



Drilling Motors Catalog

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9 5/8" Motors

Motor Specifications

Health, Safety & Environment

Providing a safe, accident-free and healthy work environment is paramount at IPS. We understand that accident avoidance is achieved through careful attention to all our company policies and attention to detail.

IPS was built with a clear focus on safety and accident avoidance. At IPS, the prevention of occupationally induced injuries and illnesses take precedence over operating productivity whenever necessary. It's our company policy. Protecting our greatest assets via enhanced safety measures ensures our future success.

Serving our customers needs and ensuring their success by providing the industry's best drilling motors - and doing it all within a safe and accident free environment. It's what we do best at IPS.

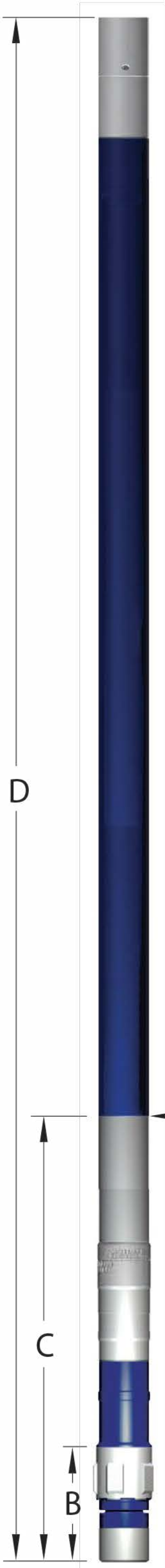
4 3/4" - 5"

MOTORS



4-3/4" MOTOR SPECIFICATIONS

4-3/4" 5:6 Lobe 8.3 Stage

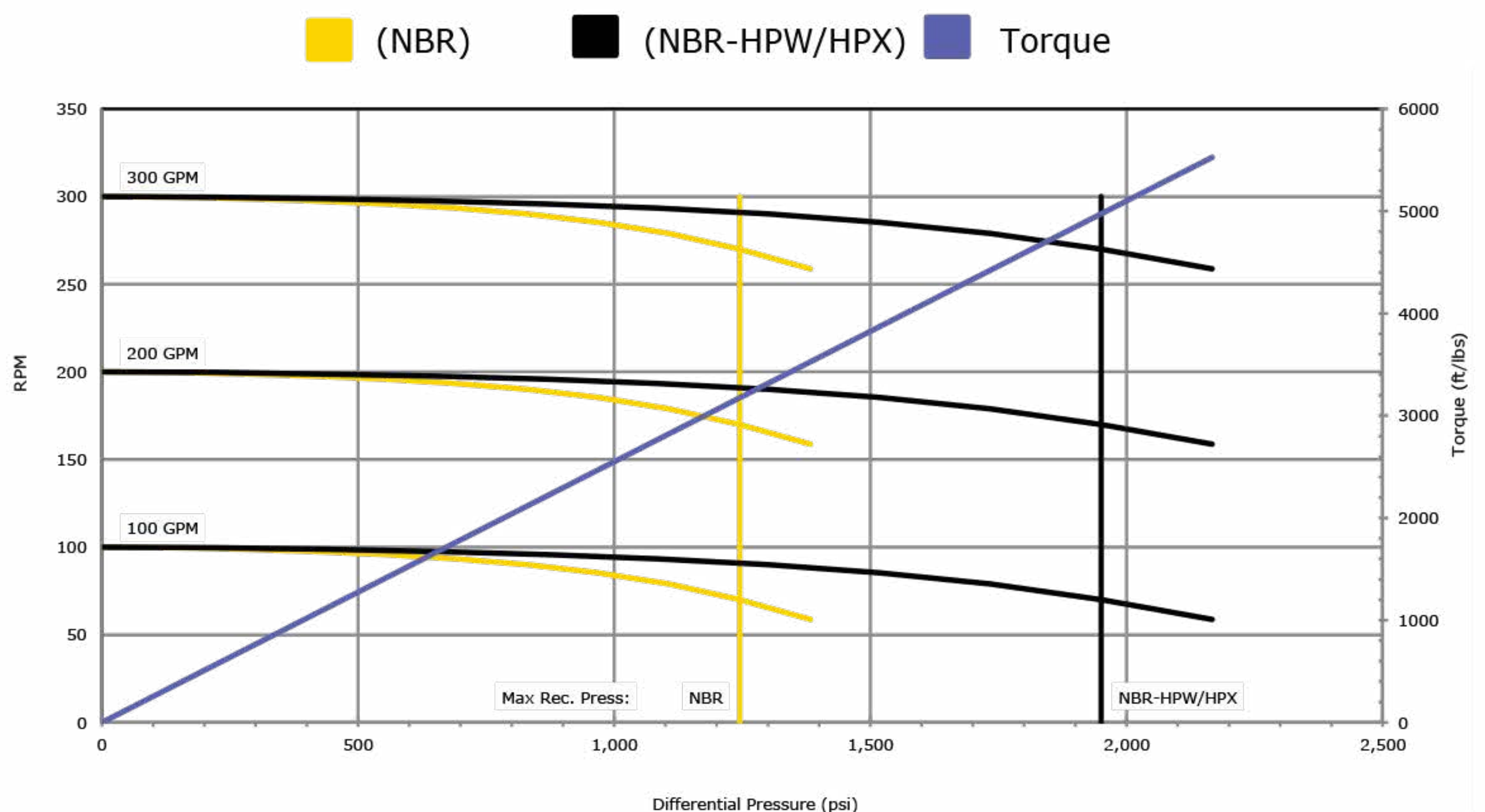


Bearing Data	
Description	Short Bit-To-Bend High Performance Mud-Lubricated Bearing Section
Tool OD (in)	5.63 Bearing Housing 4.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	2.815
B Bit to Stabilizer Length	Slick or 21"
C Bit to Bend Length	48" (4 ft)
Bit Box Connection	3-1/2 Reg Box
D Overall Length	327.50

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	210,000 lbs
Absolute Overpull	470,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	1250	1960
Stall Diff Press (psi)	1870	3080
Max Torque (ft-lb)	3180	4980
Stall Torque (ft-lb)	4770	7840

Performance Specifications	
Flow Range (gpm)	100 - 300
Speed Range (rpm)	100 - 300
Torque Slope (ft-lb/psi)	2.55
Rotation (rev/gal)	1.000
Off Bottom Pressure (psi)	100

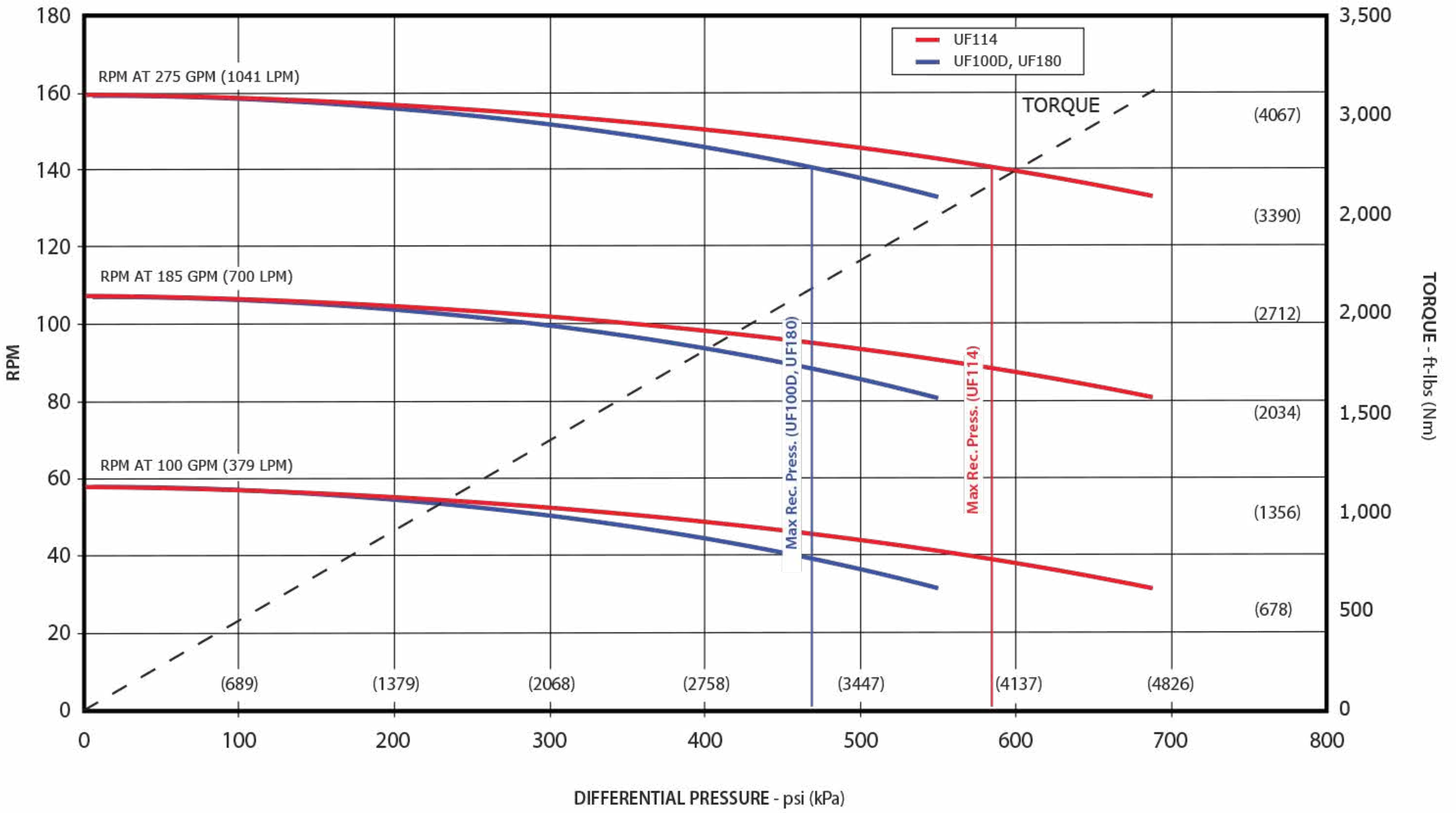




4-3/4" MOTOR SPECIFICATIONS

4-3/4" 5:6 Lobe 8.3 Stage

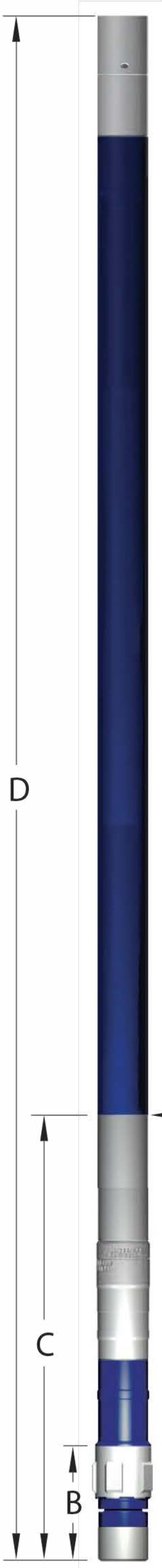
Predicted Build Rates Degrees/100 Ft. (30m)					
BEND SETTING	SLICK		STABILIZER		
	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	
0.39	0.31	0.82	3.62	3.90	
0.78	3.85	2.72	6.76	7.05	
1.15	7.21	6.08	9.75	10.04	
1.5	10.38	9.25	12.57	12.86	
1.83	13.37	12.25	15.24	15.52	
2.12	16.01	14.88	17.58	17.86	
2.38	18.37	17.24	19.67	19.96	
2.6	20.36	19.23	21.45	21.73	
2.77	21.90	20.77	22.82	23.10	
2.9	23.08	21.95	23.87	24.15	
2.97	23.71	22.59	24.43	24.72	
3	23.98	22.86	24.67	24.96	





4-3/4" MOTOR SPECIFICATIONS

4-3/4" 7:8 Lobe 3.8 Stage

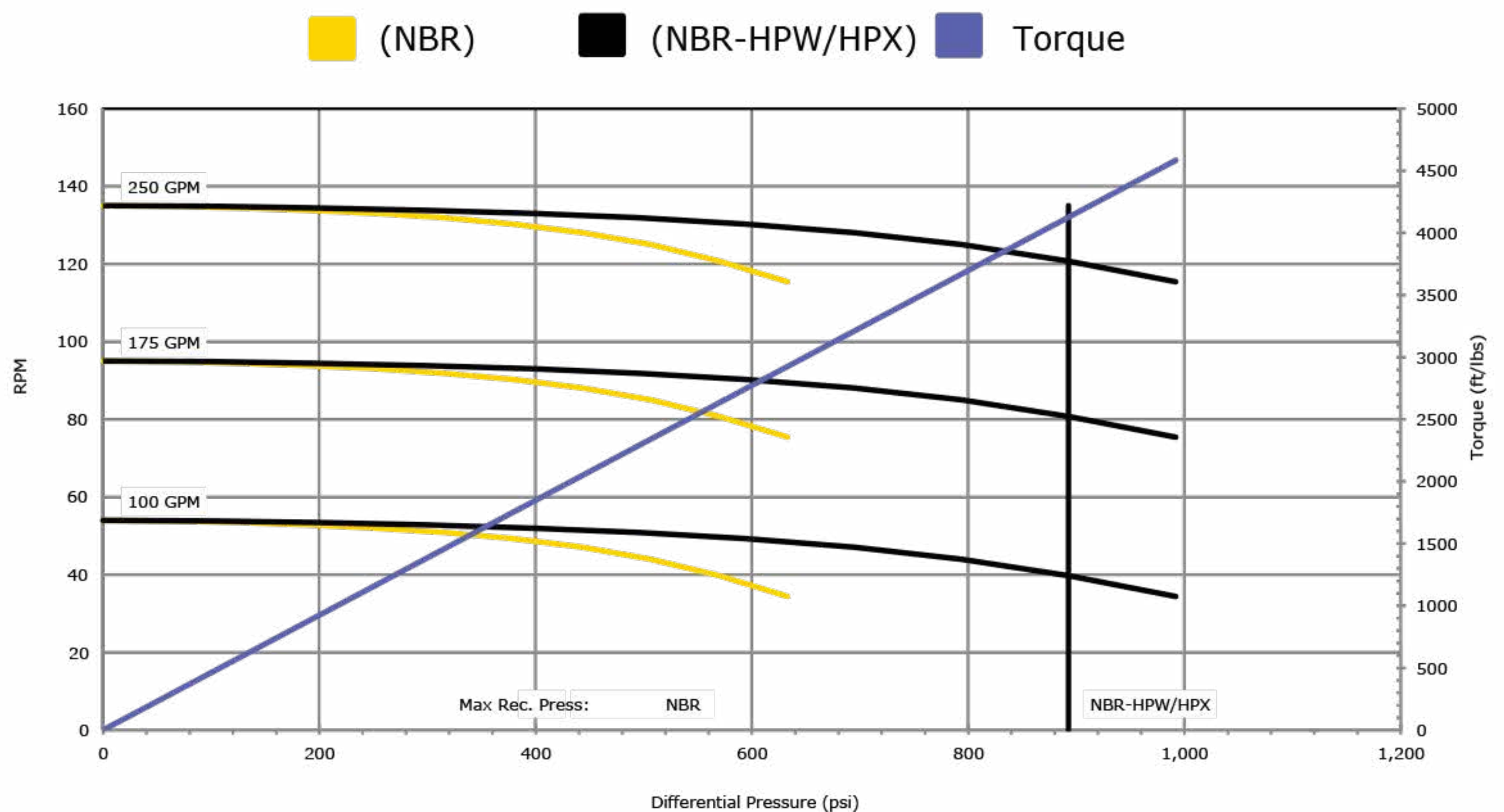


Bearing Data	
Description	Short Bit-To-Bend High Performance Mud-Lubricated Bearing Section
Tool OD (in)	5.63 Bearing Housing 4.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	2.815
B Bit to Stabilizer Length	Slick or 21"
C Bit to Bend Length	48" (4 ft)
Bit Box Connection	3-1/2 Reg Box
D Overall Length	272.0

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	210,000 lbs
Absolute Overpull	470,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	570	900
Stall Diff Press (psi)	860	1410
Max Torque (ft-lb)	2640	4130
Stall Torque (ft-lb)	3960	6500

Performance Specifications	
Flow Range (gpm)	100 - 250
Speed Range (rpm)	50 - 140
Torque Slope (ft-lb/psi)	4.62
Rotation (rev/gal)	0.540
Off Bottom Pressure (psi)	50

