

Evo-RED™ Bridge Plug

REMOTELY OPERATED MULTI-CYCLE VALVE WITH RETRIEVABLE BRIDGE PLUG ELIMINATES INTERVENTIONS DURING WELL OPERATIONS



HCT1779-097a

OVERVIEW

The Evo-RED™ bridge plug consists of an eRED® ball valve connected to an Evo-Trieve® bridge plug allowing for placement anywhere in the completion providing a highly efficient method of deploying and retrieving a downhole barrier. This assembly configuration consists of the eRED ball valve, made up to an Evo-Trieve bridge plug allowing for placement anywhere in the completion. Its unique design incorporates the eRED, an electro-mechanical ball valve, that can be remotely opened and closed multiple times without requiring control line or intervention.

Each time the ball valve is activated, an intervention is eliminated from the operation, saving significant rig time while reducing risk to 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, minimizing interventions and personnel onsite.

HOW IT WORKS: A TYPICAL OPERATION

The Evo-RED bridge plug is run in hole with the ball valve normally in the open position with the slips and element relaxed. The assembly is deployed on the Halliburton electronic down hole power unit (DPU®), which mechanically sets the bridge plug once the target depth has been reached.

At this stage, the ball valve remains open, and the flow of the well is unrestricted. The valve can be commanded to close at any time using one of the preprogrammed triggers, for example by applying between 1,000 and 1,500 psi for ten minutes or a predetermined hold time. With the ball valve closed, the device provides a testable downhole barrier compliant with ISO 14310 V0 requirements and capable of holding up to 7,500 psi from above and below.

FEATURES

- » Remotely operated electro-mechanical ball valve
- » Market-leading electronic multi-cycle ball valve, multiple open and close actuations
- » Metal-to-metal ball and seat sealing mechanism
- » Extensive battery life—up to 41 months
- » Pressure and temperature logging capability
- » Large flow area
- » Reliable field-proven electronics
- » Debris tolerant
- » Built-in backup mechanical equalization aids retrieval

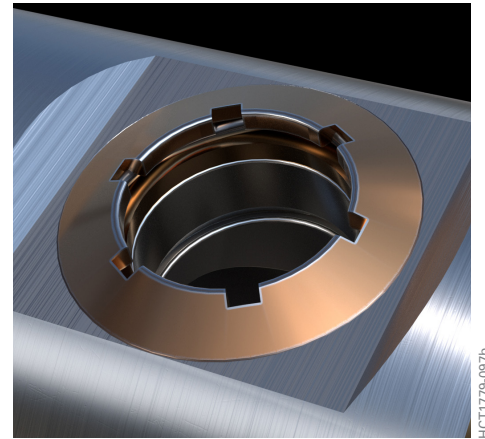
BENEFITS

- » Remote activations reduce the number of interventions and pressure control equipment (PCE) rig ups, saving time and cost and reducing the potential risk of HSE exposure
- » Flexible deployment options: slickline, wireline, coiled tubing, or preinstalled inside tubing offline
- » Large flow area allows well fluids to wash through the assembly, aiding deployment and retrieval
- » Minimized outside diameter (OD), retained packing element, and anti-preset and anti-reset features aid deployment and retrieval
- » Large internal diameter and an element positioned above the slips help reduce debris
- » Built-in backup mechanical equalization aids
- » Option to pre-installed onshore for completion operations. During workover operations, it can be retrieved with the tubing. In both cases, this reduces the number of interventions for each operation
- » When preinstalled onshore, no dedicated offshore personnel are required during the operation
- » Flexible programming tailored for each operation performed at the base or wellsite
- » Tested in accordance with ISO 14310 barrier standards

The well can be equalized at any time by commanding the Evo-RED™ bridge plug to open using another preprogrammed trigger. Depending on battery life, this process can be repeated as many times as necessary during a single job, providing significant operational flexibility and eliminating an intervention each time.

The assembly is retrieved in a single run using a standard GS pulling tool with a PX0 anti-preshear adapter. This latches into the top of the Evo-RED bridge plug and activates the internal equalizing mechanism, which aids recovery and doubles as a backup if 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 OD helps prevent them from fouling on other equipment during retrieval.



eRED® valve flow port

Evo-Trieve® Bridge Plug Specifications*

Available Sizes (to suit tubing/casing size)	3.5 in. (9.2 lb/ft) 4.5 in. (11.6, 12.6, 13.5 lb/ft) 5.5 in. (17, 20, 23 lb/ft) 7 in. (23, 26, 29, 32 lb/ft)
Maximum Differential Across Closed Assembly	Up to 7,500 psi (517 bar)
Temperature Range	39 to 284°F (4 to 140°C)
Maximum Differential Pressure While Opening	Up to 5,000 psi (345 bar)
Flow Area	Up to 10 bbl/min
ISO Qualification	ISO 14310 up to V0

eRED® Electronic Remote Equalizing Device Specifications*

Available Sizes (Valve OD)	2.25, 3.25, 4.25, 5.5 in.
Maximum Differential Across Ball	Up to 10,000 psi (689 bar)
Temperature Range	32 to 284°F (0 to 140°C)
Maximum Differential Pressure While Opening	Up to 5,000 psi (345 bar)
Maximum Flow Rate	Up to 10 bbl/min
Battery Life	Up to 41 months
Test Standard	ISO 14310 up to V0

*Available in a range of specifications, because of the high number of design variables, the information provided is for guidance only. Always refer to the latest product data sheet.

APPLICATIONS

The Evo-RED bridge plug replaces any application that requires intervention plugs. Eliminating repeated interventions and reducing personnel onboard, saving rig time and the associated costs and risks. Multiple EVO-RED's plugs can be deployed in a single operation. For example, for dual barrier well suspension, a shallow- and deep-set EVO-RED plug can be utilized for this application.

- » Packer setting
- » Deep-set barrier
- » Shallow-set barrier for blowout preventer (BOP)/Christmas tree change out
- » Liner deployment
- » Barrier in temporary abandonments or light well intervention operations
- » Barrier in tubing-conveyed perforating gun firing and stimulation operations
- » Ball drop replacement in highly deviated and horizontal wells
- » Self-actuating flow control device
- » Shut-in tool for pressure buildup tests during well testing allows data logging through the valve transducer or via anchored gauges

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

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