Newsco
Pressure While Drilling

Pressure While Drilling

See down-hole conditions before they cause serious problems

"Newsco developed a Pressure While Drilling (PWD) system for early detection of hole and motor problems and to optimize drilling performance.

The PWD adds another dimension of down-hole monitoring to our suite of tools."

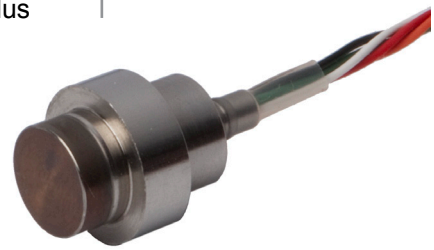
Our Challenge

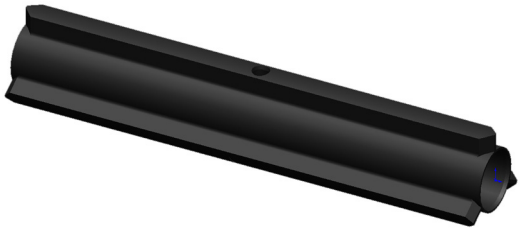
The MWD operator is essentially blind to down-hole conditions that can lead to a range of failures; such as motor issues, lost circulation, bit balling and drill collar sticking, to mention a few.

Our Solution

When faced with the problems associated with conventional MWD well monitoring, we developed and refined an effective Pressure While Drilling (PWD) tool to closely monitor down-hole conditions that can lead to serious drilling problems. This system provides real-time annulus and drill-stem pressures to warn of down-hole problems before they cause problems. The PWD provides information about down-hole pressure, equivalent circulating density (ECD), and fluid or gas influx. Being aware of these developing situations can help the operator make adjustments before they develop into serious problems, thus increasing drilling efficiency.

In addition to real-time information, the system logs and records data in nonvolatile memory for access and analysis on the surface.





PWD Features
Remote operation/WITS compatible
Real-time display and logging
Wireline retrievable and insertable
All mud types
All collar sizes

Pressure While Drilling Specifications	
Pressure range	between 50 to 1000 bar (0 to 15,000 psi)
Overload	up to 2000 bar (30,000 psi)
Collars for retrieval	58 mm (2 1/4") minimum
Total accuracies	0.1% FS, 1 psi accuracy
Flow rates	0.5 m^3 - 4.0 m^3 (132 gpm - 1000 gpm)
Operating temperature	302 ºF (150 ºC)

NEWSCO
The Leader in Innovative Drilling Solutions

The Pressure While Drilling System

Down-hole pressure: Annulus pressure monitoring can diagnose and warn of several down-hole situations that are developing while drilling before they cause serious problems. The differential pressure between the annulus and internal pipe will increase if cuttings accumulate, or if the well bore is damaged causing a bridge. Pressure will decrease if there is loss of circulation due to a fracture zone in the formation.

Early warning of these situations will allow the operator to react before they become more serious.

Equivalent circulating density (ECD) monitoring: Pressure readings can diagnose the levels of cuttings in the mud, giving the operator further information about down-hole conditions.

Fluid or gas influx: These can cause sudden changes in annulus pressure and are serious problems. The Pressure While Drilling system gives immediate feedback in these situations giving the operator the information needed to react quickly.

Drilling efficiency: The main advantage to early detection and adjustment to these anomalies is to increase drilling efficiency. The operator can adjust weight on the bit, resulting in faster drilling. Moving in other equipment such as a reamer to clean the hole is time and money wasted. And getting stuck in the hole is a costly situation.

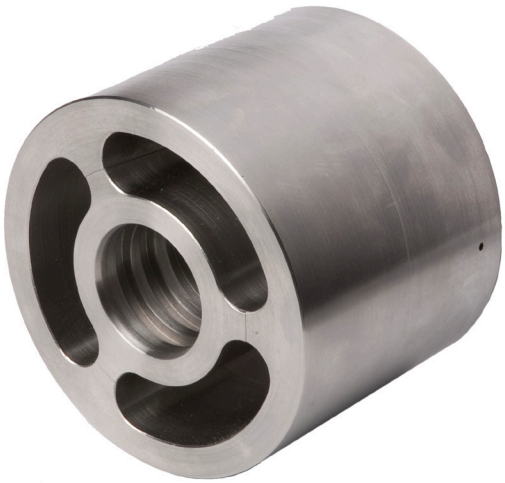
Monitoring annulus pressure allows the operator to react quickly to these developing situations thereby avoiding costly drilling delays.

Re-engineered Components

Newsco never rests in its drive for improved performance and dependability, so we can continue to exceed our customers' expectations. Our proactive approach means that we take each failure seriously, carefully analyze the cause, and re-engineer parts to higher tolerances to increase strength and reliability.

Applications

- New fields
- Unstable formations
- Under-balanced drilling
- Collar mounted tools
- Retrievable tools



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