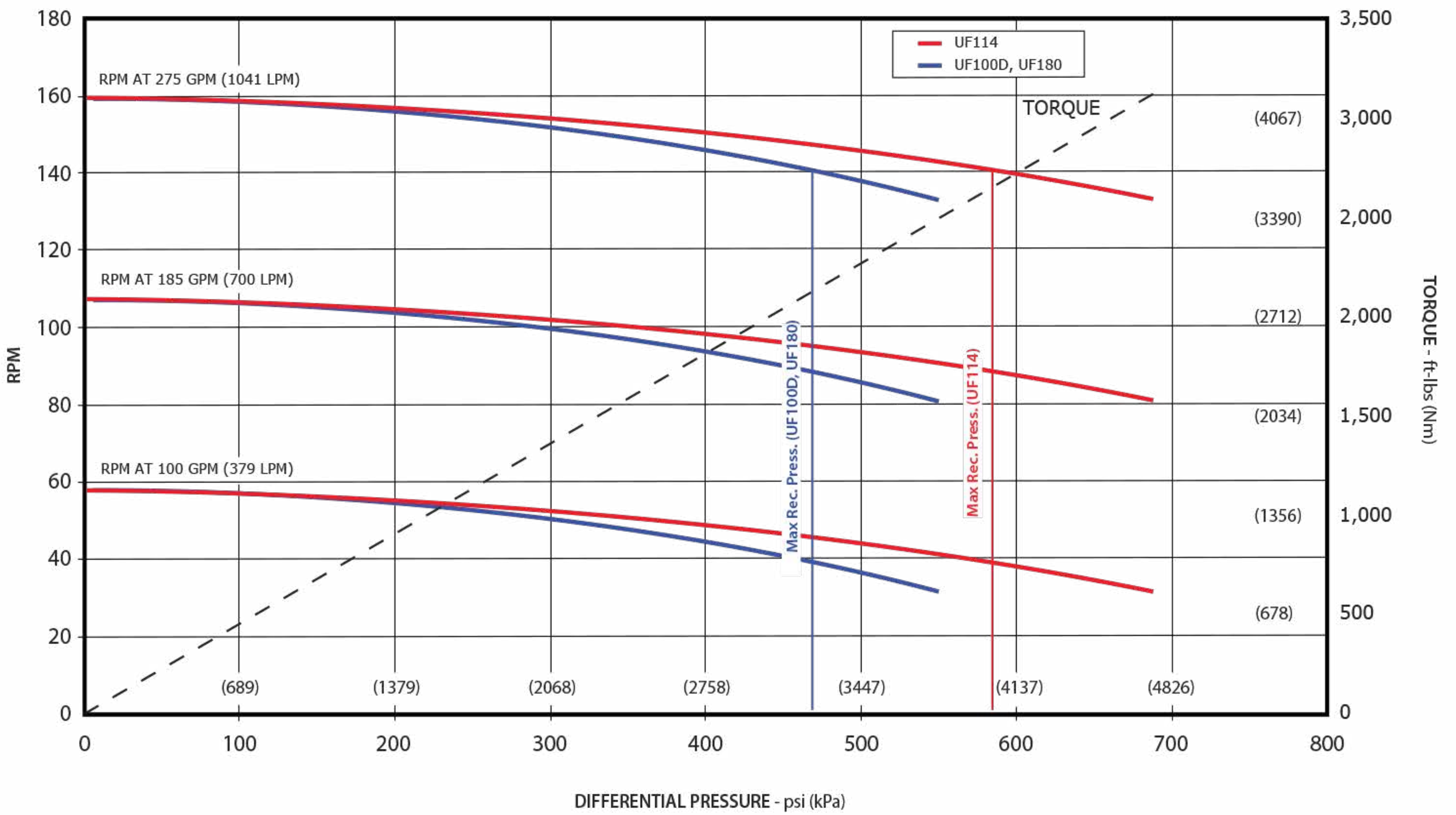




4-3/4" MOTOR SPECIFICATIONS

4-3/4" 7:8 Lobe 3.8 Stage

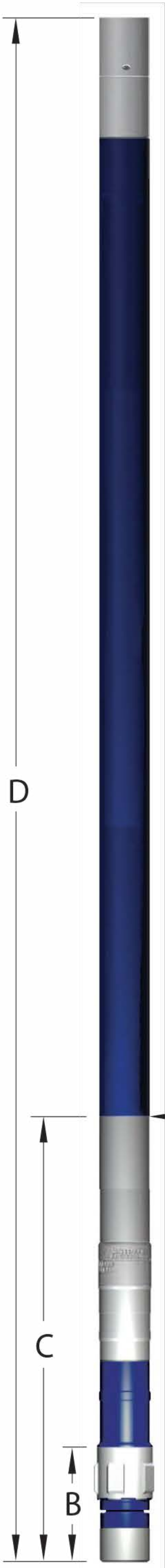
Predicted Build Rates Degrees/100 Ft. (30m)					
BEND SETTING	SLICK		STABILIZER		
	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	
0.39	0.31	0.82	3.62	3.90	
0.78	3.85	2.72	6.76	7.05	
1.15	7.21	6.08	9.75	10.04	
1.5	10.38	9.25	12.57	12.86	
1.83	13.37	12.25	15.24	15.52	
2.12	16.01	14.88	17.58	17.86	
2.38	18.37	17.24	19.67	19.96	
2.6	20.36	19.23	21.45	21.73	
2.77	21.90	20.77	22.82	23.10	
2.9	23.08	21.95	23.87	24.15	
2.97	23.71	22.59	24.43	24.72	
3	23.98	22.86	24.67	24.96	





4-3/4" MOTOR SPECIFICATIONS

4-3/4" 9:10 Lobe 4.0 Stage

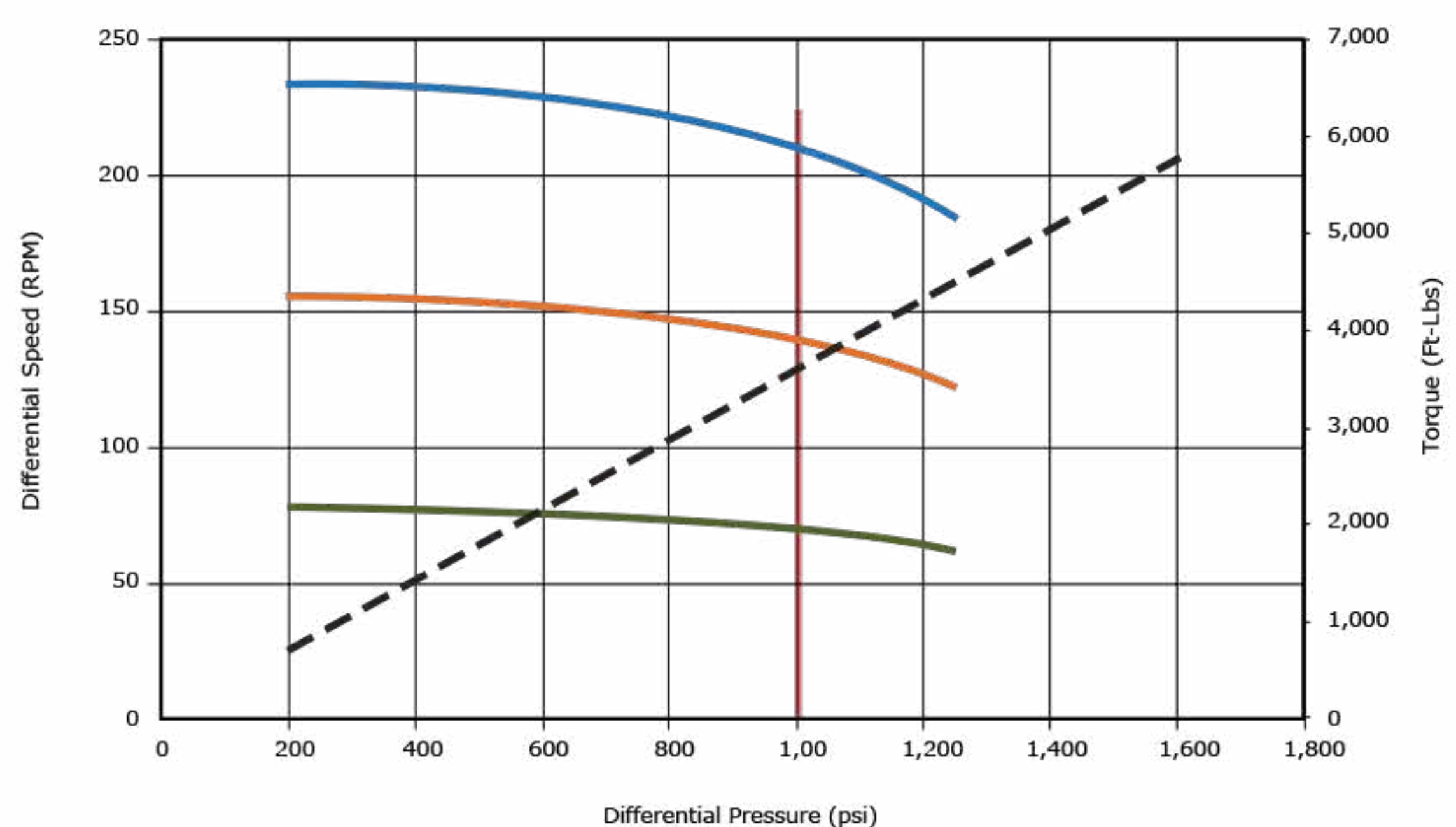
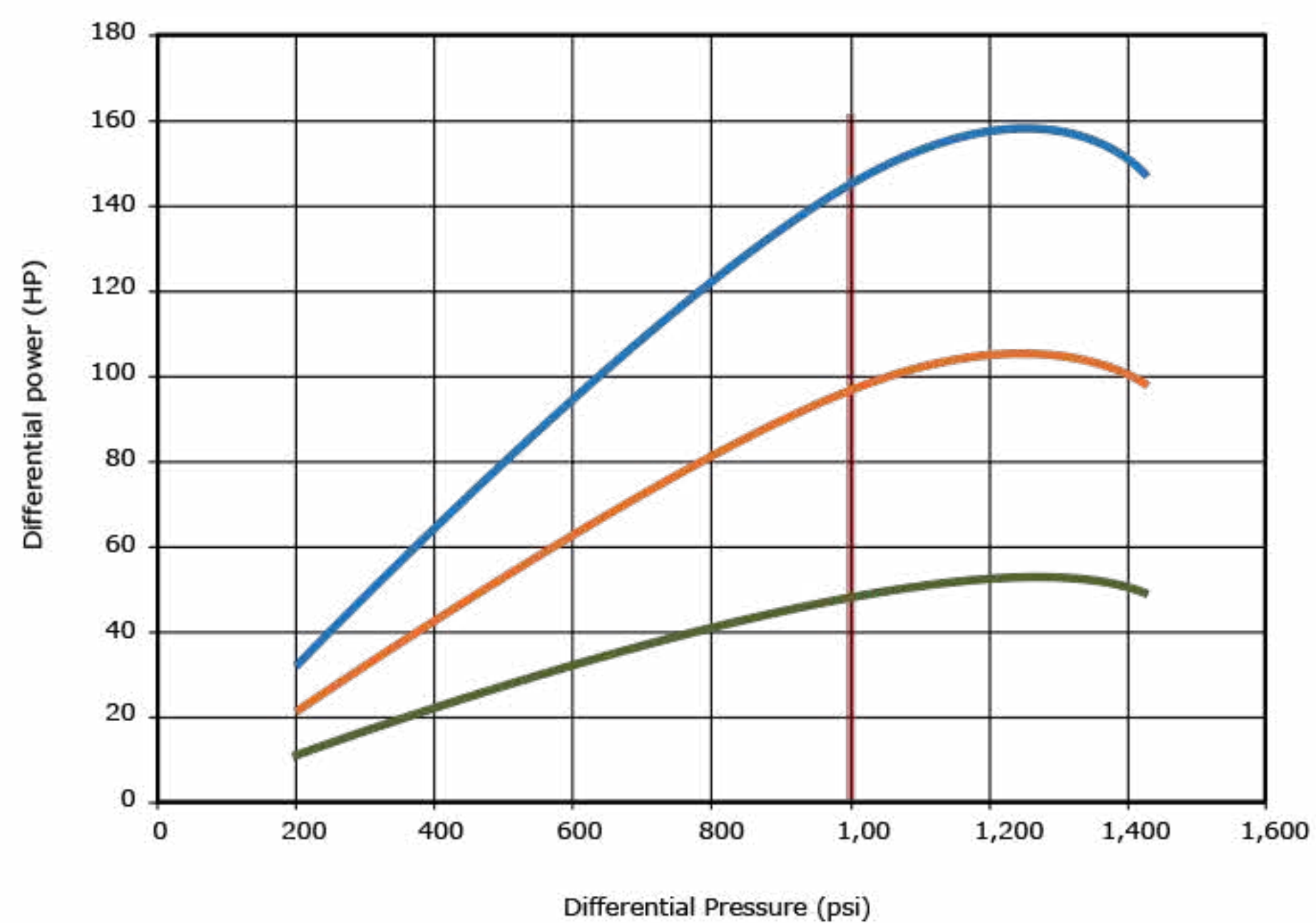


Bearing Data	
Description	Short Bit-To-Bend High Performance Mud-Lubricated Bearing Section
Tool OD (in)	5.63 Bearing Housing 4.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	2.815
B Bit to Stabilizer Length	Slick or 21"
C Bit to Bend Length	48" (4 ft)
Bit Box Connection	3-1/2 Reg Box
D Overall Length	238.0

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	210,000 lbs
Absolute Overpull	470,000 lbs

Performance Specifications		
Operating Flow Rate	100 - 300 GPM	379 - 1,136 LPM
Developed Power	158.6	118.3 Kw
Maximum Developed Torque	5,800 Ft-Lbs	7,864 N-m
Speed @ No Load	78 - 234 RPM	78 - 234 RPM
Revs Per Volume @ No Load	0.78 Rev/Gal	0.21 Rev/L
Differential Pressure @ No Load	200 PSI	1.4 MPa
Speed @ Full Load	70 - 210 RPM	70 - 210 RPM
Revs Per Volume @ Full Load	0.70 Rev/Gal	0.18 Rev/L
Differential Pressure @ Full Load	1,000 PSI	6.9 MPa

■ 300 GPM ■ 200 GPM ■ 100 GPM ■ FULL LOAD ■ TORQUE

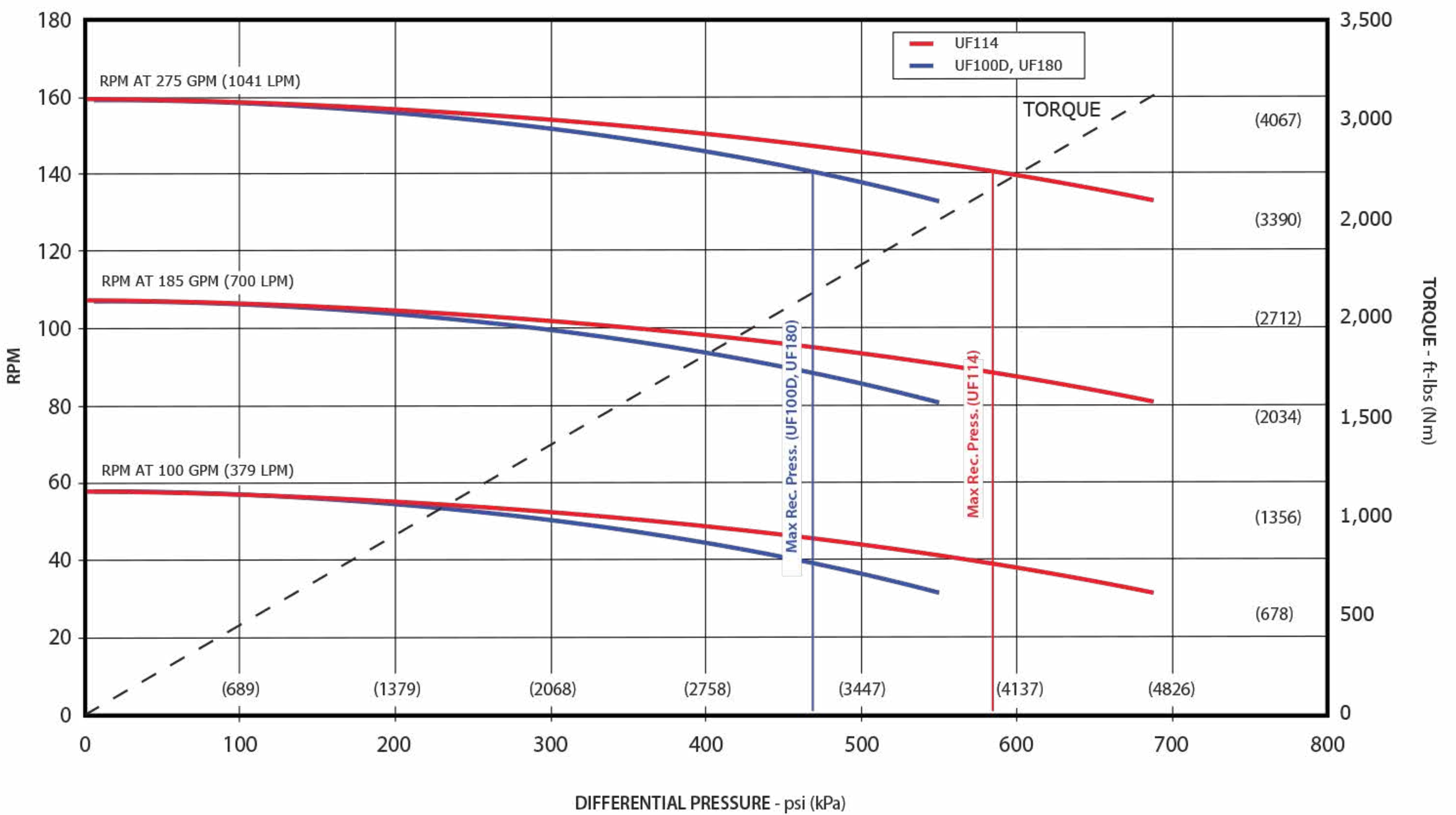




4-3/4" MOTOR SPECIFICATIONS

4-3/4" 9:10 Lobe 4.0 Stage

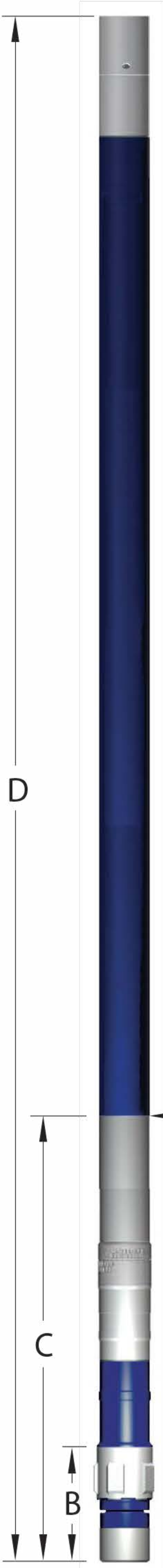
Predicted Build Rates Degrees/100 Ft. (30m)					
BEND SETTING	SLICK		STABILIZER		
	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	
0.39	0.31	0.82	3.62	3.90	
0.78	3.85	2.72	6.76	7.05	
1.15	7.21	6.08	9.75	10.04	
1.5	10.38	9.25	12.57	12.86	
1.83	13.37	12.25	15.24	15.52	
2.12	16.01	14.88	17.58	17.86	
2.38	18.37	17.24	19.67	19.96	
2.6	20.36	19.23	21.45	21.73	
2.77	21.90	20.77	22.82	23.10	
2.9	23.08	21.95	23.87	24.15	
2.97	23.71	22.59	24.43	24.72	
3	23.98	22.86	24.67	24.96	





