Schlumberger

Isolation Valve Cleanup Subs

Remove debris above ball-type isolation valves

APPLICATIONS

- Clean ball-type isolation valves above the closed ball
- Land or offshore, including deepwater rigs

BENEFITS

- Reduced interventions and NPT due to improved cleaning, which lowers the risk of debris affecting valve operation

FEATURES

- Range of sizes for various valve IDs and operating conditions
- Simple, robust, one-piece, unique design
- Standard washpipe box connection
- Deployable on workstring

Schlumberger offers two tools for clearing debris that may have accumulated above the sealing ball of an isolation valve. This debris can hamper or prevent valve operation. A cleanup trip before opening the valve minimizes the risk.

The cleanup subs are designed to avoid damage to the isolation valve and packer bore. They are equipped with a standard washpipe box connection for installation on the end of the cleanup string. A range of sizes is available.

Jetting sub

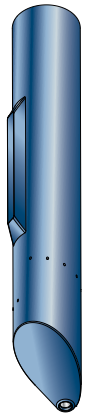
An eccentric body design, an off-center exit port at the bottom, and 12 side ports with different phasing enable the isolation valve jetting sub to provide optimal cleaning. The tool is proven to deliver superior performance compared with conventional designs.

The port nozzles create high-pressure jets at low surface pump rates (up to 7 bbl/min) for breaking up solidified debris. The multiple jets improve penetration in thick and hard debris by creating a vortex to clear debris accumulated above the closed ball of the valve.

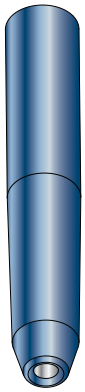
The cleanout range of this jetting sub is approximately 18 in from the tip, allowing a spaceout of 1.5 ft from the ball while still achieving effective cleanup. It is used in conjunction with the multifunction circulating tool (MFCT) from M-I SWACO, a Schlumberger company, or similar technology that enables high-rate circulation for lifting the loosened debris to surface.

Circulation sub

When the cleanup string does not include a circulating tool, the isolation valve circulation sub can be used instead of the jetting sub to flush and lift debris from the top of the valve's ball section. This sub has a single, large exit port at the end that enables a higher flow rate—up to 25 bbl/min [3.975 m^3/min] inside the casing.



Jetting sub.



Circulation sub.

Jetting Sub Specifications

Size, in [mm]	Eccentric OD, in [mm]	Isolation Valve ID, in [mm]	Max. Flow Rate, bbl/min [m^3/min]
2.450 [62.2]	2.880 [73.1]	2.940 [74.7]	7 [1.113]
3.140 [79.8]	3.640 [92.5]	3.700 [94.0]	7 [1.113]
3.500 [88.9]	4.000 [101.6]	4.060 [103.1]	7 [1.113]
3.690 [93.7]	4.190 [106.4]	4.250 [108.0]	7 [1.113]
4.000 [101.6]	4.500 [114.3]	4.560/4.600 [115.8/116.8]	7 [1.113]

Other sizes are available on request. Contact your local Schlumberger representative.

Circulation Sub Specifications

Size (OD × ID), in [mm]	Isolation Valve ID, in [mm]	Max. Flow Rate, bbl/min [m^3/min]
2.500 × 1.294 [63.5 × 32.9]	2.940 [74.7]	25 [3.975]
3.000 × 1.350[76.2 × 34.3]	3.700 [94.0]	25 [3.975]
3.420 × 1.352 [86.9 × 34.3]	4.060 [103.1]	25 [3.975]
3.650 × 1.370 [92.7 × 34.80]	4.250 [108.0]	25 [3.975]
4.000 × 1.372 [101.6 × 34.9]	4.560/4.600 [115.8/116.8]	25 [3.975]

Other sizes are available on request. Contact your local Schlumberger representative.

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