Evo-RED® Bridge Plug

ELIMINATES INTERVENTIONS DURING WELL OPERATIONS

OVERVIEW

The Evo-RED® bridge plug provides a unique and highly efficient method of deploying and retrieving a downhole barrier. What makes it unique is that it incorporates a computer-controlled ball valve which can be remotely opened and closed multiple times without the need for any control lines or interventions.

Each time the ball valve is activated, an intervention is eliminated from the operation saving a huge amount of rig-time while helping to reduce risk to both the operation and personnel.

The Evo-RED bridge plug can be used in a wide range of well operations and is particularly effective as a downhole barrier during workovers or completion operations keeping interventions and personnel-on-site to a minimum.

HOW IT WORKS - A TYPICAL OPERATION

The Evo-RED bridge plug is run-in-hole with the ball valve normally in the open position and the slips and element relaxed. Typically the assembly is deployed on our electronically controlled Downhole Power Unit (DPU®) which will mechanically set the bridge plug when the target depth has been reached.

At this stage the ball valve is still open and the flow of well unrestricted. This can be commanded to close at any time using one of the pre-programmed triggers - such as applying between 1,000 - 1,500 psi for 10 minutes.

With the ball valve closed, the device provides a testable downhole barrier (rated to ISO 14310 V1) capable of holding up to 7,500 psi from above and below.

The well can be equalized at any time by commanding the Evo-RED bridge plug to open using another pre-programmed trigger. This process can be repeated up to 30 times in a single job - providing huge operational flexibility and eliminating an intervention each time.

FEATURES

» Remotely operated (opened and closed) multiple times without intervention
» Large flow area when open
» Reliable deployment
» Debris tolerant
» Integrated back up

BENEFITS

» Remote activation minimizes the number of interventions for a wide range of operations.
» A large flow area allows well fluids to wash through the assembly aiding deployment and retrieval.
» A minimized outside diameter, retained packing element, anti-preset and anti-reset features aid deployment and retrieval.
» A large internal diameter and an element positioned above the slips help reduce the effects of debris.
» Built-in back-up mechanical equalisation aids retrieval.
» Can be pre-installed onshore for completion operations; for workover operations can be retrieved with the tubing. In both cases this reduces the number of interventions for each operation to just one.
» When pre-installed onshore no dedicated offshore personnel are required during the operation.
The assembly is retrieved in a single run using a standard GS pulling tool with PX0 anti-pre-shear adaptor. This latches into the top of the Evo-RED bridge plug activating the internal equalizing mechanism which aids recovery and doubles as a back-up should the electronics fail. The slips and element retract and are secured in place by the anti-reset mechanism.

The large flow ports on the ball valve and extensive bypass features aid recovery by allowing significant fluid to flow through the assembly, while the minimized outside diameter helps prevent them from fouling on other equipment during the retrieval.

APPLICATIONS

Any application where a wireline plug is used can be replaced by the Evo-RED bridge plug. Here exactly the same results can be achieved but without repeated interventions, reducing POB while saving on rig-time and the associated costs and risks. Multiple assemblies can be used in a single operation multiplying all the benefits.

» Packer setting device
» Deep-set barrier in extended reach or horizontal wells
» Shallow-set for tree testing and change out
» Liner deployment with external swellable elastomer
» Barrier in temporary abandonments or light well intervention operations
» Barrier in TCP gun firing and stimulation operations
» Self-acting flow control device
» Shut-in tool for pressure build-up tests with reduced interventions

Specifications

<table>
<thead>
<tr>
<th>Available Sizes (to suit casing size)</th>
<th>4½-in. (11.6, 12.6 13.5 lb/ft)</th>
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<tbody>
<tr>
<td>5½-in. (17, 20, 23 lb/ft)</td>
<td>7-in. (23, 26, 29, 32 lb/ft)</td>
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<tr>
<td>Maximum Differential Across Closed Assembly</td>
<td>7,500 psi (516 bar)</td>
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<tr>
<td>Temperature Range</td>
<td>4 - 140˚C (39 - 284˚F)</td>
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<tr>
<td>Maximum Differential Pressure While Opening</td>
<td>6,000 psi (414 bar)</td>
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Due to the high number of design variables, the information given below is for guidance only.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com