5" MOTOR SPECIFICATIONS

5" 6:7 Lobe 8.0 Stage

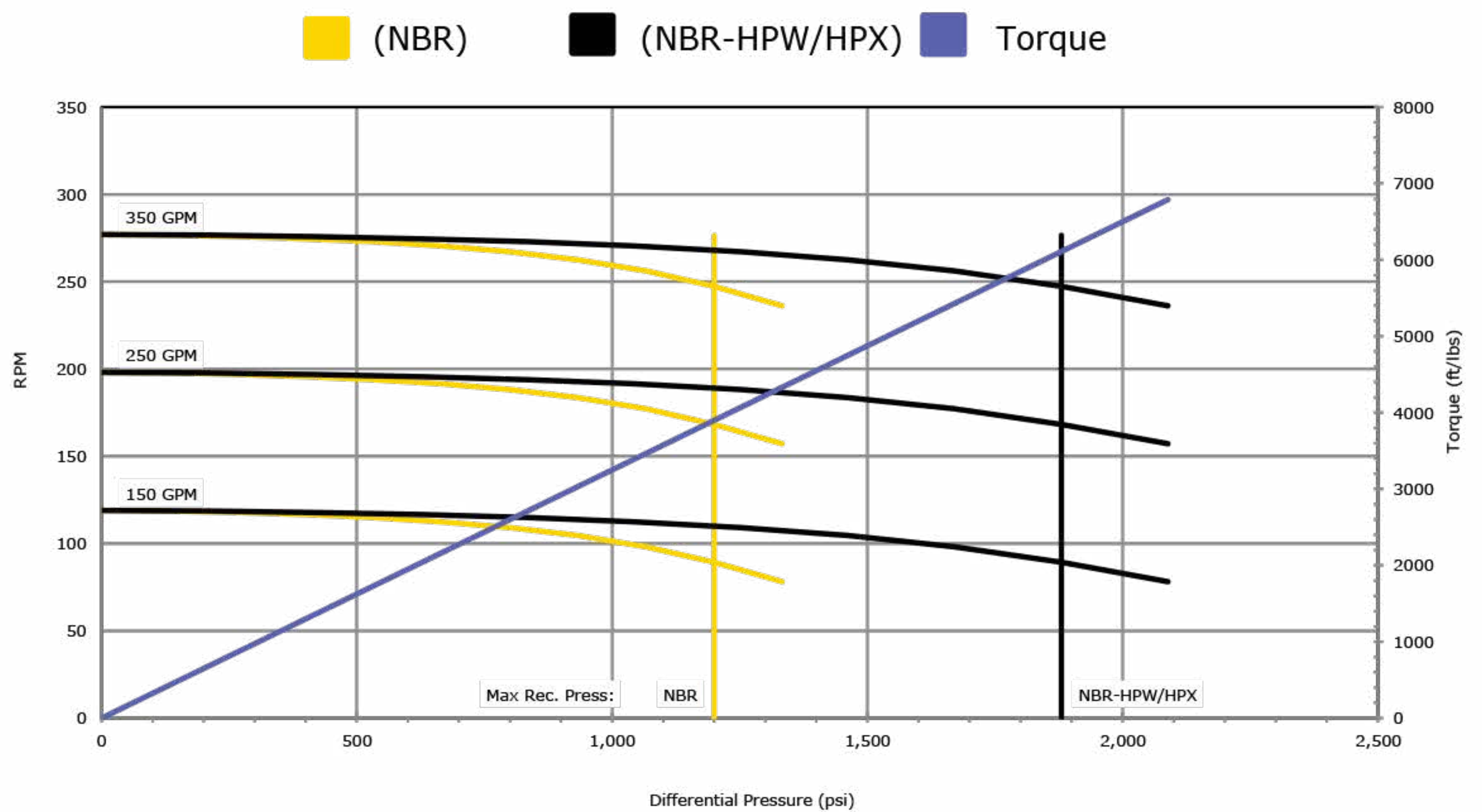


Bearing Data	
Description	Short Bit-To-Bend High Performance Mud-Lubricated Bearing Section
Tool OD (in)	5.63 Bearing Housing 4.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	2.815
B Bit to Stabilizer Length	Slick or 21"
C Bit to Bend Length	48" (4 ft)
Bit Box Connection	3-1/2 Reg Box
D Overall Length	335

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	210,000 lbs
Absolute Overpull	470,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	1200	1880
Stall Diff Press (psi)	1800	2970
Max Torque (ft-lb)	3900	6110
Stall Torque (ft-lb)	5850	9630

Performance Specifications	
Flow Range (gpm)	150 - 350
Speed Range (rpm)	120 - 280
Torque Slope (ft-lb/psi)	3.25
Rotation (rev/gal)	0.790
Off Bottom Pressure (psi)	110

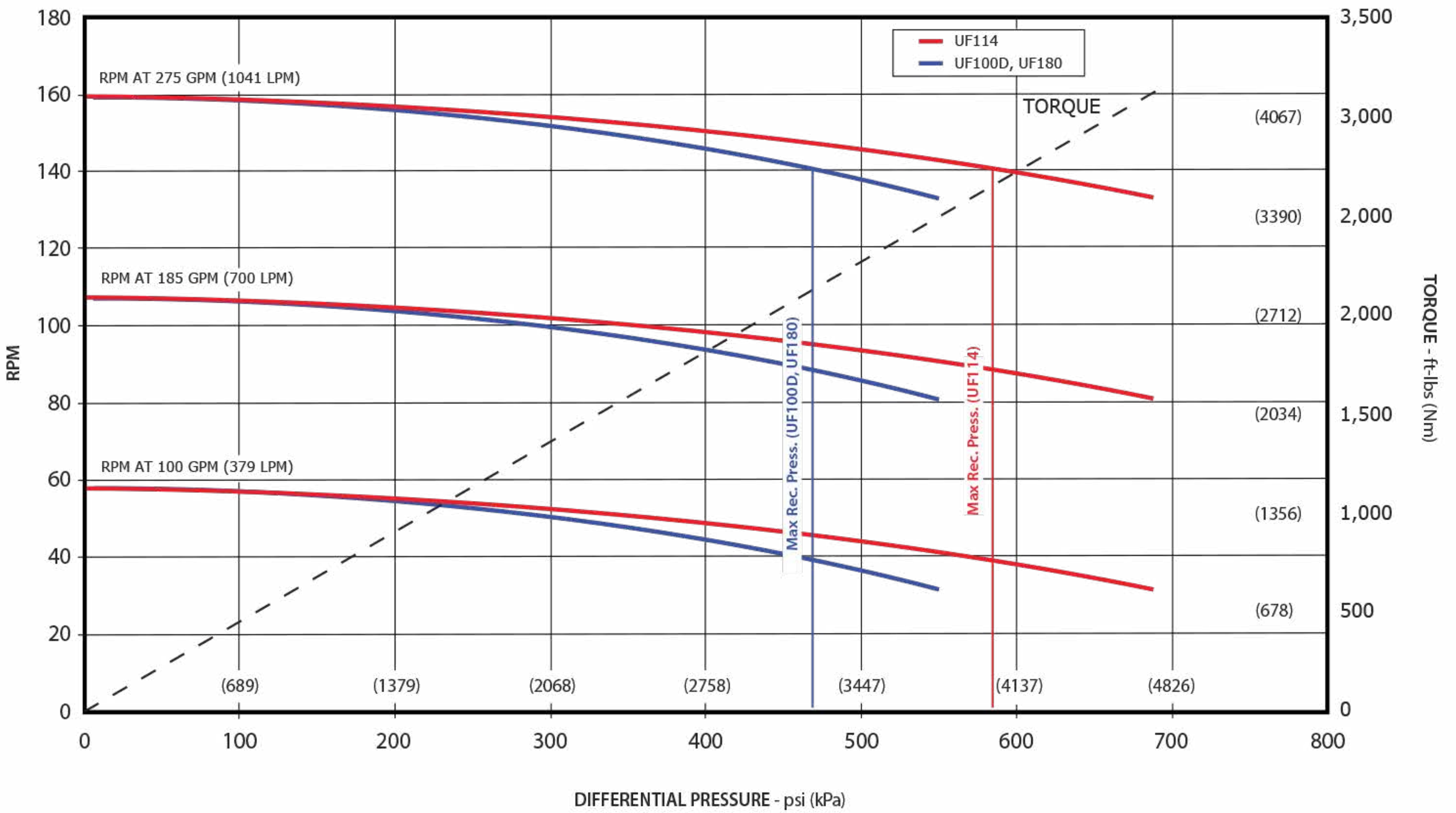




5" MOTOR SPECIFICATIONS

5" 6:7 Lobe 8.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)					
BEND SETTING	SLICK		STABILIZER		
	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	6-1/2 HOLE SIZE	6-3/4 HOLE SIZE	
0.39	0.31	0.82	3.62	3.90	
0.78	3.85	2.72	6.76	7.05	
1.15	7.21	6.08	9.75	10.04	
1.5	10.38	9.25	12.57	12.86	
1.83	13.37	12.25	15.24	15.52	
2.12	16.01	14.88	17.58	17.86	
2.38	18.37	17.24	19.67	19.96	
2.6	20.36	19.23	21.45	21.73	
2.77	21.90	20.77	22.82	23.10	
2.9	23.08	21.95	23.87	24.15	
2.97	23.71	22.59	24.43	24.72	
3	23.98	22.86	24.67	24.96	



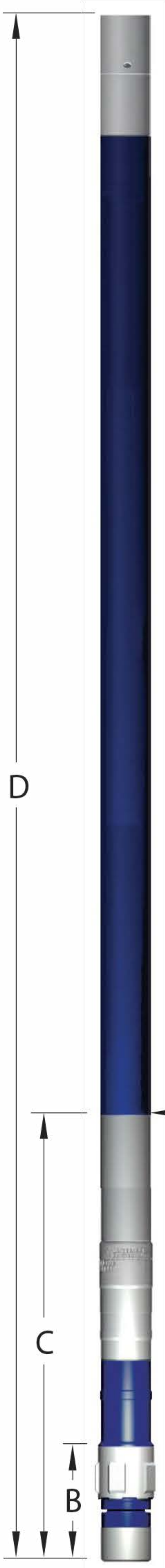
6 3/4" - 7"

MOTORS



6-3/4" MOTOR SPECIFICATIONS

6-3/4" 4:5 Lobe 7.0 Stage

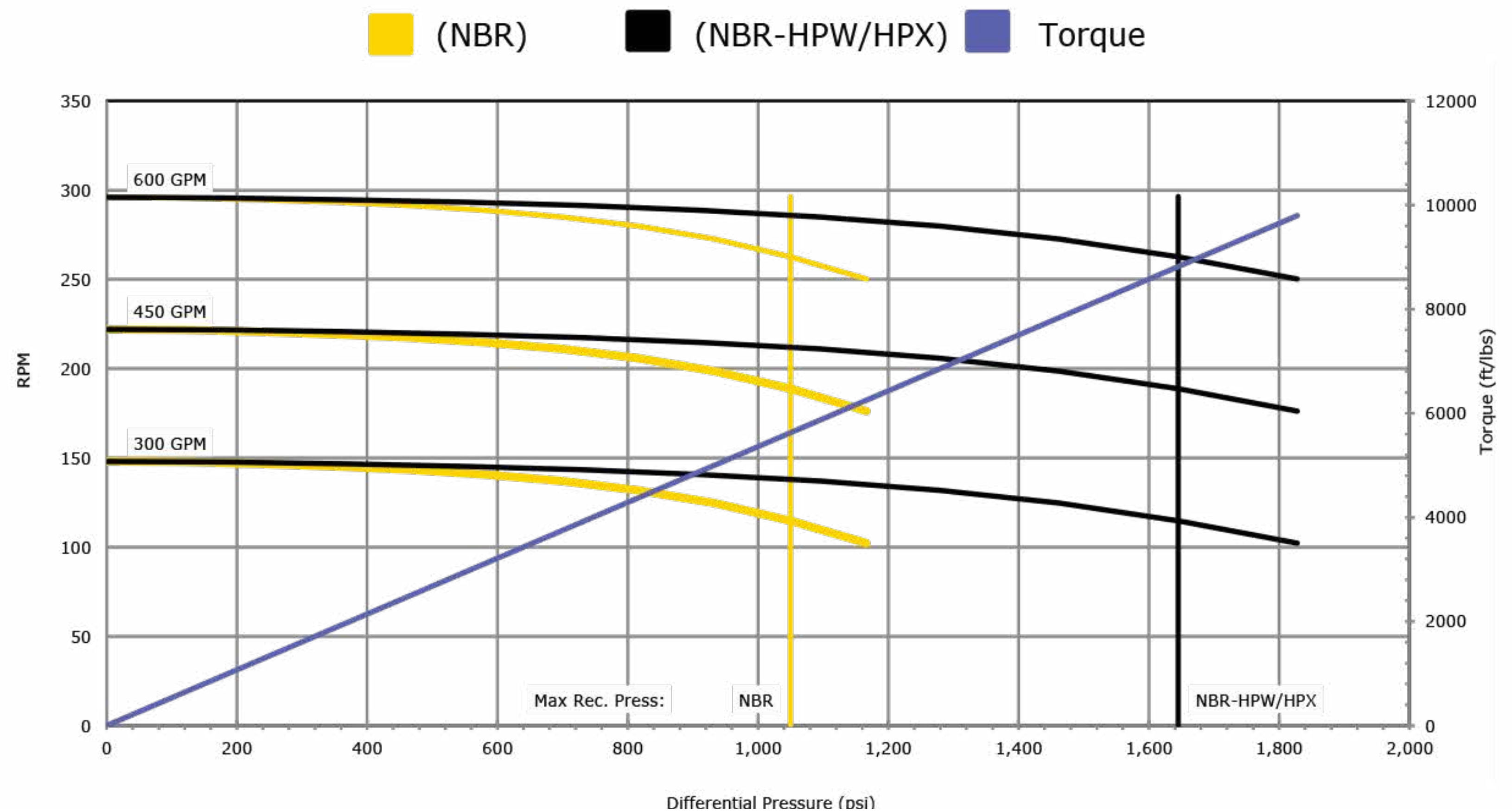


Bearing Data	
Description	High Performance Mud-Luricated Bearing Section
Tool OD (in)	6.90 Slick Bearing Housing 7.63 Thread Protector 6.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	3.84
B Bit to Stabilizer Length	30.5 in (2.5 ft)
C Bit to Bend Length	74" (6.2 ft)
Bit Box Connection	4-1/2 Reg Box
D Overall Length	337.50

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	400,000 lbs
Absolute Overpull	600,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	1050	1650
Stall Diff Press (psi)	1580	2600
Max Torque (ft-lb)	5630	8820
Stall Torque (ft-lb)	8450	13890

Performance Specifications	
Flow Range (gpm)	300 - 600
Speed Range (rpm)	150 - 300
Torque Slope (ft-lb/psi)	5.36
Rotation (rev/gal)	0.494
Off Bottom Pressure (psi)	150



