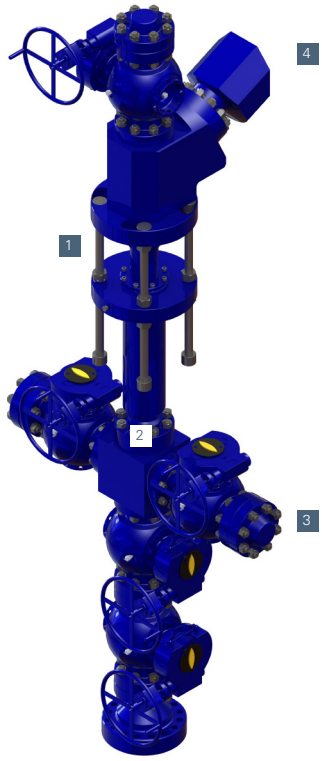
Frac Stack Utilizing Plug Valves

Fewer, faster connections

SPM™ Oil & Gas
A Caterpillar Company



1. Adjustable-height spool for quick alignment[1]
2. Rotating flange for quick alignment[1]
3. Smaller, lightweight and easy-to-maintain plug valve requires far less grease than gate valves (hydraulic and/or manually operated)
4. Single, large-bore inlet, compared to 4 or more inlets on a typical goat-head connection, reducing potential leak paths and labor costs[1]

Working in tandem with the One Straight Line (OSL) Frac Connection and the Vertical Zipper manifold, the Frac Stack vastly simplifies the wellsite. A single large-bore inlet replaces the multiple tie-in lines on a traditional frac tree, reducing non-productive time (NPT), labor costs, potential leak paths, and safety hazards. The design also features plug valves, a decades-proven technology that uses only two percent of the grease required by gate valves. Greasing takes significantly less time, plus valves are easier and less costly to maintain. Supported by qualified technicians, this integrated solution enhances safety while saving time and money.

Overview

- Designed for use with the OSL Frac Connection and Vertical Zipper Manifold
- Employs standard API-6A gaskets for seal faces
- Accommodates from 4" to 7" connections up to 15,000 psi
- Fit-for-purpose system can be used for any well and tailored to any condition or basin—ideal for demanding frac applications
- Field services include installation, on-site testing, operation, maintenance, removal, torque and testing
- A 2017 CFD analysis revealed approximately 70% less erosion compared to similar single-line designs from leading competitors[1]
- Available for rent, with service centers in every basin; fully inspected and recertified after every job

[1] Refers to the combined configuration of the Vertical Zipper Manifold, the One Straight Line Frac Connection, and the Frac Stack. Comparisons to traditional configurations assume six frac lines per well and, in both cases, the manifold will be joined together with a flanged trunk line.

Benefits

- Fewer leak paths, failure points, and potential safety hazards[1]
- Less NPT, rig-up time, and labor costs[1]
- Plug valves offer greater durability and requires less than 2% of the grease needed for gate valves
- Plug valves are lighter, more compact, and have a smaller hydraulic actuator for faster cycle time
- Valves easily closed with minimal force, resulting in elimination of potential valve cavity pressure lock
- Options include grease manifold, frac-ball launcher and coiled-tubing frac heads

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