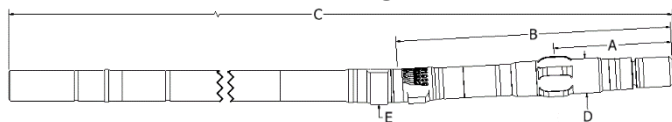


RVEN-86 : 7/8 Lobe 4.0 Stage



Dimensions

Bit to Stabilizer Center	A	NA	in
Bit to Bend, Fixed	B	76	in
Bit to Bend, ABH	B	94	in
Bit to Top Sub	C	375	in
Body OD, Slick	D	8.62	in
Pad Radius, Fixed	E	4.43	in
Pad Radius, ABH	E	4.25	in
Bottom Connection	4-1/2 REG Box 6-5/8 REG Box 4-1/2 IF Pin		
Top Connection	4-1/2 IF Box 4-1/2 XH Box		
Top Sub Float Bore	4R		

Recommended Operating Limits

Max WOB	197,000	lbf
Max Overpull, Backream	285,000	lbf
Max Overpull, Re-Run	286,000	lbf
Max Overpull, POOH	847,000	lbf

Performance Details	HR	XP
Max Diff Pressure	900	1,000
Max Torque	14,930	16,590
Stall Torque	22,400	24,880
Rotation	0.166	0.166
Flow Range	400-900	400-900
Speed Range	66-149	66-149

Predicted Build Rates (Adj.) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8	12 1/4
0.39	1.3	-	-	2.0	2.4	3.2
0.78	3.7	2.5	-	3.9	4.3	5.1
1.15	6.0	4.8	2.2	6.0	6.1	6.8
1.50	8.2	7.0	4.3	8.2	7.7	8.5
1.83	10.2	9.0	6.4	10.2	9.3	10.1
2.12	12.0	10.8	8.2	12.0	10.8	11.5
2.38*	13.6	12.4	9.8	13.6	12.4	12.8
2.60*	14.9	13.7	11.1	14.9	13.7	13.8
2.77*	16.0	14.8	12.2	16.0	14.8	14.6
2.90*	16.8	15.6	13.0	16.8	15.6	15.3
2.97*	17.2	16.0	13.4	17.2	16.0	15.6
3.00*	17.4	16.2	13.6	17.4	16.2	15.7

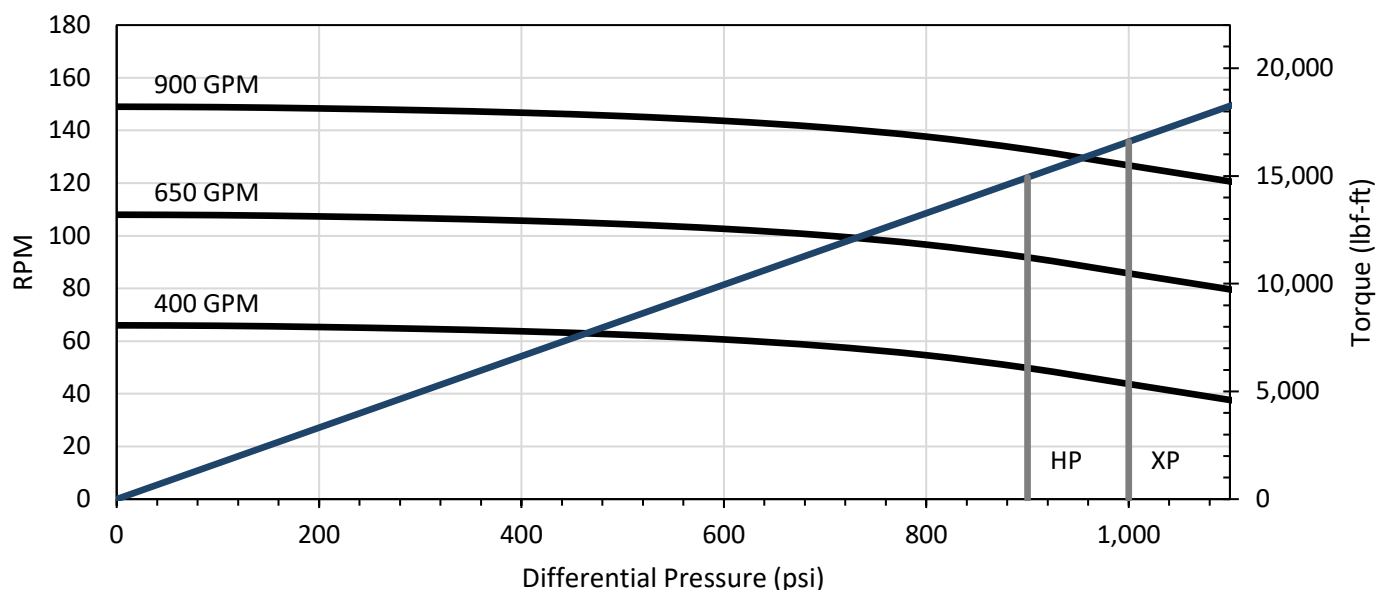
*Bend Setting not recommended for Rotary Drilling

Predicted Build Rates (Fixed) – Degrees/100ft

Bend Setting	Slick Hole Size			Stabilized Hole Size		
Deg	9 7/8	10 5/8	12 1/4	9 7/8	10 5/8	12 1/4
0.78	2.4	-	-	4.1	4.5	5.3
1.15	4.7	3.3	-	6.0	6.4	7.2
1.50	6.9	5.4	2.3	7.8	8.2	9.0
1.75	8.4	6.9	3.8	9.1	9.5	10.3
1.83	8.9	7.4	4.3	9.5	9.9	10.7
2.00	9.9	8.5	5.3	10.4	10.8	11.6
2.12	10.7	9.2	6.1	11.0	11.4	12.2
2.25*	11.5	10.0	6.9	11.7	12.1	12.8
2.38*	12.3	10.8	7.7	12.3	12.7	13.5
2.50*	13.0	11.6	8.4	13.0	13.3	14.1

*Bend Setting not recommended for Rotary Drilling

Theoretical Performance Curve



Performance curves based on testing at 70°F. Actual field performance may vary with field operation conditions.