

8/16/2016		Oil Performance Data																					
PT2-50-O-2016		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	5.1	7.4	9.6	11.9	14.1	16.4	18.7	20.9	23.2	25.4	27.7	29.9	32.2	34.5	36.7	39.0	41.2	43.5	45.8	48.0	0.0
2	Oil Flow	GPM	0.6	0.9	1.1	1.4	1.7	1.9	2.2	2.5	2.7	3.0	3.3	3.5	3.8	4.0	4.3	4.6	4.8	5.1	5.4	5.6	5.9
3		LPM	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	10.3	11.3	12.3	13.3	14.3	15.3	16.3	17.3	18.3	19.3	20.3	21.3	22.3
5	Oil Control Valve Position		2.00	2.10	3.00	4.30	4.40	4.50	4.75	5.00	5.50	5.75	5.80	5.90	6.00	6.25	6.40	6.70	6.75	7.75	8.00	8.50	11.00
6	Oil Pressure at Train Inlet	PSI	98	98	96.5	96	96	96	96	94.5	94	94	94	94	94	92.5	92	92	92	90	90	90	90
7		kPa	676	676	665	662	662	662	662	652	648	648	648	648	648	638	634	634	634	621	621	621	621
8	Oil Pressure at Nozzle	PSI	32.5	34	34.5	40	42	42	42.5	46	48.5	52	54	54.5	56	56.5	60	60	62	64	64.5	66	68
9		kPa	224	234	238	276	290	290	293	317	334	359	372	376	386	390	414	414	427	441	445	455	469
10	Compressed air Pressure	PSI	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
11		kPa	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483
12	Compressed air flow	SCFM	74.4	75.5	70.6	77.2	67.8	70.4	67.3	74.2	72.1	66.2	61.1	62.2	60.1	55.6	59.0	63.7	54.7	53.4	51.9	50.2	42.1
13	Blower Speed	Hz	11.0	14.4	15.3	17.4	20.1	22.7	24.0	26.2	27.9	29.2	31.4	32.7	34.0	37.1	40.6	41.5	43.6	45.8	48.0	20.2	51.5
14	Blower Power	HP	0.6	1.0	1.1	1.4	2.0	2.6	4.0	3.7	4.4	5.0	6.0	6.7	7.5	9.6	12.5	13.3	15.2	17.6	20.3	22.7	24.6
15		KW	0.5	0.7	0.8	1.0	1.5	1.9	3.0	2.8	3.3	3.8	4.5	5.0	5.6	7.2	9.3	9.9	11.3	13.1	15.1	16.9	18.3
16	Blower Current	A	18.3	18.4	18.5	18.7	19	19.3	19.6	19.9	20.4	20.8	21.5	21.9	22.5	23.8	25.7	26.4	27.5	29.2	31	32.9	34.2
17	Blower Body Pressure	i.w.c.	0.37	0.67	0.76	1.00	1.35	1.71	1.93	2.26	2.62	2.83	3.32	3.59	3.90	4.59	5.58	5.82	6.43	7.15	7.87	8.59	9.10
18		Pa	92.16	166.88	189.30	249.08	336.26	425.93	480.73	562.93	652.59	704.90	826.95	894.20	971.42	1143.29	1389.88	1449.66	1601.60	1780.94	1960.28	2139.61	2266.65
19	Main Air Flow	SCFH	149,889	172,352	194,815	217,277	239,740	262,203	284,666	307,129	329,591	352,054	374,517	396,980	419,443	441,905	464,368	486,831	509,294	531,757	554,219	576,682	599,145
20		M^3	4,244	4,880	5,517	6,153	6,789	7,425	8,061	8,697	9,333	9,969	10,605	11,241	11,877	12,513	13,149	13,786	14,422	15,058	15,694	16,330	16,966
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
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
23	Excess air (Calculated)	%	208%	145%	112%	92%	78%	68%	60%	54%	49%	45%	42%	39%	37%	34%	33%	31%	30%	28%	27%	26%	25%

15-346 16.625" Throat Diameter, Sun Nozzle

Combustion Air VFD Setup			Limit Switch Setup			Required Oil Properties			Burner Fuel / Air Profile Setup			
Min Ref	Hz	11	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	51.5	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 FL-1/2-20		BTU CONTENT		142000	BTU/gal				
Motor Voltage	V	480			All data collected as the burner firing rate was decreasing.							
Motor Power	kW	75										

