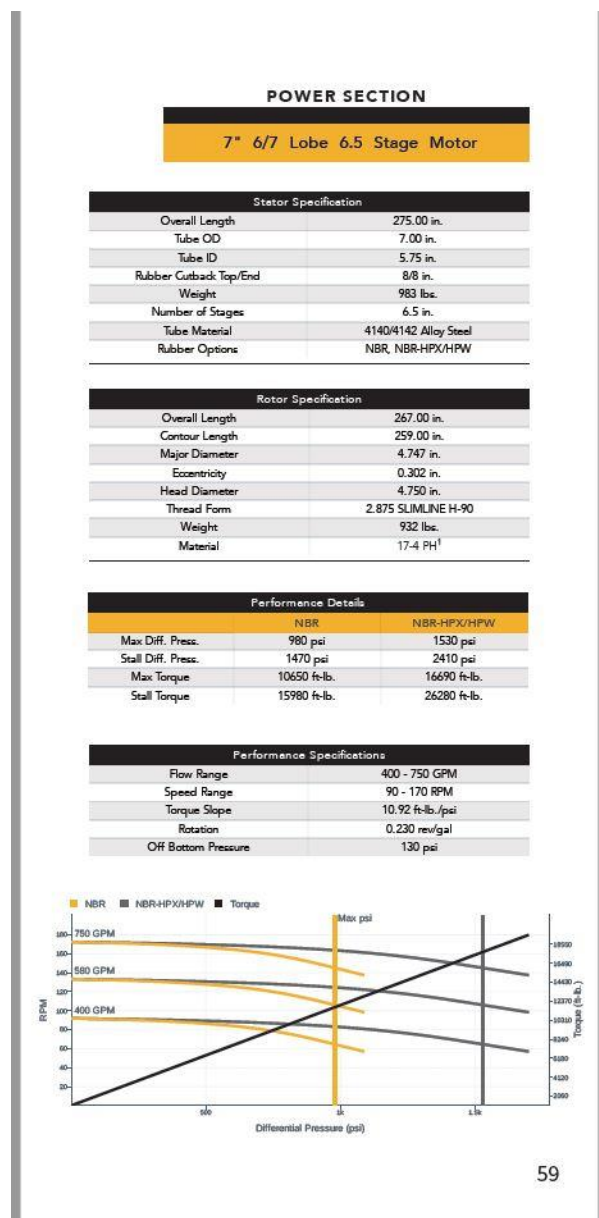


## GeoGuidance Tool Specifications

All GeoGuidance mud motors are lined with high performance HPX or HPW NBR hard rubber which produces the highest reliability and performance on the drilling market.

GeoGuidance Mud Motor Weight Limits					
Motor Size	Max Recommended WOB	Max Operating WOB	Max WOB No Flow	Max overpull to rerun	Pull to Yield
6 3/4"	55,000	80,000	220,000	285,000	625,000
7"	65,000	100,000	325,000	425,000	975,000
8"	70,000	105,000	400,000	360,000	875,000
9 5/8"	80,000	120,000	475,000	620,000	1,500,000

## HIGH PERFORMANCE JUGGERNAUT MOTOR POWER SECTION SPECIFICATION



## POWER SECTION

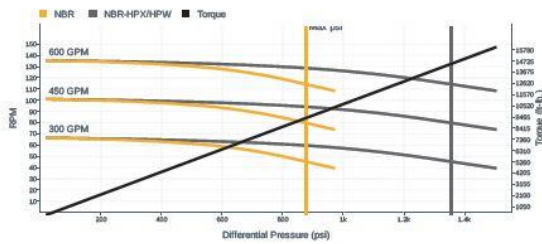
## 6.75" 7/8 Lobe 5.7 SX Stage Motor

Stator Specification	
Overall Length	260.00 in.
Tube OD	6.75 in.
Tube ID	5.50 in.
Rubber Cutback Top/End	8/8 in.
Weight	856 lbs.
Number of Stages	5.7 in.
Tube Material	4140/4142 Alloy Steel
Rubber Options	NBR, NBR-HPX/HPW

Rotor Specification	
Overall Length	252.00 in.
Contour Length	245.00 in.
Major Diameter	4.644 in.
Eccentricity	0.246 in.
Head Diameter	4.500 in.
Thread Form	2.875 API REG
Weight	1002 lbs.
Material	17-4 PH <sup>1</sup>

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

Performance Specifications	
Flow Range	300 - 600 GPM
Speed Range	70 - 140 RPM
Torque Slope	10.60 ft.-lb./psi
Rotation	0.230 rev/gal
Off Bottom Pressure	100 psi



