

## POWER SECTION

**Model No: AT650783.3 ESX**

Revised: 9/24/2020

Rotor Specifications	
	inches
Overall Length	252.00
Contour Length	245.50
Major Diameter	4.204
Eccentricity	0.233
Head diameter	4.000
Thread Form	2.375 API REG
Weight	812 lbs
Material	17-4 PH <sup>1</sup>

Stator Specifications	
	inches
Overall Length	260.00
Tube OD	6.50
Tube ID	5.00
Rubber Cutback Top/End	8.00 / 8.00
Weight	953 lbs
Number of Stages	3.3
Tube Material	4140/4142 Alloy Steel
Rubber Options	NBR-HPW & NBR-HPO

NBR-HPW (in)		Fits (+ Compression / - Loose)				
Size	Minor <sup>2</sup>	75 °F	125 °F	175 °F	250 °F	300 °F <sup>3</sup>
.5 US						
STD	3.734	0.004	0.019	0.034	0.057	0.072
.5 OS	3.747	-0.009	0.006	0.021	0.044	0.059
1.0 OS	3.759	-0.021	-0.006	0.009	0.031	0.046
1.5 OS						
2.0 OS						
2.5 OS						

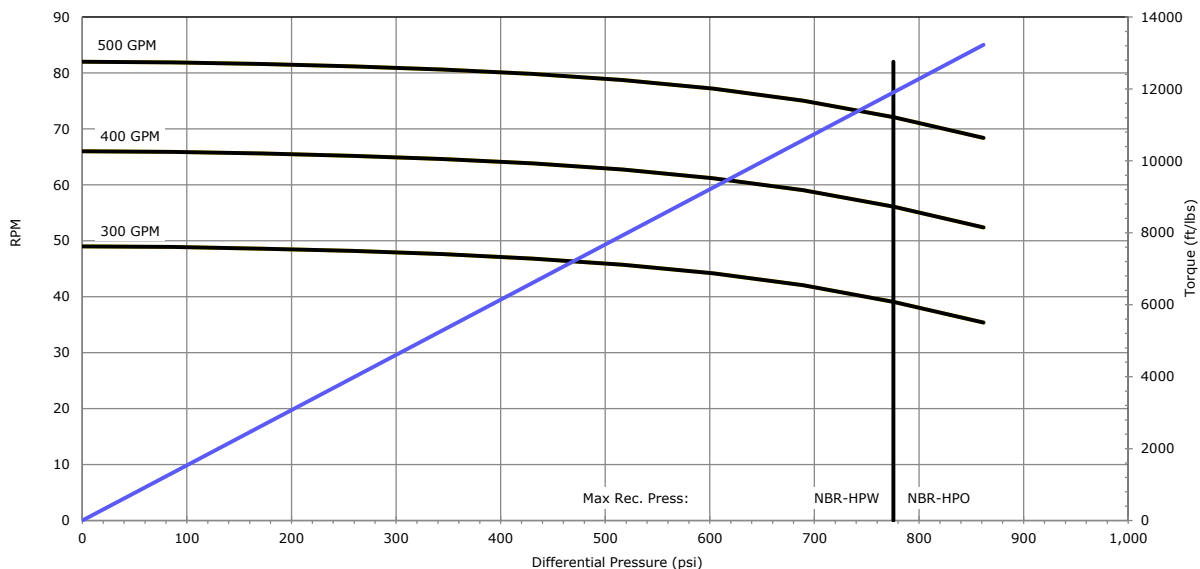
NBR-HPO (in)		Fits (+ Compression / - Loose)				
Size	Minor <sup>2</sup>	75 °F	125 °F	175 °F	250 °F	300 °F <sup>3</sup>
.5 US						
STD	3.734	0.004	0.019	0.034	0.057	0.072
.5 OS	3.747	-0.009	0.006	0.021	0.044	0.059
1.0 OS	3.759	-0.021	-0.006	0.009	0.031	0.046
1.5 OS						
2.0 OS						
2.5 OS						

Performance Specifications	
Flow Range (gpm)	300 - 500
Speed Range (rpm)	50 - 80
Torque Slope (ft-lb/psi)	15.35
Rotation (rev/gal)	0.164
Off Bottom Pressure (psi)	60

Performance Details		NBR-HPW	NBR-HPO
Max Diff Press (psi)		780	780
Stall Diff Press (psi)		1230	1230
Max Torque (ft-lb)		11910	11910
Stall Torque (ft-lb)		18750	18750

■ (NBR-HPW/HPO)

■ Torque



<sup>1</sup> Coating options of chrome or tungsten carbide are available <sup>2</sup> Vector Gauge Readings at Room Temp 75°F <sup>3</sup> BHCT Exceeding 320°F will void warranty for NBR-HPW (325°F for NBR-HPO).

Performance curves are based on new rotor and stator dimensions and for reference only. Actual performance may vary depending on fit and drilling conditions. The stall torque may exceed that specified for the connected components. Operating over the recommended limits may result in damage to the power section and connected components. Please visit [www.AbacoDrilling.com](http://www.AbacoDrilling.com) for the latest specification revisions.

