

## **Power Sections**

22 East Lake Crescent N.E., Airdrie, Alberta, Canada, T4A 2H3 Ph: (587) 775-7777 www.spirasystems.com



**Canadian Oilfield Units** 





Stator Specifications				
Overall Length (in.)	250.0 [6350 mm]			
Tube O.D. (in.)	5.13 [130 mm]			
Tube I.D. at Terminal (in.)	4.00 [102 mm]			
Rubber Cut Back Top (in.)	8.0			
Rubber Cut Back Bott (in.)	8.0			
Weight (kg)	280			
Tube Material	4140-4145			
To be threaded and ID Banded by customer				

Rotor Specifications				
Overall Length (in.)	240.0 [6096 mm]			
Contour Length (in.)	234 [5944 mm]			
Major Diameter (in.)	3.144			
Eccentricity (in.)	0.168			
Head Diameter (in.)	3.250			
Bored Weight (kg)	170			
Solid Weight (kg)	194			
Material	17-4PH			
Coating option 1	Chrome			
Coating option 2	Carbide			
To be threaded by customer				

Performance Specifications						
Flow Range (lpm)	750 - 1500					
Speed Range (RPM)	105 - 195					
Torque Slope (ft-lb/kPa)	0.669					
Rotation (rev/l)	0.138					
Stall Torque (ft-lb)	9,750					
Operating Parameters						
Max Diff Pressure (kPa)	9,700					
Torque (ft-lb)	6,500					
Flow Rate (lpm)	1,400					
Full Load RPM	134 at 1400 lpm					

Minor Diameter Fit Details (at 20°C)						
	Nominal Fit (in.)**	Minor Dia (in.)*	Nominal Fit (in.)**	Minor Dia (in.)*	Operating Temp	
Size Band	Vector Measurements		True Size Laser Measurements		Optimal	
1.0T	0.011	2.797	0.016	2.792	40 - 110 °C	
0.5T	0.001	2.807	0.006	2.802	60 - 130 °C	
STD	-0.009	2.817	-0.004	2.812	80 - 150 °C	
0.5L	-0.019	2.827	-0.014	2.822	100 - 150 °C	
1.0L	-	-	-	-	-	
1.5L	-	-	-	-	-	
2.0L	-	-	-	-	-	
Minor Shrinkage (in./°C)		0.0	00048			

150 140

130 120

110

100 90

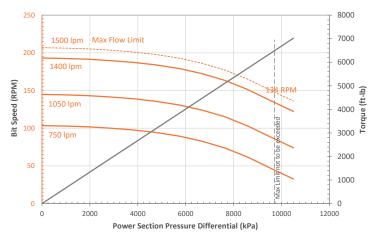
80

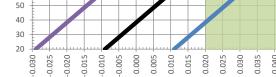
70

60

All default tolerances are +/- 0.015 unless otherwise explicitly agreed upon with Spira Systems. Call for availability of sizes not listed.

<sup>\*\*\*</sup>Best operating temperatures are based on new stators subject to normal thermal expansion conditions. Operators may wish to consider swell and run life when selecting sizes.





1. Choose desired operating temperature

2. Read across to middle of shaded region 3. Follow *slope* down to room temperature to determine which fit to order

Rotor-Stator Interference Fit Vector (in.) Negative = clearance Acceptable Fit at Reduced Diff Optimal Operating Fit Range

21/10/2020

= 1L Size Band STD Size Band

----- Expected slightly reduced torque when operating at this flow limit --- Expect reduced life when operating at this pressure limit for extended periods of time

Performance curves are for reference only. Actual power section performance may vary depending on operating conditions (e.g. chosen rotor/stator interference fit, possible rubber swelling by drilling fluid, rotor and stator wear, actual downhole temperature, actual stator temperature, physical and chemical properties of the drilling fluid and other factors encountered downhole). The torque may exceed that specified for the connected components. Operating above the recommended limits may result in damage to the power section and connected components which will be the liability of the operator. Data subject to change without notice. Visit www.spirasystems.com for most up to date information.

<sup>\*</sup>Approximate Vector/laser gauge conversion:  $0.005 \pm 0.005$ 

<sup>\*\*</sup>Negative fits indicate clearance fit at room temperature using nominal new rotor