

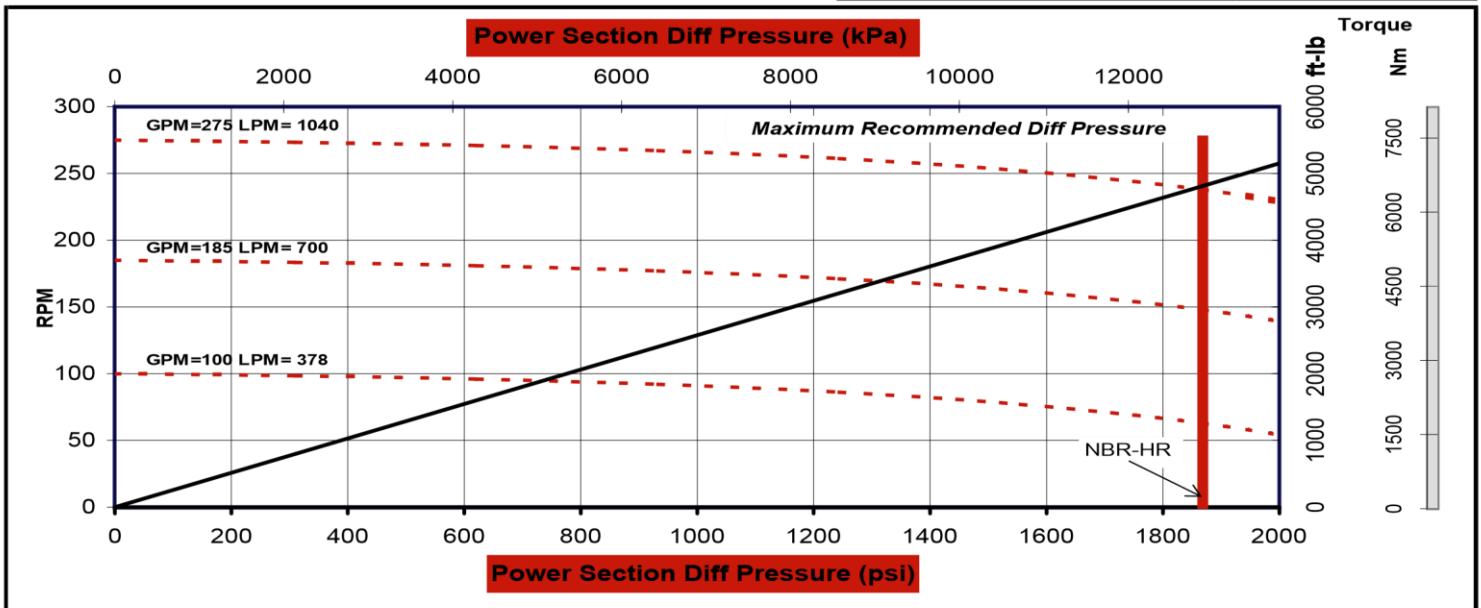


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## SHORT SUPERHAWK 475 – 5:6 Profile 8.3 Stage HR - 4 3/4" O.D.

GENERAL DATA			
BIT SIZES	6" thru 7 7/8"	MAX. WOB – (w/flow)	28,750 lbs
BIT CONNECTION	3 ½ REG	OPTIMUM WOB - (w/flow)	14,500 Lbs
TOP CONNECTION	3 ½ IF	MAX. WOB – (w/o flow)	129,000 lbs
TORQUE - CONNECTIONS	8,500 ft-lb	MAX. BIT PULL – (w/damage)	190,000 lbs
TORQUE - ABH	9,000 ft-lb	MAX BODY PULL – (w/damage)	403,000 lbs

PHYSICAL PROPERTIES	
BIT TO BEND LENGTH (ABH)	51.45 in.
BIT TO BEND LENGTH (FIXED)	37.63 in.
NOMINAL LENGTH	333 in.
WEIGHT	1,250 lbs
PERFORMANCE DATA	
FLOW RANGE	100 - 300 gpm
SPEED RANGE	100 - 300 rpm
SPEED RATIO	1.00 rev/gal
MAX. DIFFERENTIAL PRESSURE	1870 psi
TORQUE RATIO	2.576 ft-lb/psi
TORQUE AT MAX DIFFERENTIAL	4,810 ft-lbs
STALL TORQUE	7,220 ft-lbs



Angle (Deg)	CALCULATED BUILD UP RATES – DEGREES / 100 ft.* (FIXED)							
	Hole Size (in) – Slick Sleeve				Hole Size (in) - Stabilized			
	6"	6 1/8"	6 3/4"	7 7/8"	6"	6 1/8"	6 3/4"	7 7/8"
0.25	2.8	2.6	1.2		1.6	1.7	2.1	2.9
0.50	4.2	4.0	2.6		3.3	3.4	3.8	4.6
0.75	5.7	5.4	4.0	1.6	5.0	5.1	5.5	6.3
1.00	7.1	6.8	5.4	3.0	6.7	6.8	7.2	8.0
1.25	8.5	8.2	6.9	4.4	8.4	8.5	8.9	9.7
1.50	9.9	9.7	8.3	5.8	10.1	10.2	10.6	11.4
1.75	11.4	11.1	9.7	7.2	11.8	11.9	12.3	13.1
2.00	12.8	12.5	11.1	8.7	13.5	13.6	14.0	14.8
2.25	14.2	13.9	12.5	10.1	15.2	15.3	15.7	16.5
2.50	15.6	15.3	14.0	11.5	16.9	17.0	17.4	18.2
2.75	17.0	16.8	15.4	12.9	18.6	18.7	19.1	19.9
3.00	18.5	18.2	16.8	14.3	20.3	20.4	20.8	21.6

Angle (Deg)	CALCULATED BUILD UP RATES – DEGREES / 100 ft.* (ABH)							
	Hole Size (in) – Slick Sleeve				Hole Size (in) - Stabilized			
	6"	6 1/8"	6 3/4"	7 7/8"	6"	6 1/8"	6 3/4"	7 7/8"
0.25					1.5	1.6	2.1	2.8
0.50	2.3	2.2	1.3		3.2	3.2	3.7	4.4
0.75	3.8	3.6	2.7	1.1	4.8	4.9	5.3	6.1
1.00	5.2	5.0	4.1	2.6	6.4	6.5	6.9	7.7
1.25	6.6	6.4	5.6	4.0	8.0	8.1	8.5	9.3
1.50	8.0	7.8	7.0	5.4	9.6	9.7	10.1	10.9
1.75	9.4	9.3	8.4	6.8	11.2	11.3	11.8	12.5
2.00	10.9	10.7	9.8	8.2	12.9	12.9	13.4	14.1
2.25	12.3	12.1	11.2	9.7	14.5	14.6	15.0	15.8
2.50	13.7	13.5	12.7	11.1	16.1	16.2	16.6	17.4
2.75	15.1	14.9	14.1	12.5	17.7	17.8	18.2	19.0
3.00	16.5	16.4	15.5	13.9	19.3	19.4	19.8	20.6

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