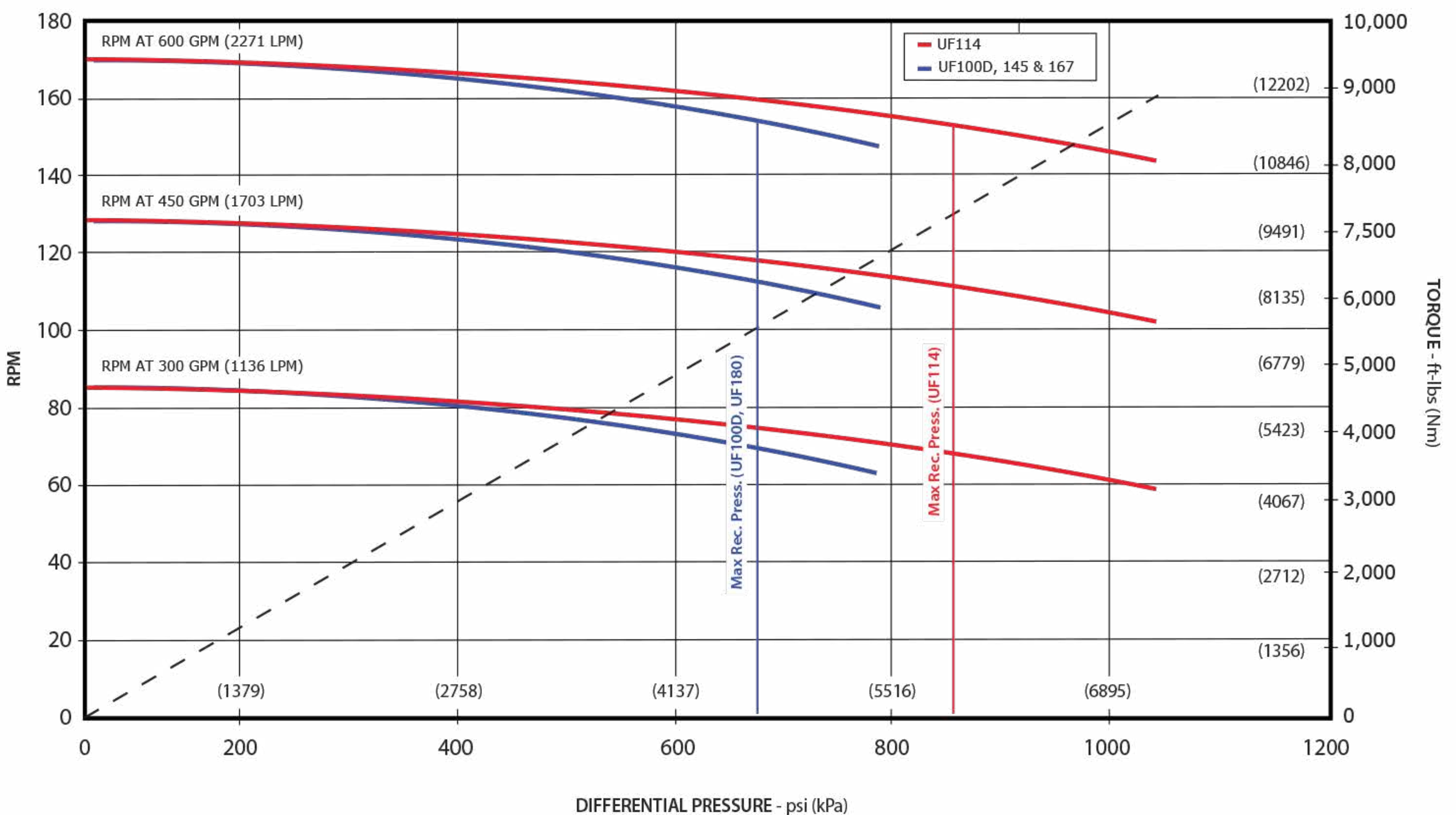


6-3/4" MOTOR SPECIFICATIONS

6-3/4" 4:5 Lobe 7.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)					
BEND SETTING (DEGREES)	SLICK			ONE STABILIZER*	
	HOLE SIZE			HOLE SIZE	
	8-1/2	8-3/4	9-7/8	8-1/2	8-3/4
0.39	1.15	0.48	-	2.90	3.11
0.78	4.13	3.47	0.49	5.43	5.64
1.15	6.96	6.30	3.32	7.83	8.04
1.50	9.65	8.98	6.00	10.11	10.31
1.83	12.17	11.51	8.53	12.24	12.46
2.12	14.40	13.74	10.75	14.11	14.33
2.38	(16.37)	15.74	12.73	15.83	16.01
2.60	(18.08)	17.42	14.43	(17.26)	17.47
2.77	(19.36)	18.73	15.74	(18.37)	18.54
2.90	(20.39)	(19.69)	16.71	(19.16)	(19.42)
2.97	(20.91)	(20.25)	17.26	(19.62)	(19.83)
3.00	(21.14)	(20.46)	17.47	(19.69)	(19.90)

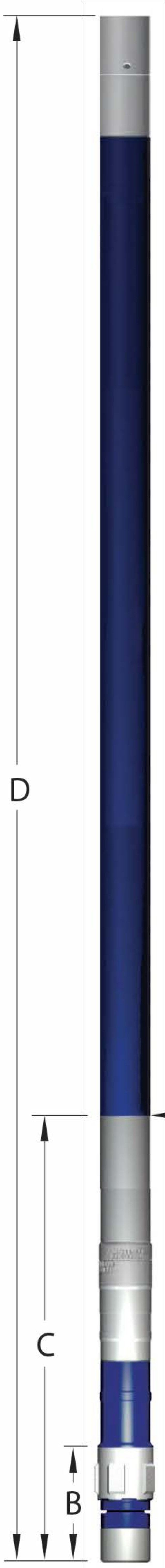
() STATOR CONTACT; CONFIGURATION UNSTABLE * 1/8" UNDER GAGE





6-3/4" MOTOR SPECIFICATIONS

6-3/4" 6:7 Lobe 5.0 Stage

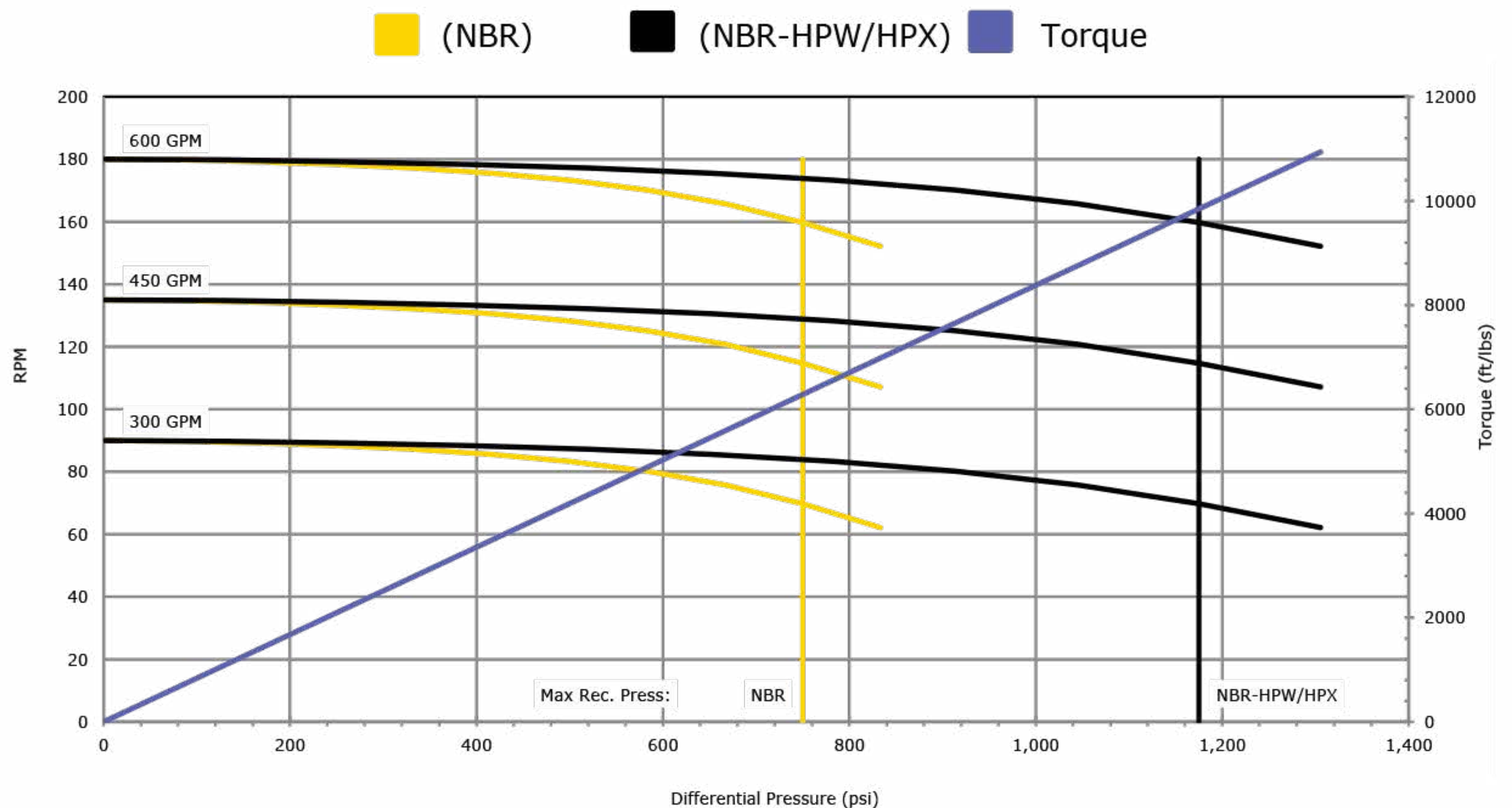


Bearing Data	
Description	High Performance Mud-Luricated Bearing Section
Tool OD (in)	6.90 Slick Bearing Housing 7.63 Thread Protector 6.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	3.84
B Bit to Stabilizer Length	30.5 in (2.5 ft)
C Bit to Bend Length	74" (6.2 ft)
Bit Box Connection	4-1/2 Reg Box
D Overall Length	327.50

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	400,000 lbs
Absolute Overpull	600,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	750	1180
Stall Diff Press (psi)	1130	1860
Max Torque (ft-lb)	6290	9850
Stall Torque (ft-lb)	9430	15510

Performance Specifications	
Flow Range (gpm)	300 - 600
Speed Range (rpm)	90 - 180
Torque Slope (ft-lb/psi)	8.38
Rotation (rev/gal)	0.300
Off Bottom Pressure (psi)	110



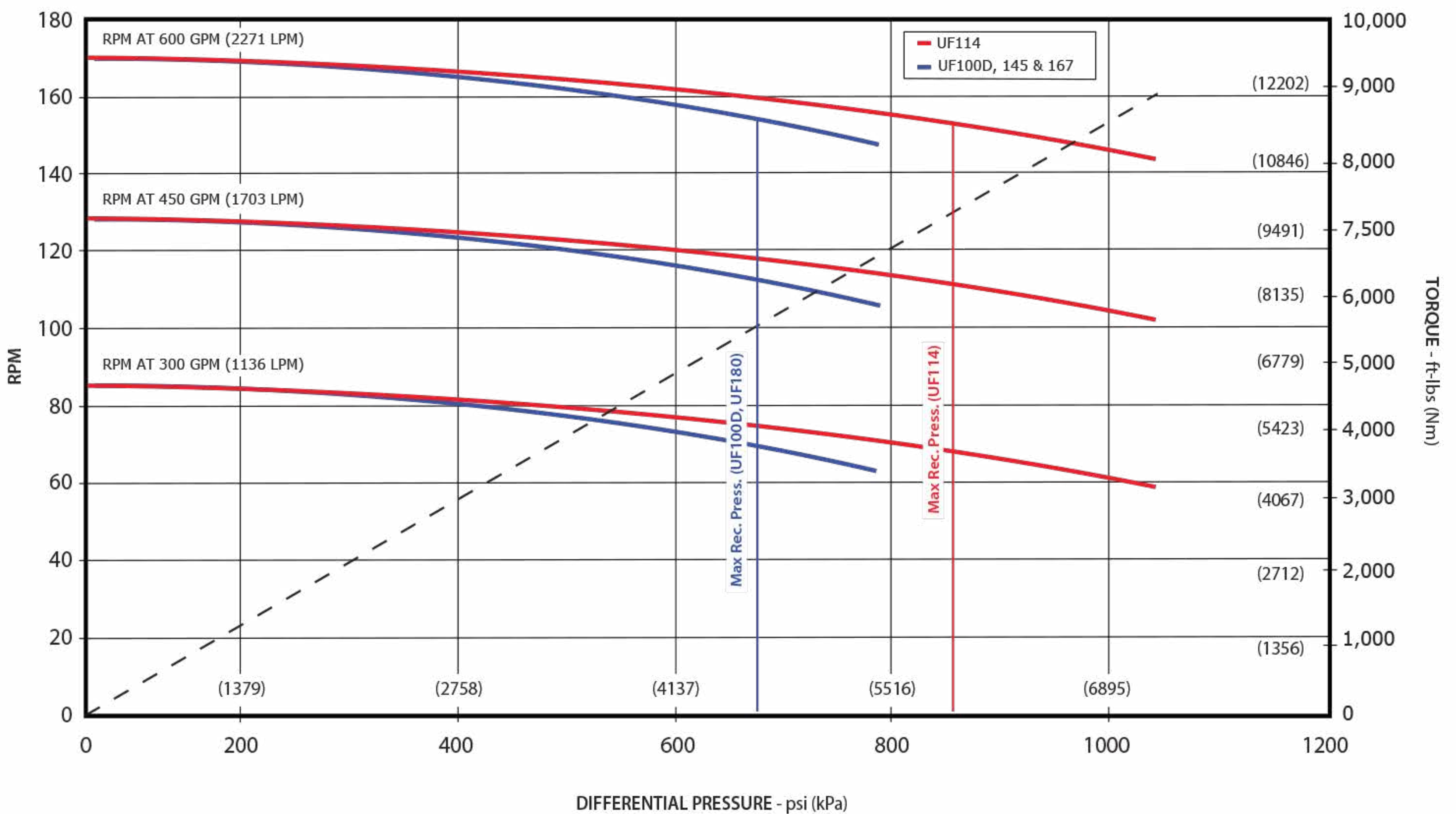


6-3/4" MOTOR SPECIFICATIONS

6-3/4" 6:7 Lobe 5.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)					
BEND	SLICK			ONE STABILIZER*	
SETTING	HOLE SIZE			HOLE SIZE	
(DEGREES)	8-1/2	8-3/4	9-7/8	8-1/2	8-3/4
0.39	1.15	0.48	-	2.90	3.11
0.78	4.13	3.47	0.49	5.43	5.64
1.15	6.96	6.30	3.32	7.83	8.04
1.50	9.65	8.98	6.00	10.11	10.31
1.83	12.17	11.51	8.53	12.24	12.46
2.12	14.40	13.74	10.75	14.11	14.33
2.38	(16.37)	15.74	12.73	15.83	16.01
2.60	(18.08)	17.42	14.43	(17.26)	17.47
2.77	(19.36)	18.73	15.74	(18.37)	18.54
2.90	(20.39)	(19.69)	16.71	(19.16)	(19.42)
2.97	(20.91)	(20.25)	17.26	(19.62)	(19.83)
3.00	(21.14)	(20.46)	17.47	(19.69)	(19.90)