55

## POWER SECTION

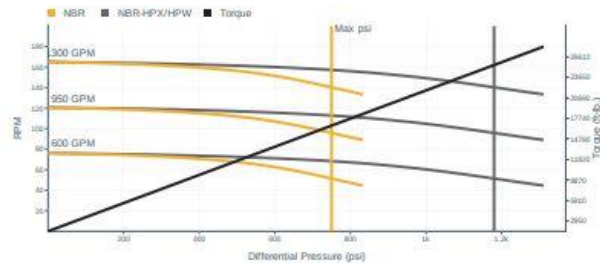
## 9.62" 6/7 Lobe 5.0 Stage Motor

Stator Specification	
Overall Length	218.00 in.
Tube OD	9.63 in.
Tube ID	7.88 in.
Rubber Cutback Top/End	8/8 in.
Weight	1676 lbs.
Number of Stages	5.0 in.
Tube Material	4140/4142 Alloy Steel
Rubber Options	NBR, NBR-HPX/HPW

Rotor Specification	
Overall Length	202.00 in.
Contour Length	195.00 in.
Major Diameter	6.403 in.
Eccentricity	0.428 in.
Head Diameter	5.500 in.
Thread Form	4.00 API FH
Weight	1378 lbs.
Material	17-4 PH <sup>1</sup>

Performance Details		
	NBR	NBR-HPX/HPW
Max Diff. Press.	750 psi	1180 psi
Stall Diff. Press.	1130 psi	1860 psi
Max Torque	15230 ft.-lb.	23860 ft.-lb.
Stall Torque	22840 ft.-lb.	37570 ft.-lb.

Performance Specifications	
Flow Range	600 - 1300 GPM
Speed Range	80 - 170 RPM
Torque Slope	20.30 ft.-lb./psi
Rotation	0.127 rev/gal
Off Bottom Pressure	140 psi



## HIGH PERFORMANCE COLOSSUS MOTOR POWER SECTION SPECIFICATIONS

## POWER SECTION

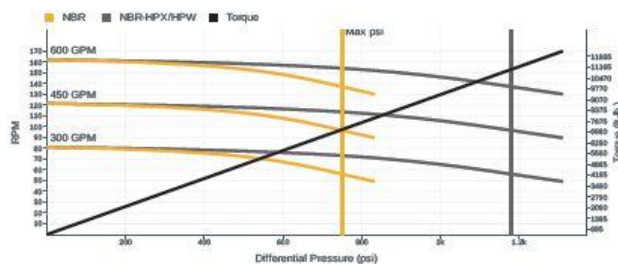
## 6.75" 7/8 Lobe 5.0 Stage Motor

Stator Specification	
Overall Length	194.50 in.
Tube OD	6.75 in.
Tube ID	5.50 in.
Rubber Cutback Top/End	8/8 in.
Weight	746 lbs.
Number of Stages	5.0 in.
Tube Material	4140/4142 Alloy Steel
Rubber Options	NBR, NBR-HPX/HPW

Rotor Specification	
Overall Length	188.00 in.
Contour Length	181.00 in.
Major Diameter	4.520 in.
Eccentricity	0.256 in.
Head Diameter	4.000 in.
Thread Form	2.875 API REG
Weight	694 lbs.
Material	17-4 PH <sup>1</sup>

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

Performance Specifications	
Flow Range	300 - 600 GPM
Speed Range	80 - 160 RPM
Torque Slope	9.06 ft.-lb./psi
Rotation	0.270 rev/gal
Off Bottom Pressure	100 psi



## POWER SECTION

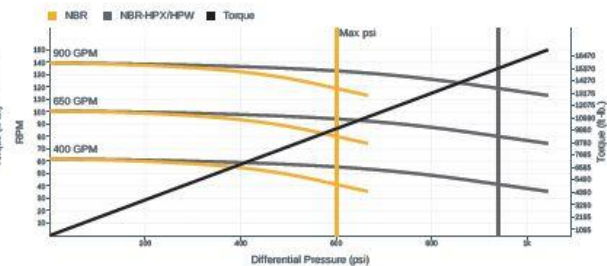
## 8" 7/8 Lobe 4.0 Stage Motor

Stator Specification	
Overall Length	203.25 in.
Tube OD	8.00 in.
Tube ID	6.25 in.
Rubber Cutback Top/End	8/8 in.
Weight	1212 lbs.
Number of Stages	4.0 in.
Tube Material	4140/4142 Alloy Steel
Rubber Options	NBR, NBR-HPX/HPW

Rotor Specification	
Overall Length	196.25 in.
Contour Length	188.25 in.
Major Diameter	5.186 in.
Eccentricity	0.293 in.
Head Diameter	4.750 in.
Thread Form	3.50 API REG
Weight	956 lbs.
Material	17-4 PH <sup>1</sup>

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

Performance Specifications	
Flow Range	400 - 900 GPM
Speed Range	60 - 140 RPM
Torque Slope	15.77 ft.-lb./psi
Rotation	0.155 rev/gal
Off Bottom Pressure	100 psi



## MWD TOOL SPECIFICATIONS

Jarvis HT MWD Tool multiple basin and multiple state proven technology. This tool developed by GeoGuidance has proven reliability and has been a key factor in breaking, then re-breaking multiple drilling records most competitive drilling market in the world, the Delaware Basin.





