

14-Plug Drill-out Validates Ability of 15K AUTOCHOKE to Respond to Pressure, Flow Rate Changes: Texas

A primary function of the 15K AUTOCHOKE is to control wellbore pressure and fluid flow back.

THE PROBLEM

The primary function of the 15K AUTOCHOKE is to control wellbore pressure and flow back, yet no concrete data existed on its capacity to respond to pressure and flow changes during the highly abrasive environment associated with Frac Plug Drill Out.

THE SITUATION

An Operator was looking for a more consistent and cost effective solution for managing flow during Frac Plug Drill Out operations.

THE SOLUTION

The 15K AUTOCHOKE was deployed to effectively and accurately control near constant bottom-hole pressure while reducing plugging, choke cutout, and non-productive time. A field trial was arranged in Carthage, TX that would involve the drill-out of 14 plugs.

THE RESULTS

The responsiveness of the 15K AUTOCHOKE was fast and predictable, requiring minimal manual adjustments during the operation. Feedback from the crew members was positive with emphasis on the reduced amount of control required and minimal wear to the internal components.

The Situation

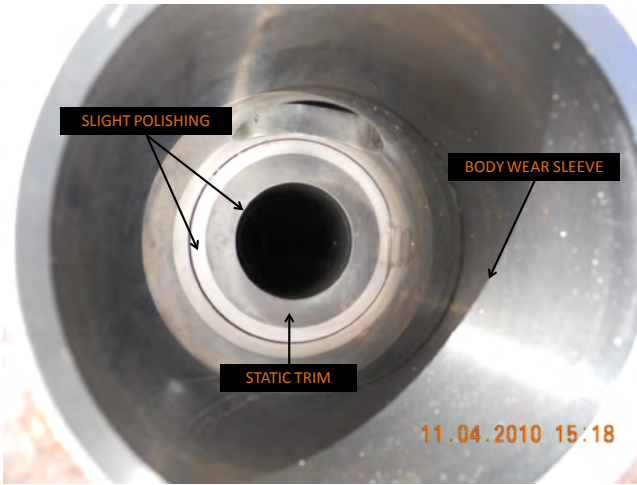
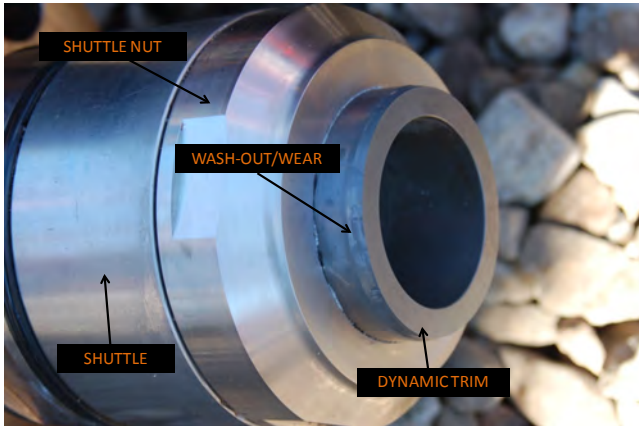
An Operator was looking for a more consistent and cost effective solution for managing flow during Frac Plug Drill Out operations. Typical Frac Plug Drill Out operations using a fixed position or manual choke require continuous adjustments of the choke orifice by the choke operator to maintain a constant flow rate. When the well produces large quantities of sand, the choke will start to plug causing the flow rate and pressure to fluctuate greatly. The choke operator must react quickly to avoid plugging or damaging the well. The high sand content and high flow rates commonly seen in Frac Plug Drill Out operations will damage the internal choke parts and sometimes cut through the choke body. The excessive cost and down-time needed to replace these internal components can be cost prohibitive.

The Solution

The 15K AUTOCHOKE was deployed to effectively and accurately control near constant bottom-hole pressure while reducing plugging, choke cutout, and non-productive time. A field trial was arranged in Carthage, TX that would involve the drill-out of 14 plugs.

The Results

The responsiveness of the 15K AUTOCHOKE throughout the field trial was fast and predictable. The 15K AUTOCHOKE required minimal manual adjustments during the operation. Crew members commented that it made their job easier as the flow rate stayed more consistent than with a fixed position choke. The unique 15K AUTOCHOKE shuttle design automatically adjusts the orifice to pass varying sized sand slugs without choke operator intervention. After the job finished, inspection revealed minimal wear to the internal components and the 15K AUTOCHOKE was reassembled with the same internal parts for the Operator's next Frac Plug Drill-Out.



After the job Internal Tungsten Carbide Trim Parts show minimal wear



General layout of job showing gooseneck, sand separator and choke manifold



General layout of job showing sand separator and choke manifold.

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