

FLEX® GYRO MWD TOOL

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- Through extensive research and development from our engineering team in the UK, we now offer the Flex® GyroMWD system. Manufactured in house, our team can provide unparalleled technical support and service.
- Incorporates new high accuracy MEMS solid state gyros and accelerometers built to withstand harsh drilling conditions. It is a versatile instrument operated in a similar manner as any conventional legacy “Tensor” MWD.
- When the pumps are turned off, the tool will perform a gyrocompass, take a survey and store it in its memory. After the pumps are turned back on, the tool will transmit via mud pulse telemetry the stored survey data as well as all quality control flags to verify the quality of the survey. After the survey is transmitted, the tool will start sending continuous information like Toolface and Inclination.
- Cost effective solution for top hole kick-offs, whipstocks and sidetracks. Reduces the ellipses of uncertainty and eliminates the need and high risks related to costly and inefficient wireline runs & side entry packages.



Probe Dimensions

Diameter:	47.6 mm / 1.875"
Probe Length:	~ 4 ft / 48"
Combinable through:	MWD Q-bus and “Kintec” connectors

Power, Storage and Communication

Maximum Pressure:	20,000 psi
Max. Power Consumption:	2 Watts
Standby Current:	10 mA @ 24-28V
Storage Capacity:	256 Mbit
Comms. Interface:	Serial RS232 bus

Operating Environment

Collar Size Range:	3.5 to 9.5 inches
Maximum Temperature:	110°C / 230°F (HT option with Heatshield)
Vibration resistance:	20G RMS (20-500 Hz random)
Shock Resistance:	1000G (1/2 sine, 1ms)
Flow Rate:	Up to 1,200 GPM
Pulse Signal:	~ 150 psi
Downhole Working Hours:	250 hours with single battery 500 hours in dual battery mode
Operating Mode:	Pumps Up Gyro MWD Survey, Continuous Inc & TF loop

Instrument Performance and Accuracy *

Inclination:	0-90° ±0.1°
Azimuth:	0-360° ±0.5°
Gravity High Side Toolface:	0-360° ±1° (3° ≤ INC ≤ 90°)
Gyro Steering Toolface:	0-360° ±2° (0° ≤ INC ≤ 70°)
Gyrocompass Survey Time:	90 seconds

* System accuracy is subject to wellbore profile. Error ellipse calculations available upon request.

MUD PULSE GYRO SYSTEM

ADVANTAGES

- Utilizes a proven mud pulse telemetry system to transmit gyro information to surface.
- Only a UBHO is installed in the BHA to accommodate the probe. No monels are required.
- Gyro sensor is located close to the bit for better and faster drilling decisions.
- Totally retrievable and reseatable using slickline. Probe can be “fished” reducing risk of loss.
- Downlink capability allows operator to select optimum transmission sequence and data rate.
- The Flex® GyroMWD Sensor can be combined and run with any third party MWD system.

COLLAR MECHANICAL SPECIFICATIONS

Collar O.D.	3.5 in.	4.75 in.	6.75 in.	8.25 in.	9.5 in.
Tool Connections	2 7/8 in. I.F.	NC 38	NC 50	6 5/8 in. REG	7 5/8 in. REG
Equivalent Collar Stiffness (OD x ID)	2.96 in. x 2.25 in.	4.75 in. x 2.81 in.	6.71 in. x 3.25 in.	7.93 in. x 4.00 in.	9.42 in. x 4.00 in.
Make-up Torque	3,500 lbf-ft	9,600 lbf-ft	30,000 lbf-ft	54,000 lbf-ft	62,000 lbf-ft
Flow Rate Range	75 - 165 usgpm	100 - 300 usgpm	150 - 800 usgpm	250 - 1,200 usgpm	250 - 1,200 usgpm
Max. Dogleg Rotation	50°/ 100 ft	15°/ 100 ft	10°/ 100 ft	8°/ 100 ft	4°/ 100 ft
Max. Dogleg Sliding	100°/ 100 ft	30°/ 100 ft	21°/ 100 ft	14°/ 100 ft	7°/ 100 ft
Probe OD	1.875 in.	Max. Pressure	20,000 psi	Max. Mud Weight	18 ppg
Max. Temperature Operating	230 °F	Max. Sand	1.0 % at maximum fluid velocity		
Max. LCM Tolerance	40 ppb any type, thoroughly and evenly mixed, with use of surface drill pipe screens				

RELIABLE SURFACE DECODING & RT TRANSMISSION

- Gyro information can be transmitted in real time via WITS for remote access from anywhere.

