COOPER | MACHINERY SERVICES

PowerFlow - Compressor Performance Report

Ver. 1.14.0.0

Customer/End-user:		Quote #::	19xx
Site Location:	Alberta	Case #:	N/A
Engineer:	N. Broda	Date:	2019-10-09, 1:50 PM

Application Data		High Speed A354		Driver Data		Site Data	
Unit Flow	0.83 MMscfd	Rated Power	800.0 HP	Manufacturer	Motors	Elevation	2500.0 ft
Load per Flow	301.79 HP/MMscfd	Stroke	3.500 in	Model	El. Motor6	Atm. Pressure	13.41 psiA
Lubrication	Lubed	Rated Speed	1800 RPM	Rated Power	250.0 HP	Ambient Temp	95.0 ° F
		Rod Diameter	1.375 in	Rated Speed	1200 RPM	Gas Method	VMG
Unit Load	249.8 HP	Max Rod Load Comp	14500.0 lbf	Avail. Power	250.0 HP	Base Pressure	14.696 psiA
Avg. Piston Vel.	700.00 ft/min	Max Rod Load Tens	12500.0 lbf	Derate	0.00 %	Base Temp.	60.0 ° F
Type	Gathering	Max Rod Load Gas	15000.0 lbf	Run Speed	1200 RPM	Auxiliary Load	0.0 HP

CONCERNS	
Project Notes	Acid Gas
Case Notes	N/A
Order Status	

Stage/Service Data

		Stage 1	Stage 2	Stage 3	Stage 4
Flow Rate	MMscfd	0.900	0.860	0.840	0.830
Load	HP	52.50	57.50	65.50	54.30
Specific Gravity	-	1.368	1.407	1.430	1.438
K Value (Cp/Cv)	-	1.2810	1.2805	1.2897	1.3197
Zs	-	0.9935	0.9854	0.9582	0.8586
Zd	-	0.9916	0.9804	0.9457	0.8525
Suction Press.	psiG	7.00	33.65	122.39	428.12
Ps@Flange	psiG	6.00	33.65	122.39	428.12
Pd@Flange	psiG	35.06	126.46	436.95	1414.13
Discharge Press.	psiG	33.65	122.39	428.12	1400.00
Compress. Ratio	-	2.4972	2.9721	3.3165	3.2331
Suction Temp.	° F	120.0	120.0	120.0	120.0
Cooler Temp.	° F	120.0	120.0	120.0	120.0

Cylinder Data

		Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model	-	90 Series (1868)	90 Series (1856)	90 Series (1841)	90 Series (1832)		
Operating Mode	-	D/A Cyl	D/A Cyl	D/A Cyl	D/A Cyl	BLANK	BLANK
Head End	Serv#/Stg#	1/1	1/2	1/3	1/4		
Bore	in	**15.500**	**9.500**	**5.250**	**3.000**		
MAWP	psiG	200.00	525.00	1750.00	2500.00		
RDP	psiG	175.00	477.00	1591.00	2273.00		
Tail Rod Dia	in	0.000	0.000	0.000	0.000		
Tsi / Est. Td	° F	127.3/257.8	126.1/283.9	125.3/306.1	124.5/316.6		
VVCP Open	% / Turns	37.00 : 18	0.00 : 0	0.00 : 0	0.00 : 0		
Base Clr	%	21.99	25.82	17.33	21.64		
Added Clr	%	28.87	0.00	0.00	0.00		
Total Clr	%	50.86	25.82	17.33	21.64		
Vol. Eff. Ps / Pd	% / %	43.68/21.34	60.22/25.59	66.92/26.07	63.18/25.78		
Q-Value Ps / Pd		4.31/3.53	2.93/2.32	8.49/6.13	4.86/3.68		
Flow	MMscfd	0.34	0.43	0.43	0.49		
Crank End	Serv#/Stg#	1/1	1/2	1/3	1/4		
Bore	in	**15.500**	**9.500**	**5.250**	**3.000**		
MAWP	psiG	200.00	525.00	1750.00	2500.00		
RDP	psiG	175.00	477.00	1591.00	2273.00		
Tsi / Est. Td	° F	127.3/257.8	126.1/283.9	125.3/306.1	124.5/316.6		
Base Clr	%	21.02	25.02	17.68	26.96		
Added Clr	%	0.00	0.00	0.00	0.00		
Total Clr	%	21.02	25.02	17.68	26.96		
Vol. Eff. Ps / Pd	% / %	72.89/35.61	61.23/26.02	66.42/25.87	56.06/22.87		
Q-Value Ps / Pd		4.24/3.47	2.81/2.22	7.36/5.32	3.03/2.30		
Flow	MMscfd	0.56	0.43	0.40	0.34		
Valve Spacers	HE#/CE#	0 / 0	0 / 0	0 / 0	0 / 0		
Rod Loads							
Gas-Compress.	%	40.0	46.6	53.6	54.7		
Gas-Tension	%	40.3	44.6	46.4	34.8		
Combined-Comp.	%	36.7	33.2	40.7	41.8		
Combined-Tens.	%	29.7	33.2	36.3	21.6		
Pin Reversal	Deg/Mag%	174/70	130/86	168/77	176/44		
Throw Loading	HP	52.5	57.5	65.5	54.3		

BOLD = Out of Limit

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