### LOCATIONS

US: Headquarters 713 Northpark Central Dr., #400 Houston, TX 77073 - Tel: (281) 869-0700 - Fax: (281) 869-0701  
 US: Sales & Distribution 11308 West Interstate 20 East, Odessa, TX 79765 - Tel: (432) 248-1814  
 CANADA: Stator Manufacturing 6303-39th Street Leduc, Alberta T9E 0Z3 Canada - Tel: (780) 986-8947 - Fax: (780) 986-8842  
 DUBAI UAE: Stator Manufacturing Oilfields Supply Center B#57, Jebel Ali, Dubai UAE, P.O. Box 19909 - Tel: 971-4-870-8600

## POWER SECTION - METRIC

**Model No: AT650783.3 ESX**

Revised: 9/24/2020

Rotor Specifications	
	mm
Overall Length	6400.8
Contour Length	6235.7
Major Diameter	106.78
Eccentricity	5.92
Head diameter	101.60
Thread Form	2.375 API REG
Weight	368 kg
Material	17-4 PH <sup>1</sup>

Stator Specifications	
	mm
Overall Length	6604.0
Tube OD	165.1
Tube ID	127.0
Rubber Cutback Top/End	203.0 / 203.0
Weight	432 kg
Number of Stages	3.3
Tube Material	4140/4142 Seamless Alloy Steel
Rubber Options	NBR-HPW & NBR-HPO

NBR-HPW (mm)		Fits (+ Compression / - Loose)				
Size	Minor <sup>2</sup>	25 °C	75 °C	100 °C	125 °C	150 °C <sup>3</sup>
.5 US						
STD	94.84	0.10	0.79	1.14	1.49	1.83
.5 OS	95.17	-0.23	0.46	0.80	1.15	1.49
1.0 OS	95.48	-0.53	0.15	0.49	0.83	1.17
1.5 OS						
2.0 OS						
2.5 OS						

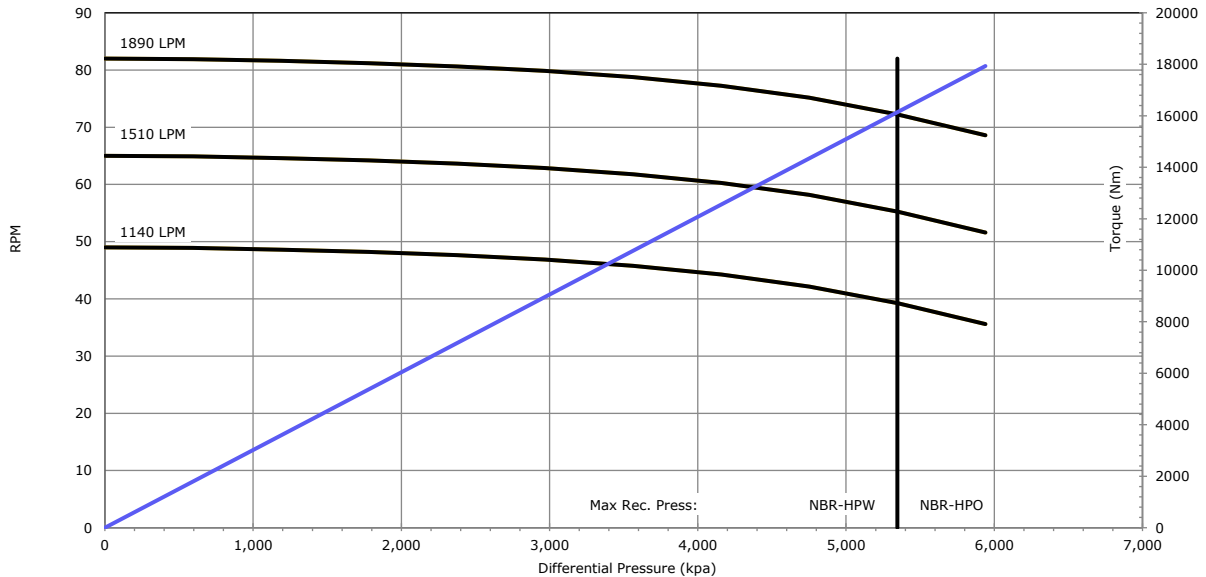
NBR-HPO (mm)		Fits (+ Compression / - Loose)				
Size	Minor <sup>2</sup>	25 °C	75 °C	100 °C	125 °C	150 °C <sup>3</sup>
.5 US						
STD	94.84	0.10	0.79	1.14	1.49	1.83
.5 OS	95.17	-0.23	0.46	0.80	1.15	1.49
1.0 OS	95.48	-0.53	0.15	0.49	0.83	1.17
1.5 OS						
2.0 OS						
2.5 OS						

Performance Specifications	
Flow Range (lpm)	1140 - 1890
Speed Range (rpm)	50 - 80
Torque Slope (Nm/kpa)	3.02
Rotation (rev/Liter)	0.0433
Off Bottom Pressure (kpa)	420

Performance Details		
	NBR-HPW	NBR-HPO
Max Diff Press (kpa)	5400	5400
Stall Diff Press (kpa)	8400	8500
Max Torque (Nm)	16200	16200
Stall Torque (Nm)	25500	25500

■ (NBR-HPW/HPO)

■ Torque



<sup>1</sup> Coating options of chrome or tungsten carbide are available. <sup>2</sup> Vector Gauge Readings at Room Temp 25°C. <sup>3</sup> BHCT Exceeding 160°C will void warranty for NBR-HPW (163°C for NBR-HPO).

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