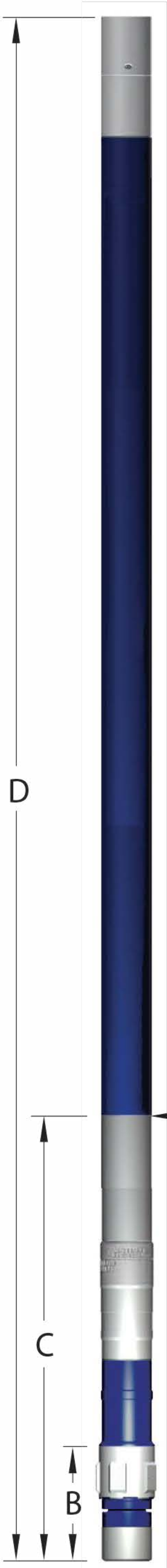
() STATOR CONTACT; CONFIGURATION UNSTABLE * 1/8" UNDER GAGE





6-3/4" MOTOR SPECIFICATIONS

6-3/4" 7:8 Lobe 5.0 Stage

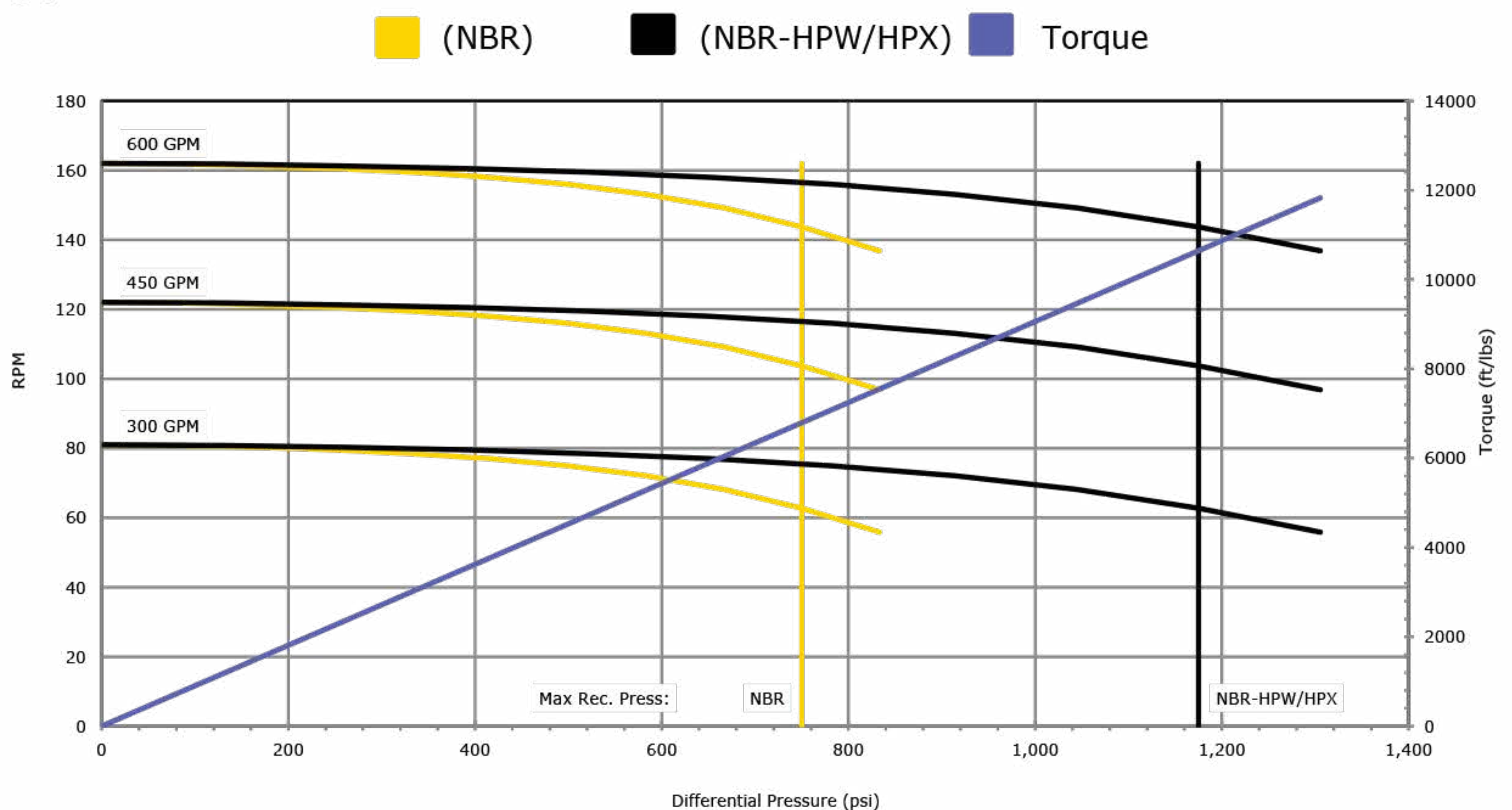


Bearing Data	
Description	High Performance Mud-Luricated Bearing Section
Tool OD (in)	6.90 Slick Bearing Housing 7.63 Thread Protector 6.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	3.84
B Bit to Stabilizer Length	30.5 in (2.5 ft)
C Bit to Bend Length	74" (6.2 ft)
Bit Box Connection	4-1/2 Reg Box
D Overall Length	322

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	400,000 lbs
Absolute Overpull	600,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	750	1180
Stall Diff Press (psi)	1130	1860
Max Torque (ft-lb)	6800	10650
Stall Torque (ft-lb)	10200	16770

Performance Specifications	
Flow Range (gpm)	300 - 600
Speed Range (rpm)	80 - 160
Torque Slope (ft-lb/psi)	9.06
Rotation (rev/gal)	0.270
Off Bottom Pressure (psi)	100



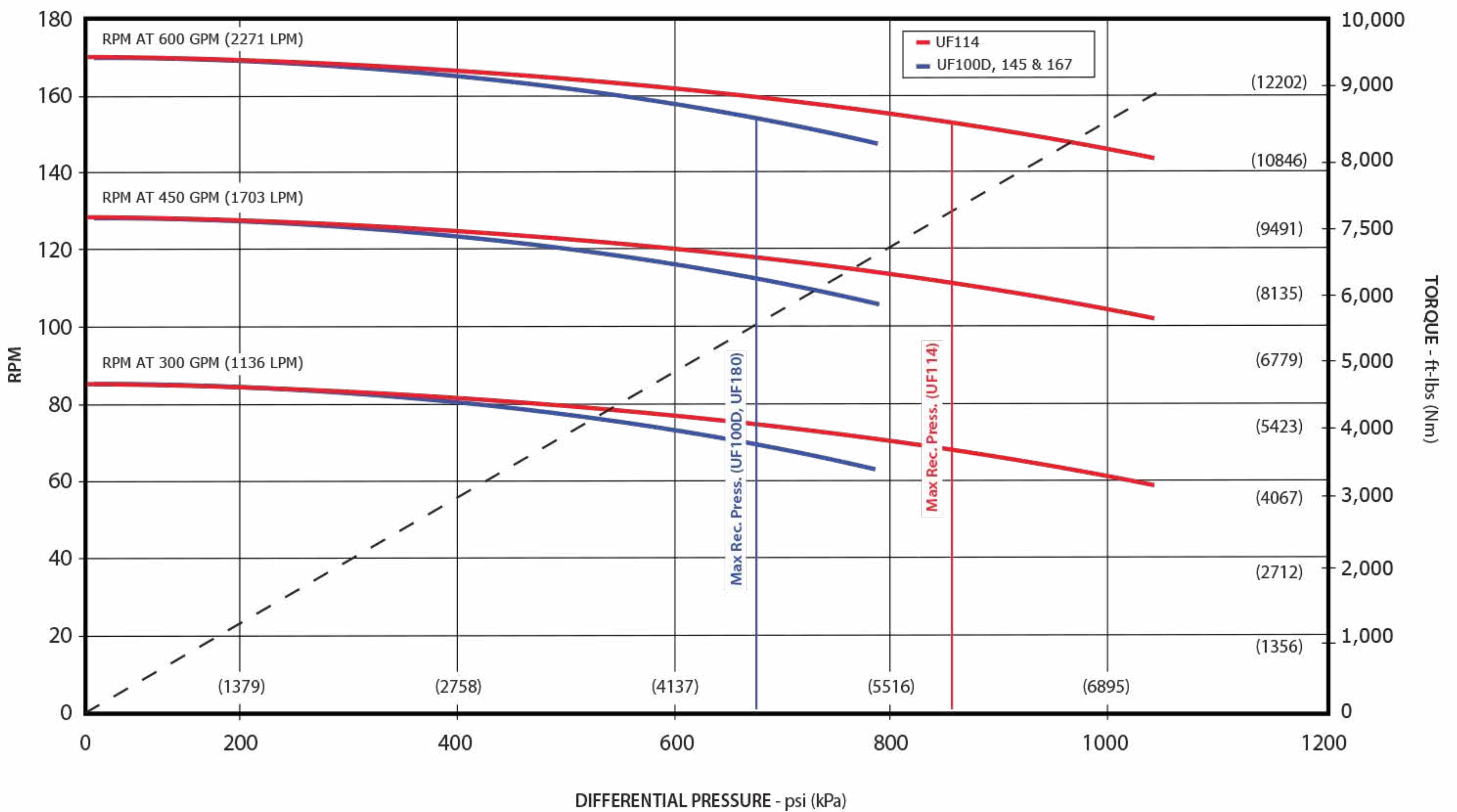


6-3/4" MOTOR SPECIFICATIONS

6-3/4" 7:8 Lobe 5.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)					
BEND	SLICK			ONE STABILIZER*	
SETTING	HOLE SIZE			HOLE SIZE	
(DEGREES)	8-1/2	8-3/4	9-7/8	8-1/2	8-3/4
0.39	1.15	0.48	-	2.90	3.11
0.78	4.13	3.47	0.49	5.43	5.64
1.15	6.96	6.30	3.32	7.83	8.04
1.50	9.65	8.98	6.00	10.11	10.31
1.83	12.17	11.51	8.53	12.24	12.46
2.12	14.40	13.74	10.75	14.11	14.33
2.38	(16.37)	15.74	12.73	15.83	16.01
2.60	(18.08)	17.42	14.43	(17.26)	17.47
2.77	(19.36)	18.73	15.74	(18.37)	18.54
2.90	(20.39)	(19.69)	16.71	(19.16)	(19.42)
2.97	(20.91)	(20.25)	17.26	(19.62)	(19.83)
3.00	(21.14)	(20.46)	17.47	(19.69)	(19.90)

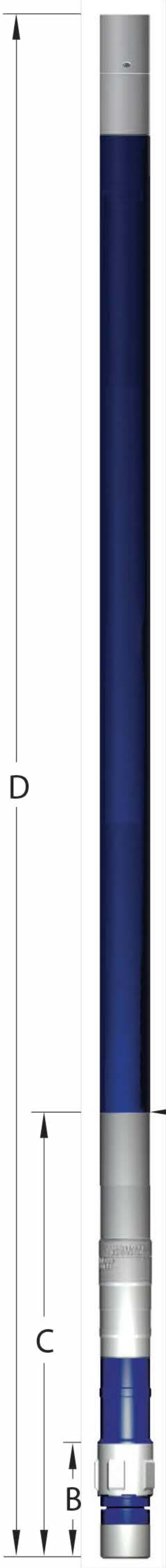
() STATOR CONTACT; CONFIGURATION UNSTABLE * 1/8" UNDER GAGE





6-3/4" MOTOR SPECIFICATIONS

6-3/4" 7:8 Lobe 5.7 Stage

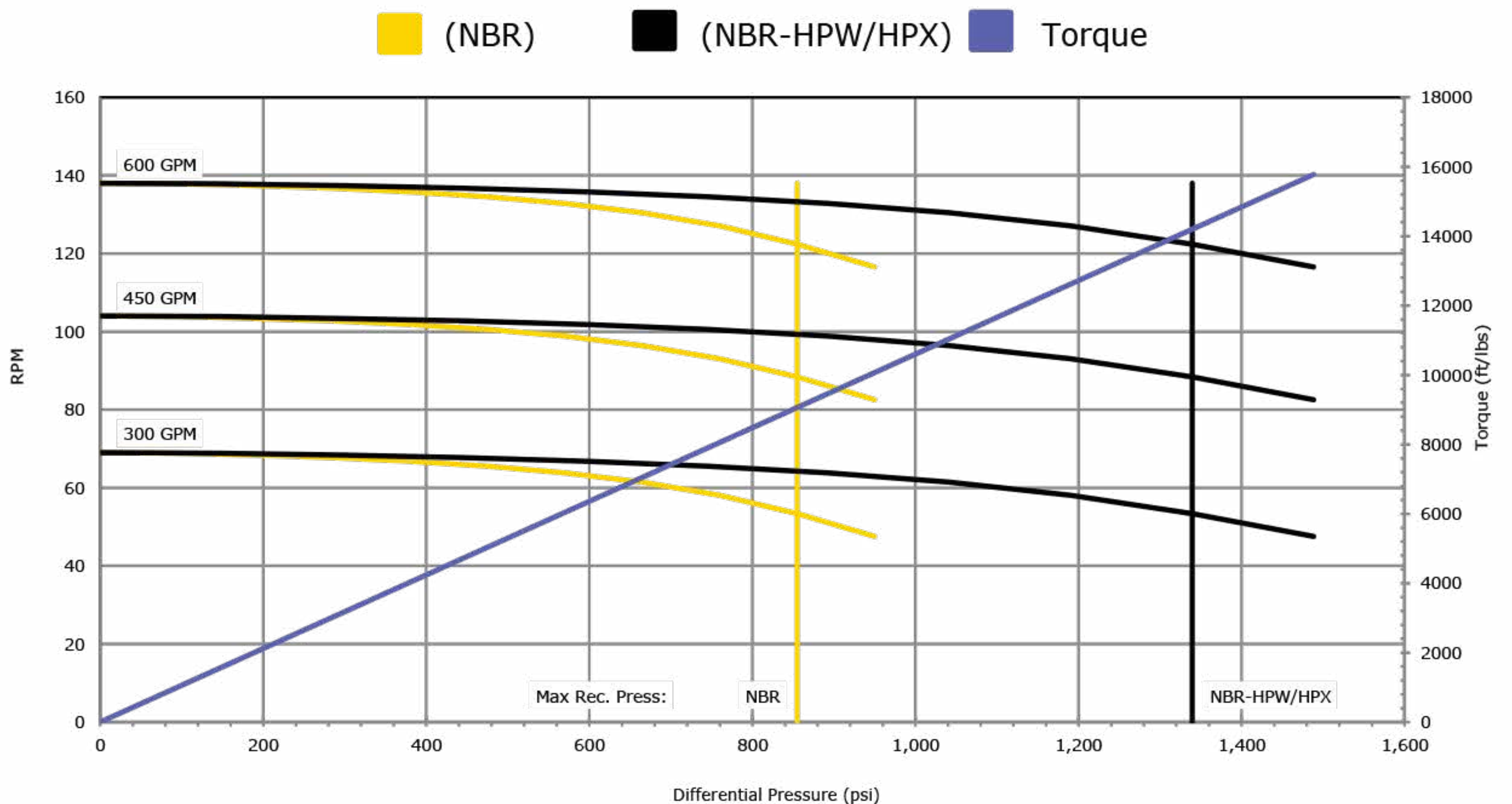


Bearing Data	
Description	High Performance Mud-Luricated Bearing Section
Tool OD (in)	6.90 Slick Bearing Housing 7.63 Thread Protector 6.75 U-joint Housing and above
A Radius of Bend Housing Pad (in)	3.84
B Bit to Stabilizer Length	30.5 in (2.5 ft)
C Bit to Bend Length	74" (6.2 ft)
Bit Box Connection	4-1/2 Reg Box
D Overall Length	387.50

Technical Specifications	
Maximum WOB	170,000 lbs
Maximum Overpull to Re-Run	400,000 lbs
Absolute Overpull	600,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	860	1340
Stall Diff Press (psi)	1290	2110
Max Torque (ft-lb)	9070	14200
Stall Torque (ft-lb)	13600	22370

Performance Specifications	
Flow Range (gpm)	300 - 600
Speed Range (rpm)	70 - 140
Torque Slope (ft-lb/psi)	10.60
Rotation (rev/gal)	0.230
Off Bottom Pressure (psi)	100



