

# 9½-in. Navi-Drill Ultra HP XXL/VS

Equipped with high performance elastomer

## Tool Specifications

Length (shoulder-shoulder)	41 ft	12.5 m
Weight range	6,900–9,100 lb	3,131–4,110 kg
Bit box to bend	9.3 ft	2.842 m
Bit size range	12¼ in. – 28 in.	
Top connection (optional)	6⅝ in. API Reg. box (6⅝ in. H90, 7⅝ in. API Reg., NC56)	
Bit connection (optional)	6⅝ in. API Reg. box (7⅝ in. API Reg. box)	
Max. slick OD at wear ring	10.65 in.	270.5 mm
Max. Slick OD at wear pad	10.41 in.	264.5 mm
Deflection angle range of AKO	0° – 2°	

## Power Section

Lobe configuration	7/8	
Stages	5.9	
Flow rate	530–1,200 gpm	2,000–4,550 lpm
Speed	55–120 rpm	
Speed to flow ratio	0.10 rev/gal	0.03 rev/l
Rotor nozzle	No	
No load pressure drop	260 psi	18 bar
Max. temperature	266 °F	130°C

## Performance Data

Operational limits		
Differential pressure	1,280 psi	89 bar
Torque	23,000 ft-lb	31,000 Nm
Power output	530 hp	390 kW
Maximum operational		
Differential pressure	1,710 psi	118 bar
Torque	30,500 ft-lb	41,500 Nm
Power output	702 hp	524 kW



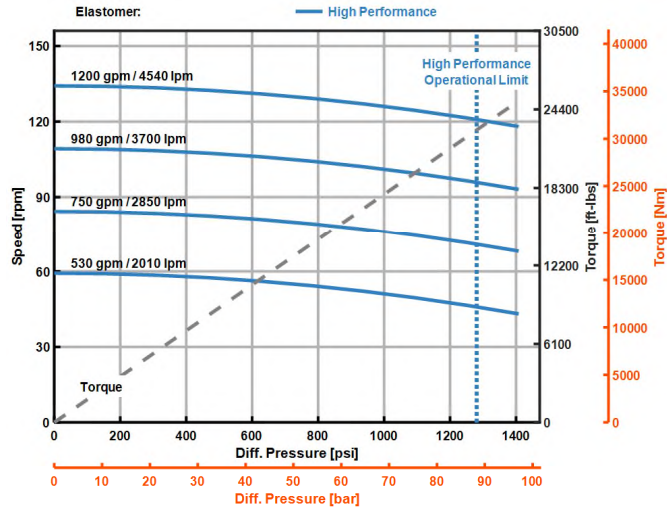
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## Bearing Section Operating Specifications and Limits

### Diamond Bearings

WOB and backreaming weight	92 klb	410 kN
Re-run overpull and set-down weight	184 klb	820 kN
Ultimate overpull to failure	1,650 klb	7,300 kN

## Performance Charts



\* Motor Performance specifications and related charts are derived from dynamometer testing performed with water at 68°F (20°C) as the working fluid. Motor power sections were assembled for maximum performance and longevity in the testing environment on surface and are presented for comparative analysis and operational calculations. Motor performance specifications subject to change without notice. Actual downhole operational performance may vary due to temperature, fluid type and rotor/stator fit adjustments. If the motors, that have been assembled to compensate for downhole temperature effects, are surface tested, they may show reduced performance on surface and at low temperatures.

## Build Up Rate Chart

Hole Size		Slick			Partial			Full		
		AKO	BUR	RPM	AKO	BUR	RPM	AKO	BUR	RPM
12¼ in.	A1	0.6	1.4	116	0.25	1.8	134	0.25	0.7	135
	A2	1.6	6.8	60	1.4	6.9	60	1.5	6.0	60
	A3	1.8	7.9	30	1.5	7.3	30	1.6	6.4	30
	A4	2.0	8.9	0	2.0	9.5	0	2.0	8.1	0
16 in.*	A1	N/A			N/A			0.25	0.4	136
	A2	N/A			N/A			1.6	6.1	60
	A3	N/A			N/A					
	A4	N/A			N/A			2.0	7.7	0
17½ in.*	A1	N/A			N/A			0.25	0.4	135
	A2	N/A			N/A			1.5	5.6	60
	A3	N/A			N/A					
	A4	N/A			N/A			2.0	7.7	0

\* The blade OD of Stabilizers is ¼-in. undergauge.

- A1: Minimum building AKO setting
- A2: Recommended maximum rotatable AKO setting
- A3: Absolute maximum rotatable AKO setting
- A4: Absolute maximum oriented setting

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GM-GLB-UTR-100403 Rev. C



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