

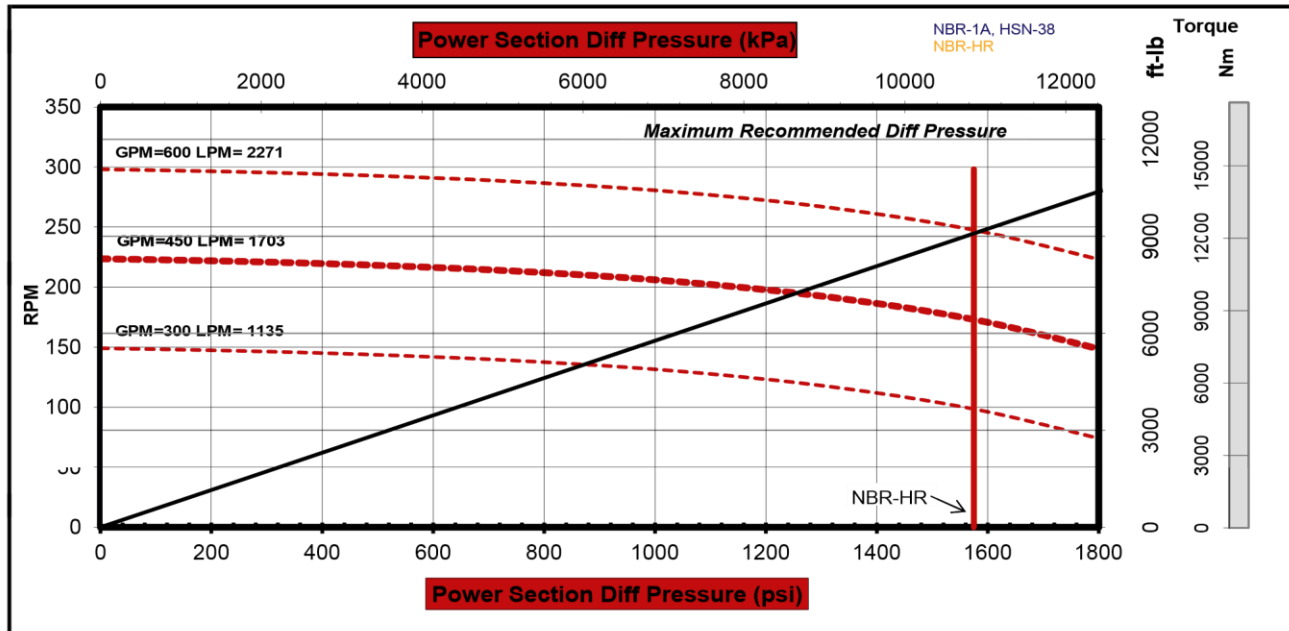


Phone: (307) 232-1234
Fax: (307) 232-1238

SUPERHAWK 650 – 4:5 Profile 7.0 Stage HR - 6 1/2" O.D.

GENERAL DATA			
BIT SIZES	7 7/8" thru 9 7/8"	MAX. WOB – (w/flow)	110,000 lbs
BIT CONNECTION	4 1/2 REG	OPTIMUM WOB - (w/flow)	55,000 Lbs
TOP CONNECTION	4 1/2 XH	MAX. WOB – (w/o flow)	275,000 lbs
TORQUE - CONNECTIONS	18,500 ft-lb	MAX. BIT PULL – (w/damage)	380,000 lbs
TORQUE - ABH	26,500 ft-lb	MAX BODY PULL – (w/damage)	832,000 lbs

PHYSICAL PROPERTIES	
BIT TO BEND LENGTH (ABH)	82.50 in.
BIT TO BEND LENGTH (FIXED)	64.25 in.
NOMINAL LENGTH	330 in.
WEIGHT	2,375 lbs
PERFORMANCE DATA	
FLOW RANGE	300 - 600 gpm
SPEED RANGE	149 - 300 rpm
SPEED RATIO	.497 rev/gal
MAX. DIFFERENTIAL PRESSURE	1050 psi
TORQUE RATIO	5.77 ft-lb/psi
TORQUE AT MAX DIFFERENTIAL	9,090 ft-lbs
STALL TORQUE	13,630 ft-lbs



Angle (Deg)	Hole Size (in) – Slick Sleeve				Hole Size (in) - Stabilized			
	7 7/8"	8 1/2"	8 3/4"	9 7/8"	7 7/8"	8 1/2"	8 3/4"	9 7/8"
0.25	2.5	2.0	1.8		1.5	1.9	2.1	2.8
0.50	3.9	3.4	3.2		3.0	3.4	3.6	4.3
0.75	5.3	4.8	4.6	3.6	4.5	4.9	5.1	5.8
1.00	6.6	6.1	5.9	5.0	6.1	6.5	6.6	7.4
1.25	8.0	7.5	7.3	6.4	7.6	8.0	8.2	8.9
1.50	9.3	8.8	8.6	7.7	9.1	9.5	9.7	10.4
1.75	10.7	10.2	10.0	9.1	10.6	11.0	11.2	11.9
2.00	12.1	11.6	11.4	10.4	12.1	12.6	12.7	13.5
2.25	13.4	12.9	12.7	11.8	13.7	14.1	14.2	15.0
2.50	14.8	14.3	14.1	13.2	15.2	15.6	15.8	16.5
2.75	16.2	15.6	15.4	14.5	16.7	17.1	17.3	18.0
3.00	17.5	17.0	16.8	15.9	18.2	18.7	18.8	19.6

Angle (Deg)	Hole Size (in) – Slick Sleeve				Hole Size (in) - Stabilized			
	7 7/8"	8 1/2"	8 3/4"	9 7/8"	7 7/8"	8 1/2"	8 3/4"	9 7/8"
0.25	1.6	1.4	1.3		1.4	1.8	2.0	2.7
0.50	3.0	2.7	2.6		2.8	3.2	3.4	4.1
0.75	4.3	4.1	4.0	3.6	4.2	4.6	4.8	5.5
1.00	5.7	5.5	5.4	5.0	5.6	6.0	6.2	6.9
1.25	7.1	6.8	6.7	6.3	7.1	7.5	7.6	8.4
1.50	8.4	8.2	8.1	7.7	8.5	8.9	9.0	9.8
1.75	9.8	9.6	9.5	9.1	9.9	10.3	10.5	11.2
2.00	11.2	10.9	10.8	10.4	11.3	11.7	11.9	12.6
2.25	12.5	12.3	12.2	11.8	12.7	13.1	13.3	14.0
2.50	13.9	13.7	13.6	13.2	14.2	14.6	14.7	15.5
2.75	15.3	15.0	15.0	14.5	15.6	16.0	16.1	16.9
3.00	16.6	16.4	16.3	15.9	17.0	17.4	17.6	18.3

* Actual Build Up Rates subject to varying factors; including formation, weight on bit.