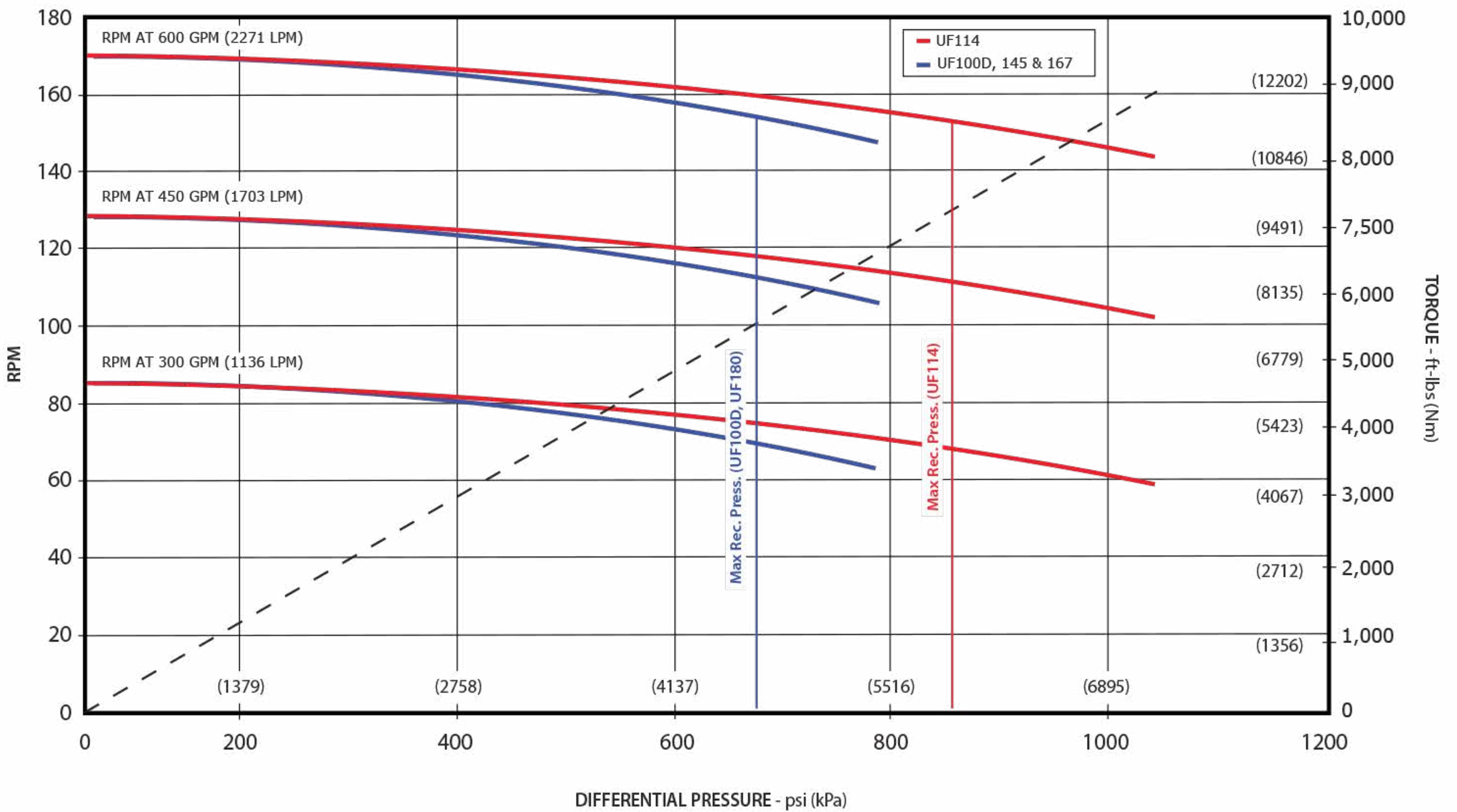


6-3/4" MOTOR SPECIFICATIONS

6-3/4" 7:8 Lobe 5.7 Stage

Predicted Build Rates Degrees/100 Ft. (30m)					
BEND	SLICK			ONE STABILIZER*	
SETTING	HOLE SIZE			HOLE SIZE	
(DEGREES)	8-1/2	8-3/4	9-7/8	8-1/2	8-3/4
0.39	1.15	0.48	-	2.90	3.11
0.78	4.13	3.47	0.49	5.43	5.64
1.15	6.96	6.30	3.32	7.83	8.04
1.50	9.65	8.98	6.00	10.11	10.31
1.83	12.17	11.51	8.53	12.24	12.46
2.12	14.40	13.74	10.75	14.11	14.33
2.38	(16.37)	15.74	12.73	15.83	16.01
2.60	(18.08)	17.42	14.43	(17.26)	17.47
2.77	(19.36)	18.73	15.74	(18.37)	18.54
2.90	(20.39)	(19.69)	16.71	(19.16)	(19.42)
2.97	(20.91)	(20.25)	17.26	(19.62)	(19.83)
3.00	(21.14)	(20.46)	17.47	(19.69)	(19.90)

() STATOR CONTACT; CONFIGURATION UNSTABLE * 1/8" UNDER GAGE



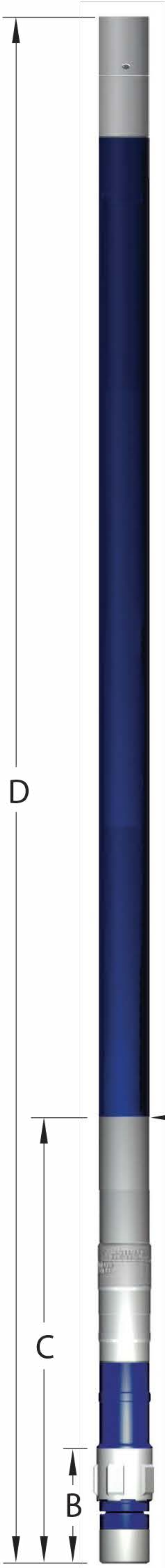
8" - 9 5/8" COMBO

MOTORS



8" MOTOR SPECIFICATIONS

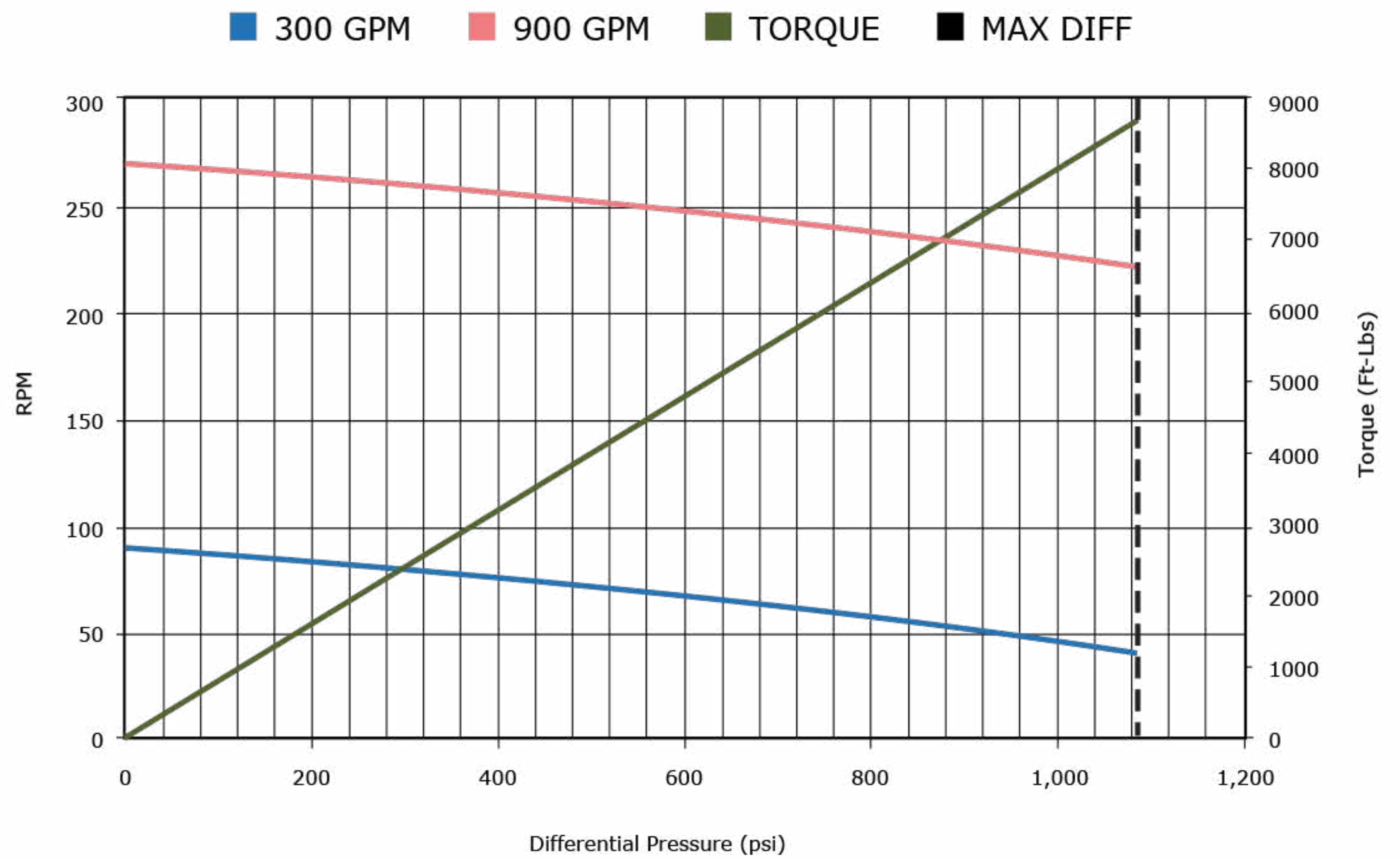
8" 5:6 Lobe 5.0 Stage



Bearing Data		
	Description	High Performance Motor
	Tool OD (in)	9.50 Thread Protector (Wear Band) 8.00 U-joint Housing and above
A	Radius of Bend Housing Pad (in)	4.525
B	Bit to Stabilizer Length	39.6 in (3.3 ft)
C	Bit to Bend Length	95" (7.9 ft)
	Bit Box Connection	6-5/8 Reg Box
D	Overall Length	311

Technical Specifications		
	Maximum WOB	260,000 lbs
	Maximum Overpull to Re-Run	500,000 lbs
	Absolute Overpull	800,000 lbs

Recommended Operating Range		
Flow Rate	300 gpm - 900 gpm	
No Load RPM	90-270	
Displacement	0.3 revs/gal	
Max Working Pressure	1085 psi	
Max Off-BTM Pressure	137 psi	
Max Operating Torque	8300 ft-lbs	
Torque Slope	7.973 ft-lbs/psi	
Max Operating pressure = Max Working psi - Max Off-BTM psi		
For Maximum Life do not exceed 948 psi differential		



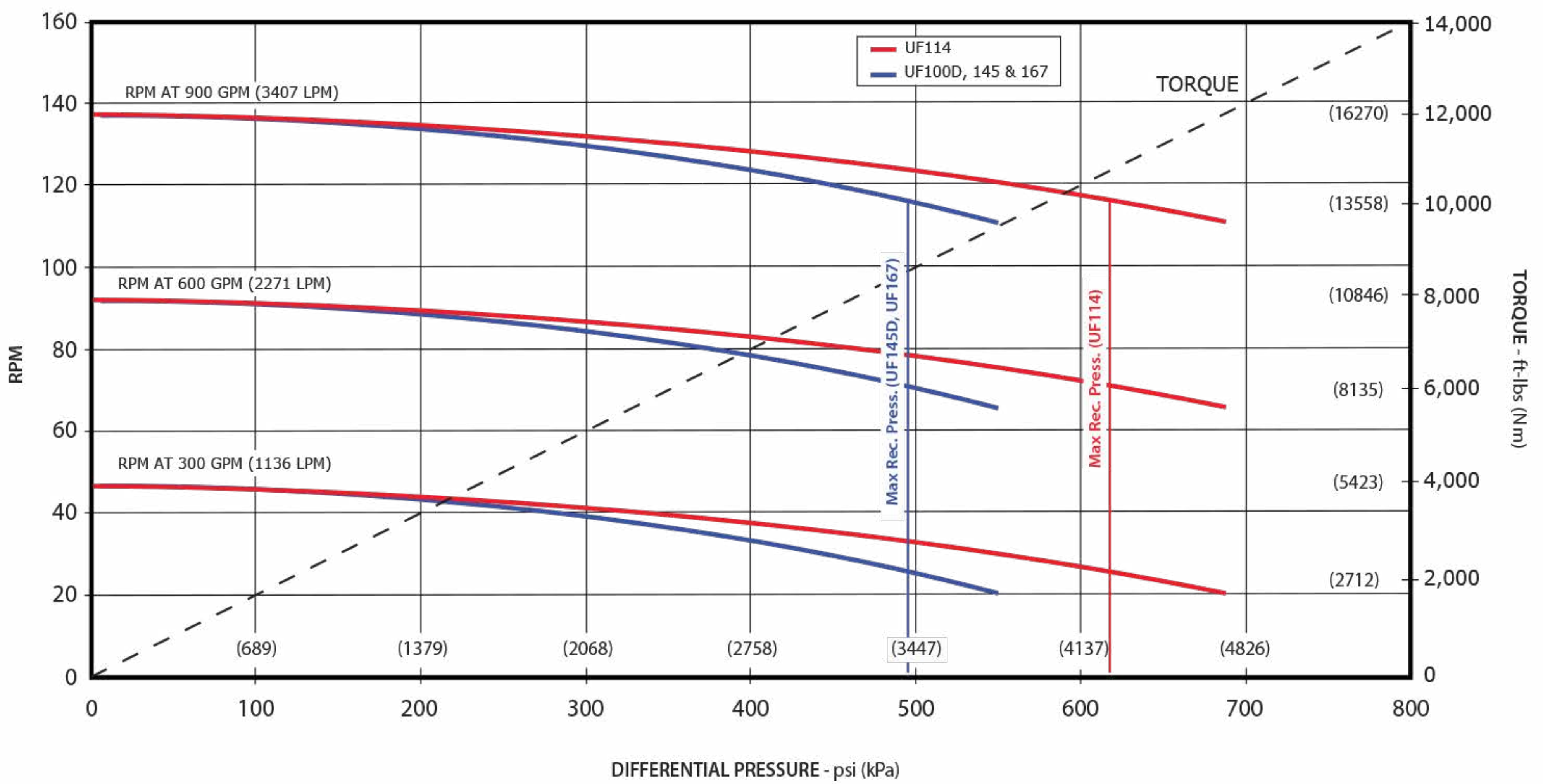


8" MOTOR SPECIFICATIONS

8" 5:6 Lobe 5.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)						
BEND SETTING (DEGREES)	SLICK			SINGLE STABILIZER		
	HOLE SIZE			HOLE SIZE		
	9-7/8	10-5/8	12-1/4	9-7/8	10-5/8	12-1/4
0.39	2.1	-	-	2.1	3.8	5.3
0.78	5.2	3.7	-	5.2	6.2	7.7
1.15	8.2	6.7	3.4	8.2	8.5	10.0
1.50	11.0	9.5	6.2	11.0	10.6	12.2
1.83	13.6	12.1	8.8	13.6	12.7	14.2
2.12	15.9	14.4	11.1	15.9	14.5	16.0
2.38	18.0	16.5	13.2	18.0	16.5	17.6
2.60	19.7	18.2	14.9	19.7	18.2	18.9
2.77	21.1	19.6	16.3	21.1	19.6	20.0
2.90	22.1	20.6	17.3	22.1	20.5	20.8
2.97	22.7	21.2	17.9	22.7	21.2	21.2
3.00	22.9	21.4	18.1	22.9	21.4	21.4

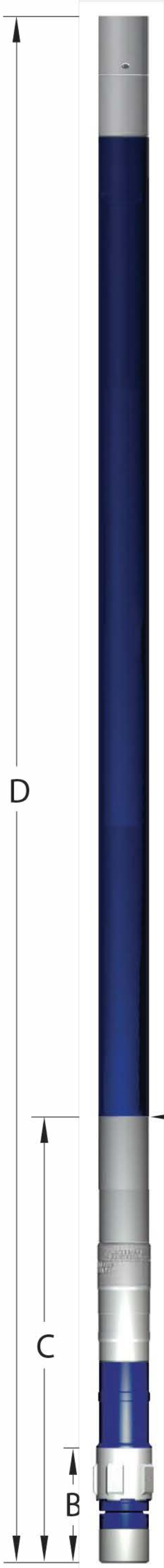
() STATOR CONTACT; CONFIGURATION UNSTABLE





8" MOTOR SPECIFICATIONS

8" 6:7 Lobe 4.0 Stage

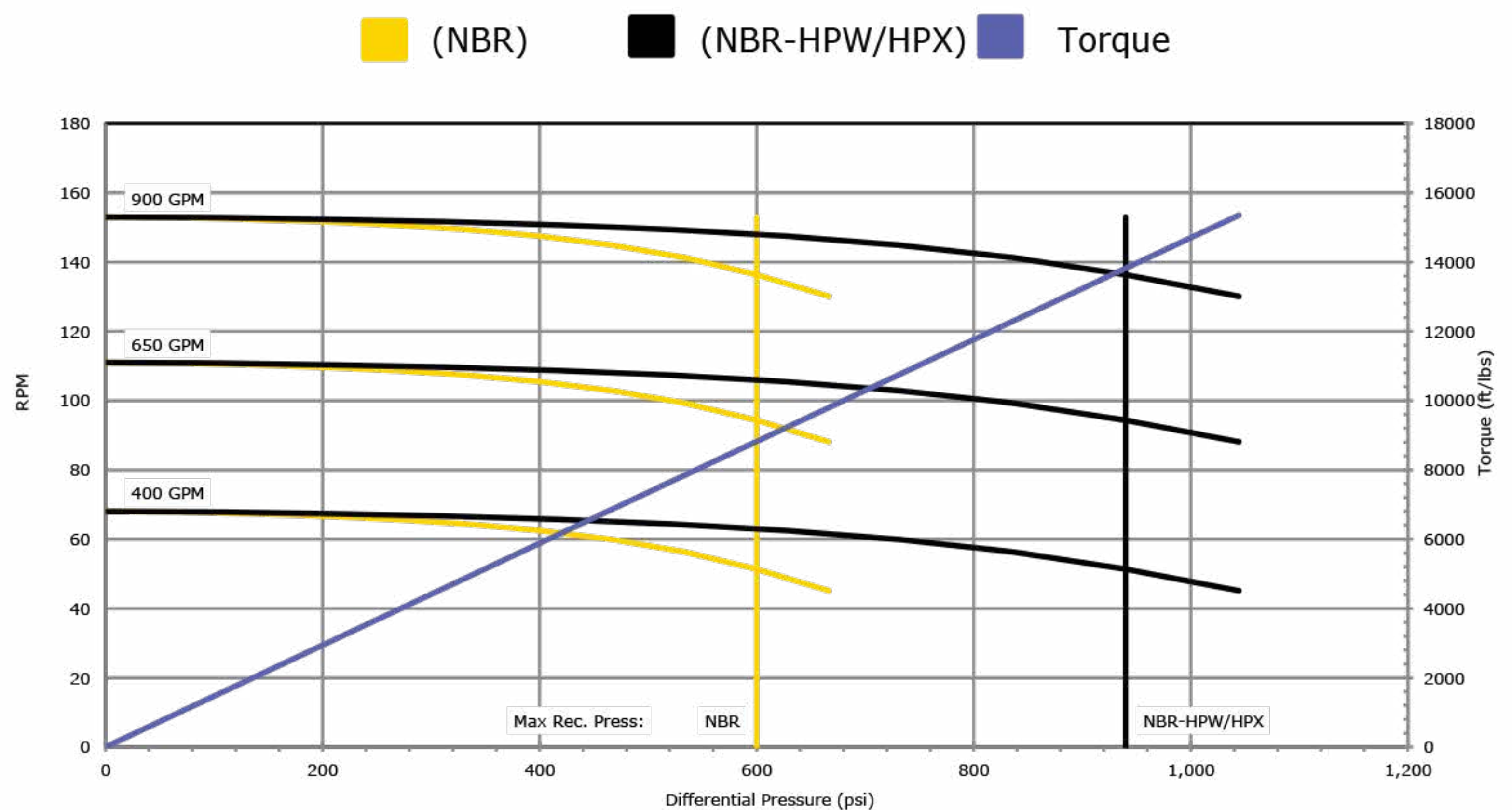


Bearing Data	
Description	High Performance Motor
Tool OD (in)	9.50 Thread Protector (Wear Band) 8.00 U-joint Housing and above
A Radius of Bend Housing Pad (in)	4.525
B Bit to Stabilizer Length	39.6 in (3.3 ft)
C Bit to Bend Length	95" (7.9 ft)
Bit Box Connection	6-5/8 Reg Box
D Overall Length	349

