

Advancing BOP Systems for Coiled Tubing & Wireline

MARKETS

- Snubbing
- Coiled Tubing
- Fishing
- Wireline
- Sub Sea
- Frac Ball
- Drilling
- Automation



Top Five Serious Incidents Mitigated

- Inadvertently closing a valve or BOP on wireline or tubing potentially creating a fishing operation and damaged equipment.
- Pulling the end of tubing out of the stripper or BOP causing a blow out situation
- Crowning out the coiled tubing or wireline tools
- Pulling collapsed or badly damaged tubing through a BOP or stripper into the injector losing control of the well and string
- Inability to shear pipe in an emergency situation





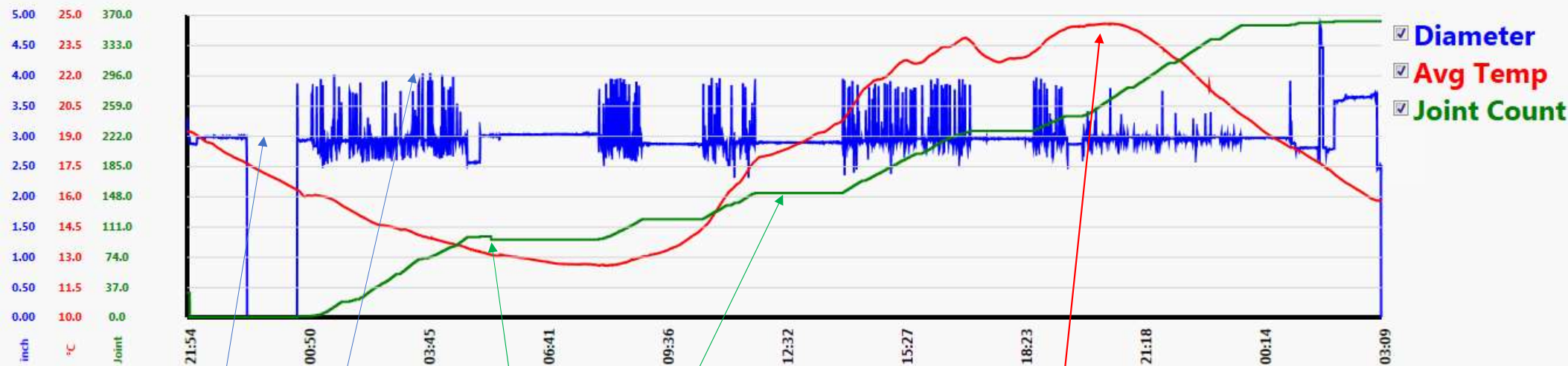
Potential Cost Savings

Save an average of 1 hour per round trip by being able to safely increase speeds

Save hundreds of thousands *to* millions of dollars by avoiding many types of serious incidents

Data log everything in and out of the well for comparison purposes

Accountability with Intelligent Spools Data Logs



When the blue curve drops vertically to zero, the pipe has exited the Intelligent Spool as 1 OOH in the database

The blue curve is always diameter versus time. In the compressed view, the diameter spikes appear distorted and have sporadic spikes. When viewed on the zoomed in view (shorter time span), accurate diameter measurements are displayed.

If the counter curve displays a downward step, this is an indication that a joint has been subtracted.

The time periods where the count curve is flat indicate times when the pipe movement was very slow or stopped. Conversely, the steeper the slope of the count line, the faster the pipe is moving.

The red curve is always temperature. The temperature sensors in the Intelligent Spool are ultra-sensitive and are positioned close to the internal wall for increased accuracy.

In addition to their primary role, the sensors can also serve as a warning of potential hydrates build-up close to the spool

- Monitor fluid temperature when flowing the well (if the flow is close to the Spool)
- Monitor the internal temperature of the pressure control stack (useful in cold weather ops to minimize potential well control issues)





**Your Solution
to Blow-Out
Prevention.**

