00	2.30	2.80	3.20	3.70	4.10	4.70	5.30	5.90	6.40	7.20	7.80	17
18		Pa	77.22	77.22	82.20	104.61	134.50	191.79	249.08	323.81	398.53	498.16	572.89	697.43	797.06	921.60	1021.24	1170.69	1320.13	1469.58	1594.12	1793.39	1942.84	18
19	Main Air Flow	SCFH	265,000	265,000	285,000	305,000	332,466	390,000	435,000	490,000	545,000	600,000	645,000	700,000	755,000	810,000	865,000	920,000	975,000	1,030,000	1,085,000	1,140,000	1,195,000	19
20		M^3	7,504	7,504	8,070	8,637	9,414	11,044	12,318	13,875	15,433	16,990	18,264	19,822	21,379	22,937	24,494	26,052	27,609	29,166	30,724	32,281	33,839	20
21	Flame Diameter	Feet	1.3	1.3	1.3	1.3	1.5	1.5	1.8	2	2	2	2.3	2.5	2.8	2.9	2.9	2.9	3.5	3.5	3.5	4	4.5	21
22	Flame Length	Feet	1.5	1.5	1.8	2.0	2.0	2.2	2.2	2.4	2.5	2.8	3.0	3.3	3.5	3.5	4.0	4.5	5.0	6.0	6.0	8.0	8.0	22
23	Excess air (Calculated)	%	226%	112%	69%	44%	30%	30%	27%	27%	27%	27%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	23

Combustion Air VFD Setup			Limit Switch Setup			Required Oil Properties				Burner Fuel / Air Profile Setup			
Min Ref	Hz	8.3	Blower Proof of Running	-0.2	in H ₂ O	Viscosity	90 SSU @220 F	SSU	Max	Match oil flow rate (GPM) with blower body pressure. The chart below shows this graphically. To use it, find the fuel flow on the horizontal axis, then move vertically to the curve and then horizontally to the left to find the required blower body pressure. Increase or decrease the fan speed or the fuel flow as needed to match the values. The low fire position for oil should be 0 and the high fire position should be 100. Every other oil position will have to be determined by reading the fuel flow meter. All "light off" positions must be 0. Fine tuning must be done using a flue gas analyzer.			
Max Ref	Hz	42.5	Blower Proof of High Fire	6.25	in H ₂ O	Particulate	0.04	in	Max				
Ramp Up Time	Sec	40	Blower Proof of Low Fire	0.55	in H ₂ O	Sulfur Content	0.5	% (Mass)	Max				
Ramp Down Time	Sec	40	Low Oil Pressure	30	PSI	H2SO4	0	PPM	Max				
Nominal Motor Speed	rpm	1780	High Oil Pressure	150	PSI	H2O	5	% (Mass)	Max				
Motor Current	A	115	Pilot Low Fuel Pressure	N/A	PSI	Assumed							
Motor Frequency	Hz	60	Oil Valve Hauck GL-1-29			BTU CONTENT 142000 BTU/gal							
Motor Voltage	V	480				All data collected as the burner firing rate was decreasing.							
Motor Power	kW	75											