Technical Specifications	
Maximum WOB	260,000 lbs
Maximum Overpull to Re-Run	500,000 lbs
Absolute Overpull	800,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	600	940
Stall Diff Press (psi)	900	1490
Max Torque (ft-lb)	8820	13820
Stall Torque (ft-lb)	13230	21770

Performance Specifications	
Flow Range (gpm)	400 - 900
Speed Range (rpm)	70 - 150
Torque Slope (ft-lb/psi)	14.70
Rotation (rev/gal)	0.170
Off Bottom Pressure (psi)	110



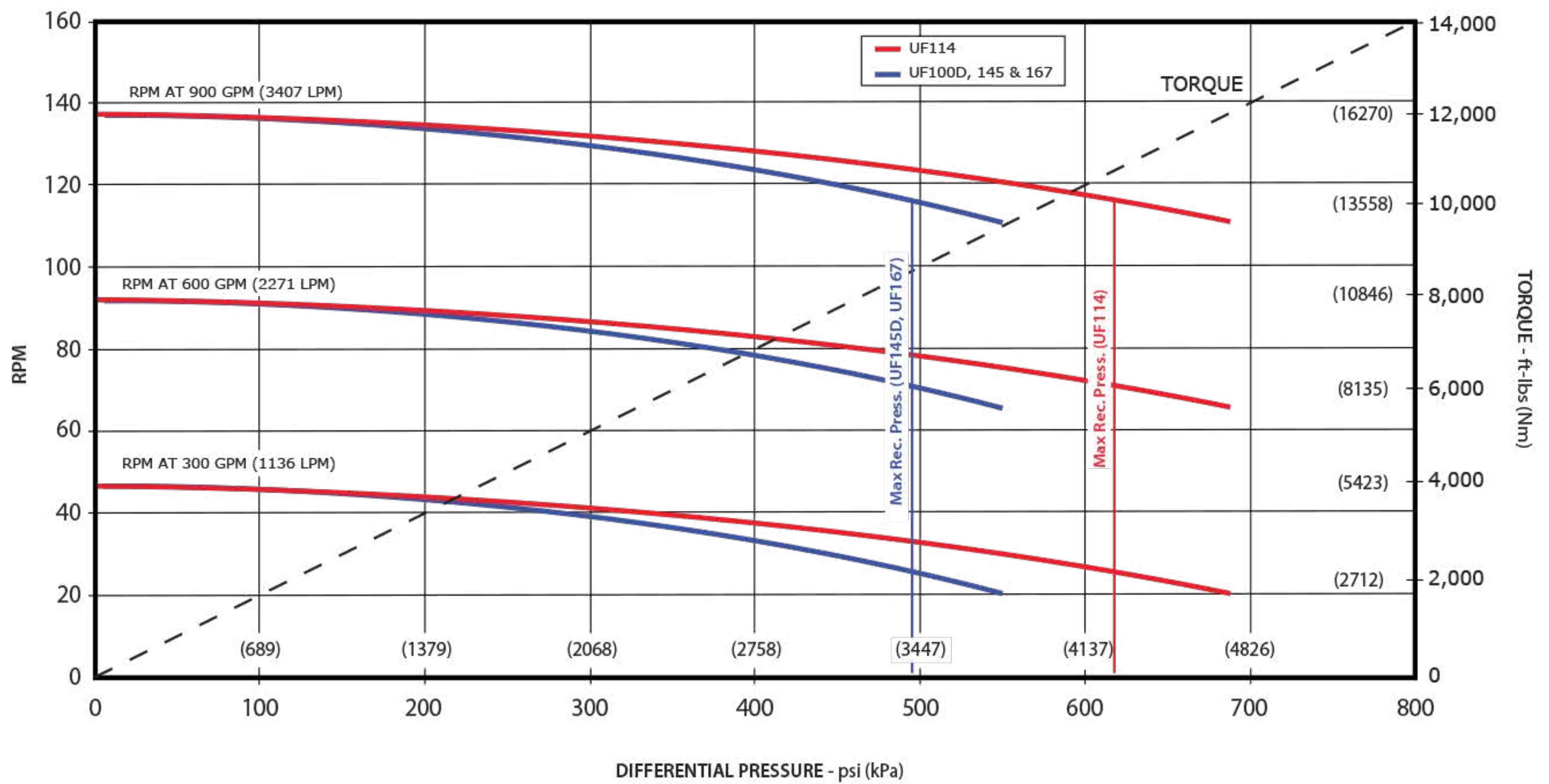


8" MOTOR SPECIFICATIONS

8" 6:7 Lobe 4.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)						
BEND SETTING (DEGREES)	SLICK			SINGLE STABILIZER		
	HOLE SIZE			HOLE SIZE		
	9-7/8	10-5/8	12-1/4	9-7/8	10-5/8	12-1/4
0.39	2.1	-	-	2.1	3.8	5.3
0.78	5.2	3.7	-	5.2	6.2	7.7
1.15	8.2	6.7	3.4	8.2	8.5	10.0
1.50	11.0	9.5	6.2	11.0	10.6	12.2
1.83	13.6	12.1	8.8	13.6	12.7	14.2
2.12	15.9	14.4	11.1	15.9	14.5	16.0
2.38	18.0	16.5	13.2	18.0	16.5	17.6
2.60	19.7	18.2	14.9	19.7	18.2	18.9
2.77	21.1	19.6	16.3	21.1	19.6	20.0
2.90	22.1	20.6	17.3	22.1	20.5	20.8
2.97	22.7	21.2	17.9	22.7	21.2	21.2
3.00	22.9	21.4	18.1	22.9	21.4	21.4

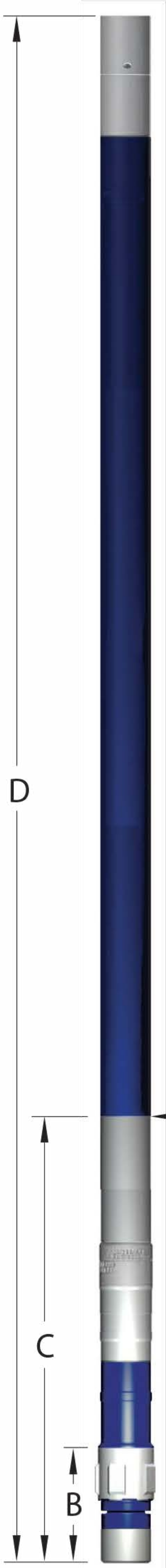
() STATOR CONTACT; CONFIGURATION UNSTABLE





8" MOTOR SPECIFICATIONS

8" 7:8 Lobe 4.0 Stage

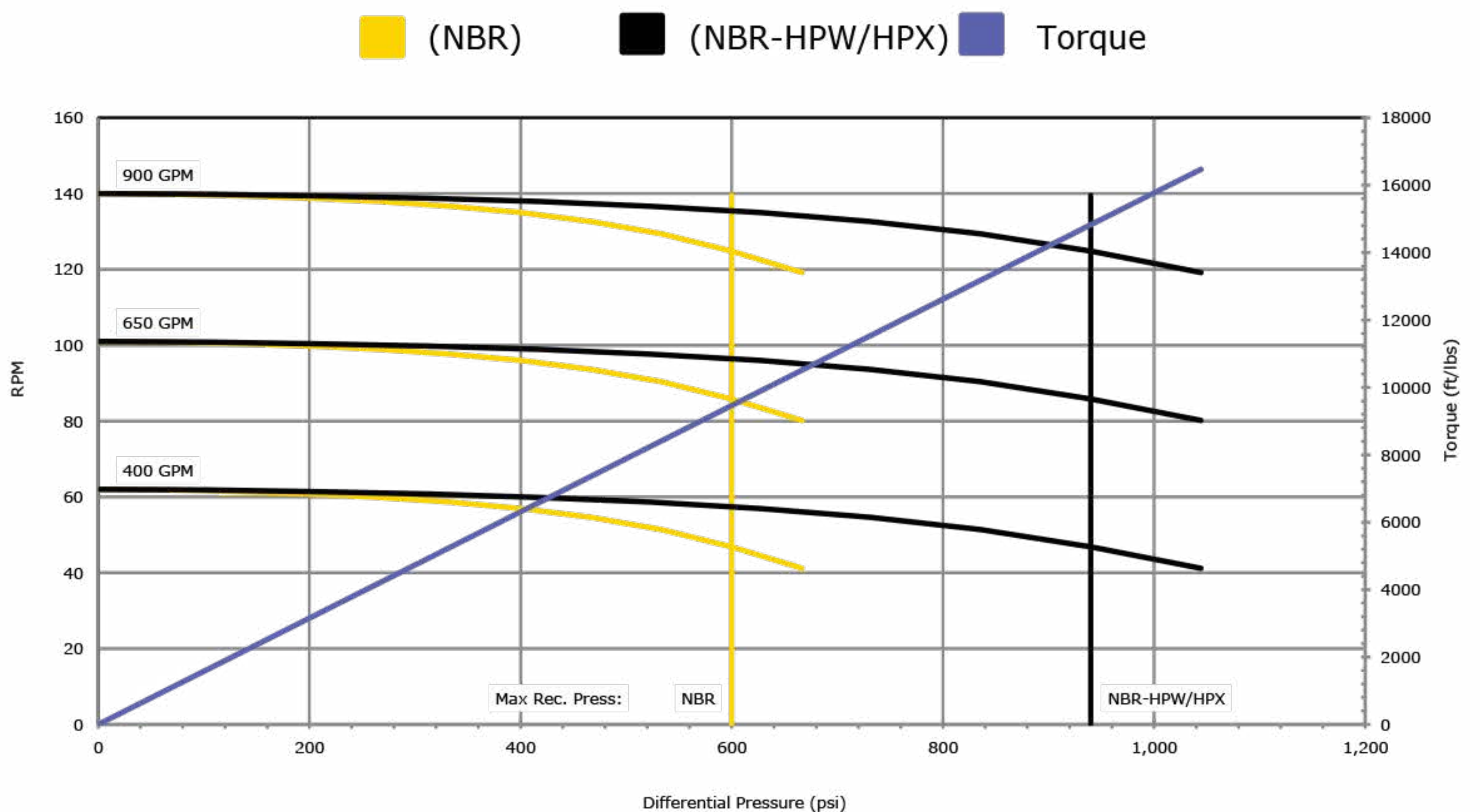


Bearing Data	
Description	High Performance Motor
Tool OD (in)	9.50 Thread Protector (Wear Band) 8.00 U-joint Housing and above
A Radius of Bend Housing Pad (in)	4.525
B Bit to Stabilizer Length	39.6 in (3.3 ft)
C Bit to Bend Length	95" (7.9 ft)
Bit Box Connection	6-5/8 Reg Box
D Overall Length	346.25

Technical Specifications	
Maximum WOB	260,000 lbs
Maximum Overpull to Re-Run	500,000 lbs
Absolute Overpull	800,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	600	940
Stall Diff Press (psi)	900	1490
Max Torque (ft-lb)	9470	14830
Stall Torque (ft-lb)	14200	23350

Performance Specifications	
Flow Range (gpm)	400 - 900
Speed Range (rpm)	60 - 140
Torque Slope (ft-lb/psi)	15.77
Rotation (rev/gal)	0.155
Off Bottom Pressure (psi)	100



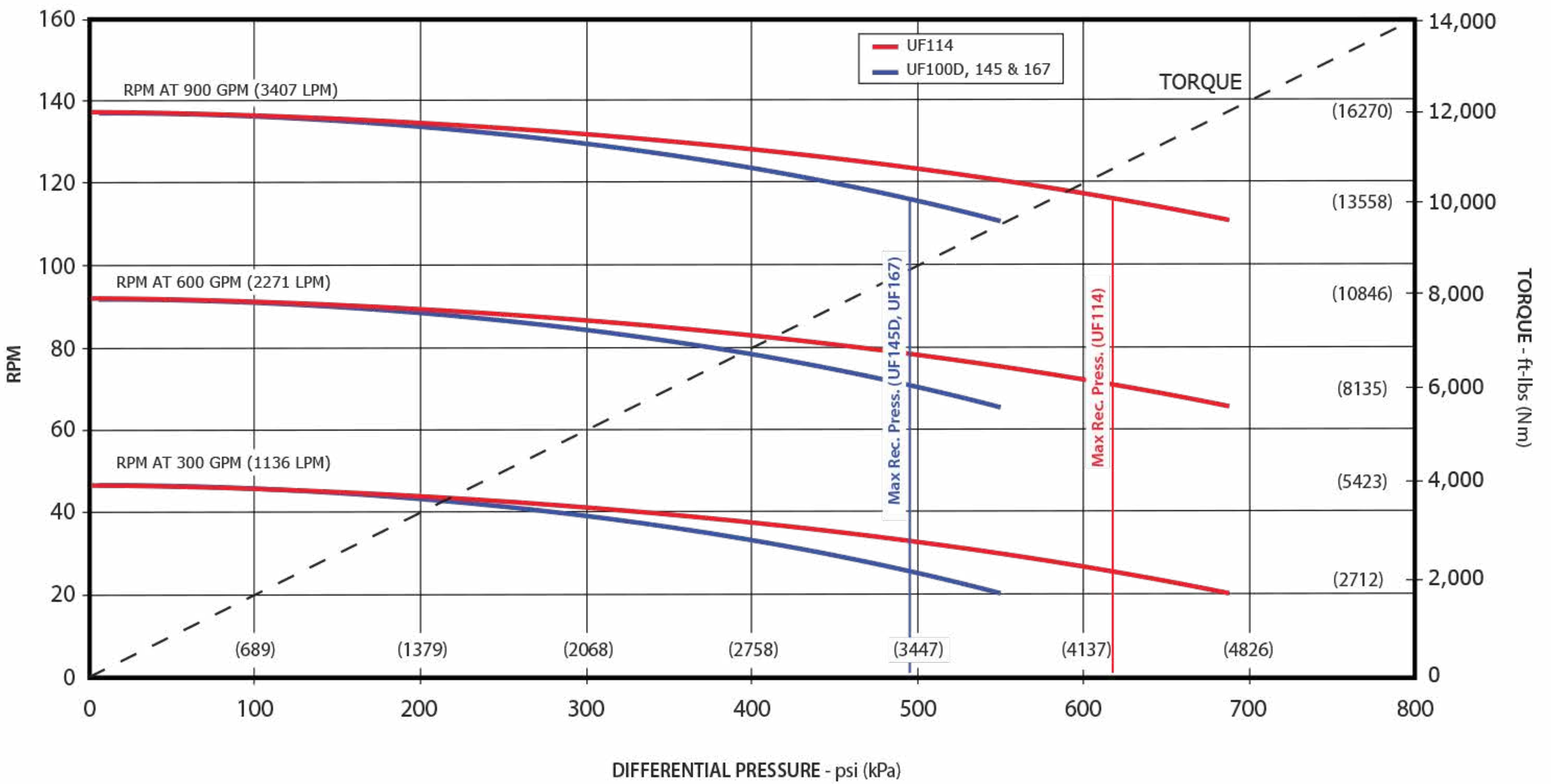


8" MOTOR SPECIFICATIONS

8" 7:8 Lobe 4.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m)						
BEND	SLICK			SINGLE STABILIZER		
SETTING	HOLE SIZE			HOLE SIZE		
(DEGREES)	9-7/8	10-5/8	12-1/4	9-7/8	10-5/8	12-1/4
0.39	2.1	-	-	2.1	3.8	5.3
0.78	5.2	3.7	-	5.2	6.2	7.7
1.15	8.2	6.7	3.4	8.2	8.5	10.0
1.50	11.0	9.5	6.2	11.0	10.6	12.2
1.83	13.6	12.1	8.8	13.6	12.7	14.2
2.12	15.9	14.4	11.1	15.9	14.5	16.0
2.38	18.0	16.5	13.2	18.0	16.5	17.6
2.60	19.7	18.2	14.9	19.7	18.2	18.9
2.77	21.1	19.6	16.3	21.1	19.6	20.0
2.90	22.1	20.6	17.3	22.1	20.5	20.8
2.97	22.7	21.2	17.9	22.7	21.2	21.2
3.00	22.9	21.4	18.1	22.9	21.4	21.4