## Product Sheet

## Applications

- Unconventional and conventional drilling
- Directional and horizontal drilling
- Sidetracking
- Custom drilling
- SAGD drilling

## Benefits

- Minimizes costs (up front and long-term maintenance compared to dual-telemetry tools)
- Improves reliability and operational efficiency
- Increases accuracy compared to most standalone directional sensors
- Saves battery costs, with around 800 hours per eight-cell pack (expandable): MWD+ gamma
- Decreases downtime with high-speed memory download: <10 min.

## Features

- High-operating temperature: 175°C (347°F), 185°C (365°F)
- High-speed mud pulse transmission available
- Patented instantaneous dynamic synchronization
- Drilling Dynamics: RPM, shock, vibration, temperature, continuous inclination, azimuth, stick-slip
- Mode change with flow and/or rotation status
- m+ Pulser with various gamma options
- Reduced connectors

## GeoGuidance's JARVIS-HT System Mud Pulse Telemetry

GeoGuidance's JARVIS-HT system offers an alternative to reliability and accuracy issues inherent with longer legacy systems. By harnessing the benefits of its advanced 3D-I directional and drilling dynamics instrument, GeoGuidance's JARVIS-HT system provides operators with precise and dependable directional information to maximize drilling efficiency and pay zone exposure in directional and horizontal wells.

The JARVIS-HT system streamlines operations because it is shipped pre-assembled in a standard MWD kit box, with only a battery connection to be made at the rig site. Its reduced length and weight make it easier to handle than other systems. When connected to other items, it helps shorten and reduce the weight of extra-long strings, such as dual-telemetry, integrated resistivity, PWD and gyro.

### Enhanced Performance in a Smaller System

The JARVIS-HT system's high-speed mud pulse transmission allows users to leave the legacy platform, while eliminating the need for expensive EM and dual-telemetry systems with limited depth capability. The system's directional stability and repeatability is unmatched in the industry due to its industry-leading magnetometers, accelerometers and proven high-temperature electronics. Reliability is improved by eliminating many of the failure points found in other systems. For instance, the 3D-I, m+ Pulser and gamma all fit in one standard DM pressure housing. The system also has 95% fewer field-mated connectors and less wiring than legacy systems.

The JARVIS-HT system comes complete with GeoGuidance's surface system and can be set up as retrievable or latch mounted.

To improve your reliability, accuracy and drilling efficiency, contact the GeoGuidance sales team for assistance.



Physical Specifications

Parameter / Feature	Values / Ranges
Size	1 7/8 x 7.5 in. (4.76 x 228.6 cm) Plus lower end and battery
Operating voltage <sup>1</sup>	7 to 36VDC
Operating power	< 2W peak watt
Communications	qBUS, CAN
Built-in sensors (memory and real time)	Temperature, precision mags, precision accelerometers (Q-Flex®), shock, vibration, rotation
Gamma	Pulse
Flow	Built into m+ Pulsar module

Performance Specifications

Parameter / Feature	Values / Ranges
Accuracy, std configuration <sup>2</sup>	
Inclination	≤±0.1°
Azimuth (dip A <70°, 90° incl)	≤±0.2°
Gravity	≤±1.5 mg
Dip	≤±0.15°
Total mag. field	≤±0.75 mGauss
Temperature	≤±1°C (± 1.8°F)
Rotation (0 to 300)	±12 RPM
Drilling inclination	±0.35° typical
Memory	32 Mb
Memory download time	< 10 minutes
Drilling Dynamics	Memory and real time

Parameter / Feature	Values / Ranges
	LowMax for standard models
Operating temp, std <sup>3</sup>	25°C150°C175°C185°C
Temperature ramp	3°C / minute max
Vibration	20g Grms, 30 to 1000Hz
Shock	1000g 0.5mSec-½Sine

1: Dependent on manufacture of gamma module  
2: Tighter performance on request  
3: Contact GeoGuidance for other ranges

Q-Flex® is a Registered Mark of Honeywell  
Metric units are approximations