() STATOR CONTACT; CONFIGURATION UNSTABLE



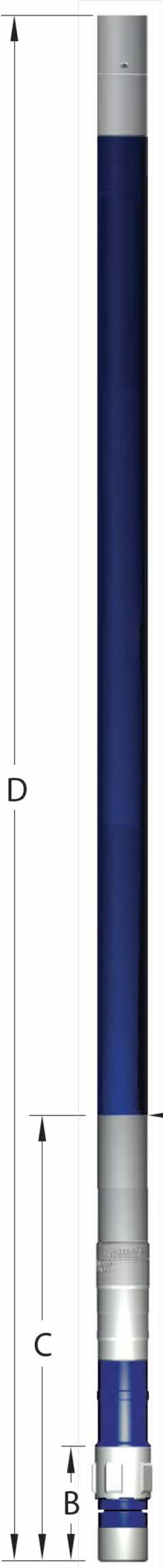
9 5/8"

MOTORS



9-5/8" MOTOR SPECIFICATIONS

9-5/8" 5:6 Lobe 4.0 Stage

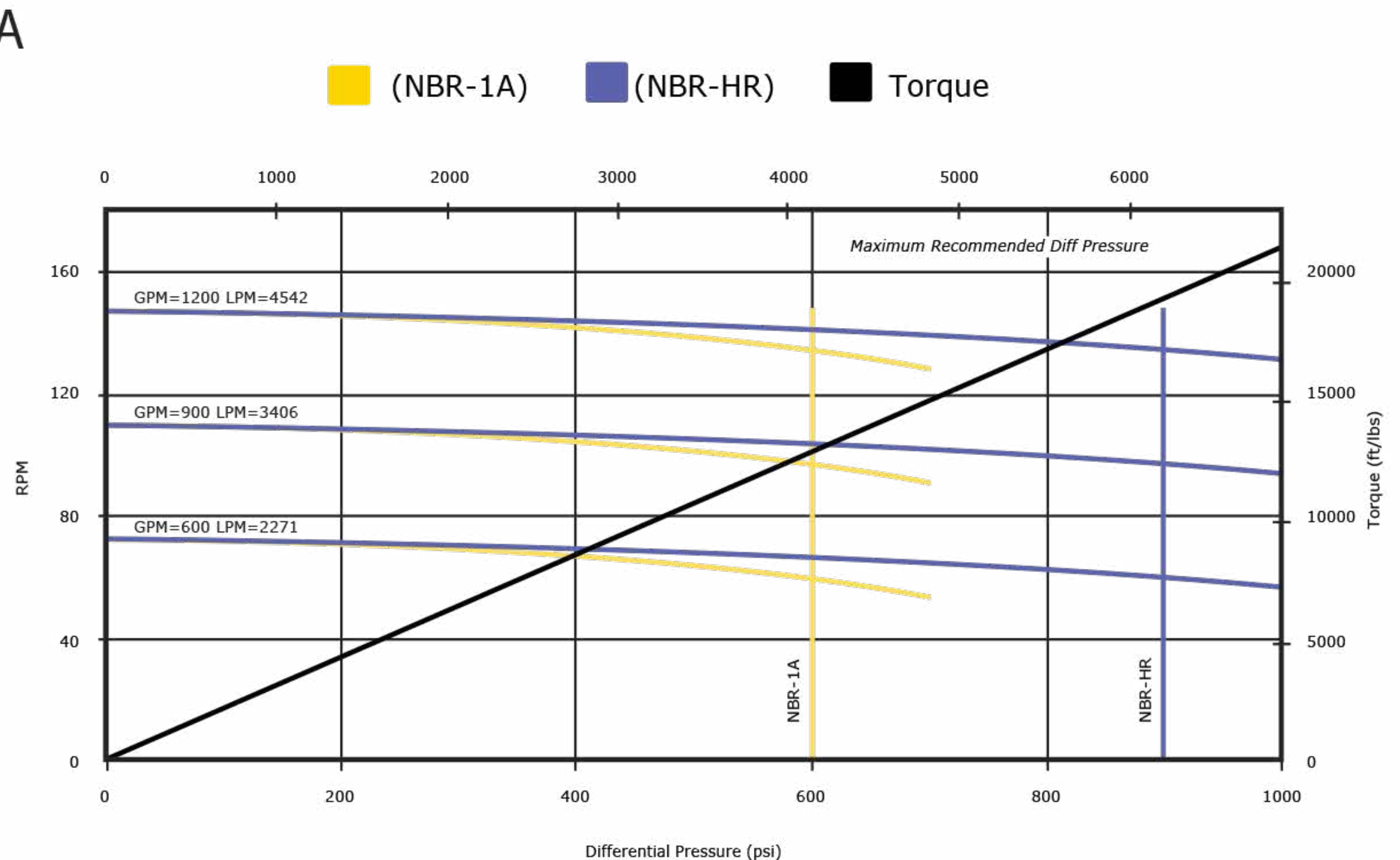


Bearing Data		
	Description	High Performance Mud-Luricated Bearing Section
	Tool OD (in)	10.75 at Bearing Housing
A	Radius of Bend Housing Pad (in)	5.40 Adjustable, 5.256 Fixed
B	Bit to Stabilizer Length	54.6
C	Bit to Bend Length	116.78" (9' 8.78") Adjustable 109.0 (9'0") Fixed
	Bit Box Connection	7-5/8 Reg Box
D	Overall Length	409.9

Technical Specifications		
	Maximum WOB	500,000 lbs
	Maximum Overpull to Re-Run	900,000 lbs
	Absolute Overpull	1,300,000 lbs

Performance Details		
	NBR-1A	NBR-HR
Max Diff Press (psi)	600	900
Stall Diff Press (psi)	900	1350
Max Torque (ft-lb)	12820	19240
Stall Torque (ft-lb)	19240	28850

Performance Specifications		
Flow Range (gpm)	600 - 1200	
Speed Range (rpm)	73 - 150	
Torque Slope (ft-lb/psi)	21.373	
Rotation (rev/gal)	0.122	
Off Bottom Pressure (psi)	177	





9-5/8" MOTOR SPECIFICATIONS

9-5/8" 5:6 Lobe 4.0 Stage

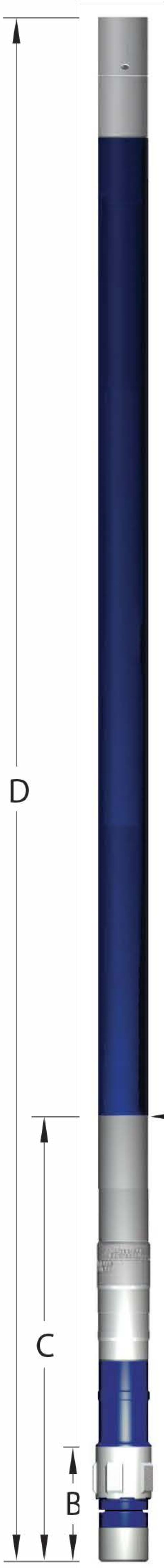
Predicted Build Rates Degrees/100 Ft. (30m) 5/6 4.0 Stage						
BEND	SLICK			ONE STABILIZER*		
SETTING	HOLE SIZE			HOLE SIZE		
(DEGREES)	12-1/4	14-1/2	17-1/2	12-1/4	14-3/4	14-3/4
0.39	0.9	-	-	2.6	3.5	4.9
0.78	3.2	-	-	4.5	5.4	6.8
1.15	5.5	2.1	-	6.4	7.2	8.6
1.50	7.6	4.2	0.5	8.1	8.9	10.3
1.83	9.7	6.3	2.5	9.7	10.5	11.9
2.12	11.4	8.0	4.3	11.4	11.9	13.3
2.38	13.0	9.6	5.9	13.0	13.2	14.6
2.60	14.4	11.0	7.2	14.4	14.3	15.6
2.77	15.4	12.0	8.3	15.4	15.1	16.5
2.90	16.2	12.8	9.1	16.2	15.7	17.1
2.97	16.6	13.2	9.5	16.6	16.1	17.4
3.00	16.8	13.4	9.7	16.8	16.2	17.6

* 1/8" UNDER GAGE



9-5/8" MOTOR SPECIFICATIONS

9-5/8" 5:6 Lobe 5.0 Stage

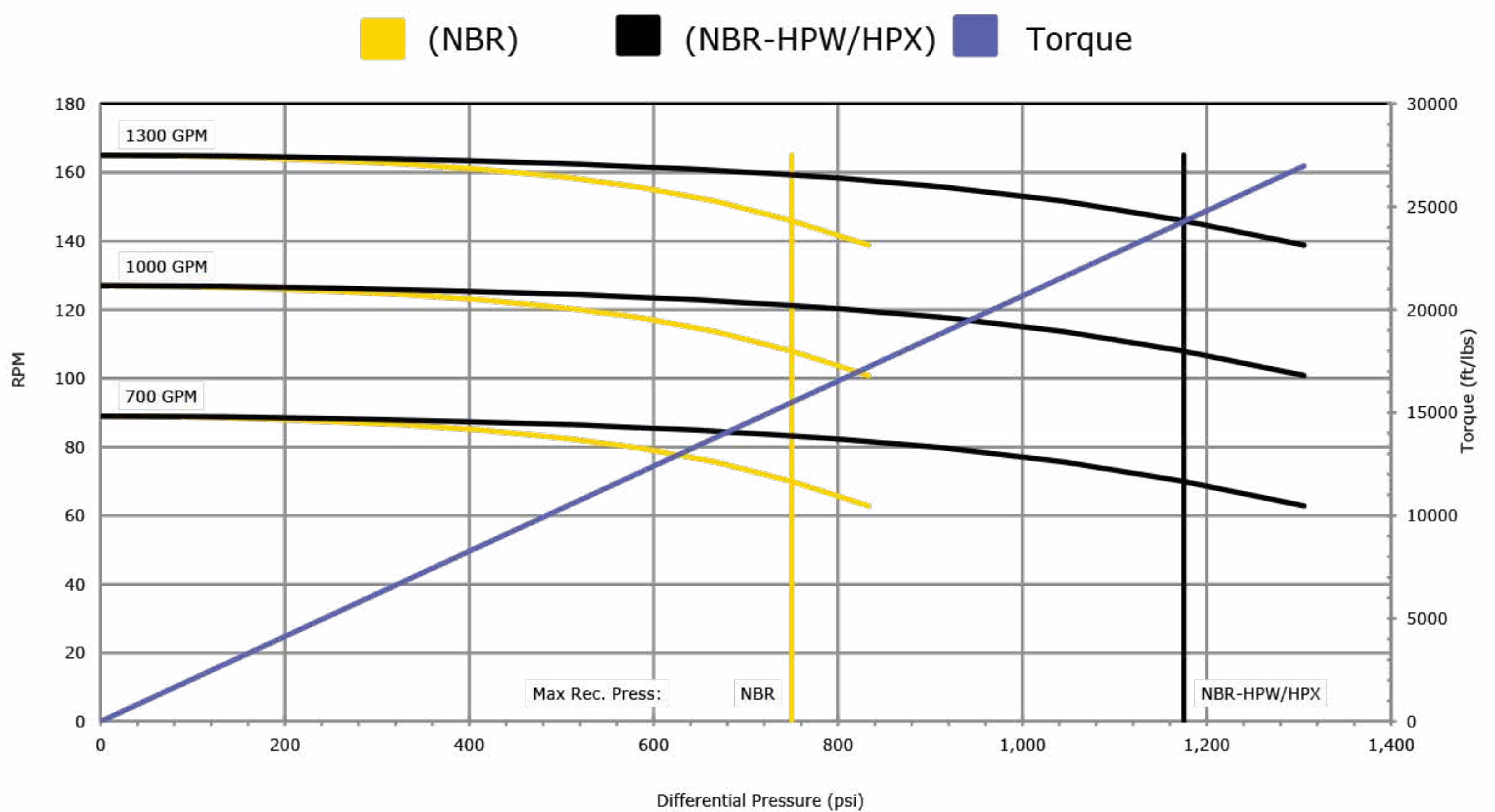


Bearing Data	
Description	High Performance Mud-Luricated Bearing Section
Tool OD (in)	10.75 at Bearing Housing
A Radius of Bend Housing Pad (in)	5.40 Adjustable, 5.256 Fixed
B Bit to Stabilizer Length	54.6
C Bit to Bend Length	116.78" (9' 8.78") Adjustable 109.0 (9'0") Fixed
Bit Box Connection	7-5/8 Reg Box
D Overall Length	411.9

Technical Specifications	
Maximum WOB	500,000 lbs
Maximum Overpull to Re-Run	900,000 lbs
Absolute Overpull	1,300,000 lbs

Performance Details		
	NBR	NBR-HPW/HPX
Max Diff Press (psi)	750	1180
Stall Diff Press (psi)	1130	1860
Max Torque (ft-lb)	15510	24290
Stall Torque (ft-lb)	23260	38260

Performance Specifications	
Flow Range (gpm)	700 - 1300
Speed Range (rpm)	90 - 170
Torque Slope (ft-lb/psi)	20.67
Rotation (rev/gal)	0.127
Off Bottom Pressure (psi)	150





9-5/8" MOTOR SPECIFICATIONS

9-5/8" 5:6 Lobe 5.0 Stage

Predicted Build Rates Degrees/100 Ft. (30m) 5/6 4.0 Stage						
BEND SETTING (DEGREES)	SLICK			ONE STABILIZER*		
	HOLE SIZE			HOLE SIZE		
	12-1/4	14-1/2	17-1/2	12-1/4	14-3/4	14-3/4
0.39	0.9	-	-	2.6	3.5	4.9
0.78	3.2	-	-	4.5	5.4	6.8
1.15	5.5	2.1	-	6.4	7.2	8.6
1.50	7.6	4.2	0.5	8.1	8.9	10.3
1.83	9.7	6.3	2.5	9.7	10.5	11.9
2.12	11.4	8.0	4.3	11.4	11.9	13.3
2.38	13.0	9.6	5.9	13.0	13.2	14.6
2.60	14.4	11.0	7.2	14.4	14.3	15.6
2.77	15.4	12.0	8.3	15.4	15.1	16.5
2.90	16.2	12.8	9.1	16.2	15.7	17.1
2.97	16.6	13.2	9.5	16.6	16.1	17.4
3.00	16.8	13.4	9.7	16.8	16.2	17.6

* 1/8" UNDER GAGE



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Motor Size	Lobe & Stages	Flow (gpm)		Motor RPM's		Rev/Gal	Max Diff. PSI	Stall Torque (ft-lb)	Max Torque (ft-lb)	Hole Size (inches)	WOB (lbs)
		Min	Max	Min	Max						
4 3/4"	5-6 8.3	100	300	100	300	1.000	1960	7840	4890	6.0" - 6 3/4"	170,000
4 3/4"	7-8 3.8	100	250	50	140	0.540	900	6500	4130	6.0" - 6 3/4"	170,000
4 3/4"	6-7 8.0	150	350	120	280	0.790	1880	9630	6110	6.0" - 6 3/4"	170,000
4 3/4"	9-10 4.0	100	300	78	234	0.700	1000	158.68 HP	5800	6.0" - 6 3/4"	170,000
6 3/4"	4-5 7.0	300	600	150	300	0.494	1650	13890	8820	7 7/8" - 9 7/8"	170,000
6 3/4"	6-7 5.0	300	600	90	180	0.300	1180	15510	9850	7 7/8" - 9 7/8"	170,000
6 3/4"	7-8 5.0	300	600	80	160	0.270	1180	16770	10650	7 7/8" - 9 7/8"	170,000
6 3/4"	7-8 5.7	300	600	70	140	0.230	1340	22370	14200	7 7/8" - 9 7/8"	170,000
8"	5-6 5.0	300	900	90	270	0.300	1085	137 OFF-BTM psi	8300	9 7/8" - 12 1/4"	260,000
8"	6-7 4.0	400	900	70	150	0.170	940	21770	13820	9 7/8" - 12 1/4"	260,000
8"	7-8 4.0	400	900	60	140	0.155	940	23350	14830	9 7/8" - 12 1/4"	260,000
9 5/8"	5-6 4.0	600	1200	73	150	0.122	900	28850	19240	12 1/4" - 17 1/2"	500,000
9 5/8"	5-6 5.0	700	1300	90	170	0.127	1180	38260	24290	12 1/4" - 17 1/2"	500,000



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