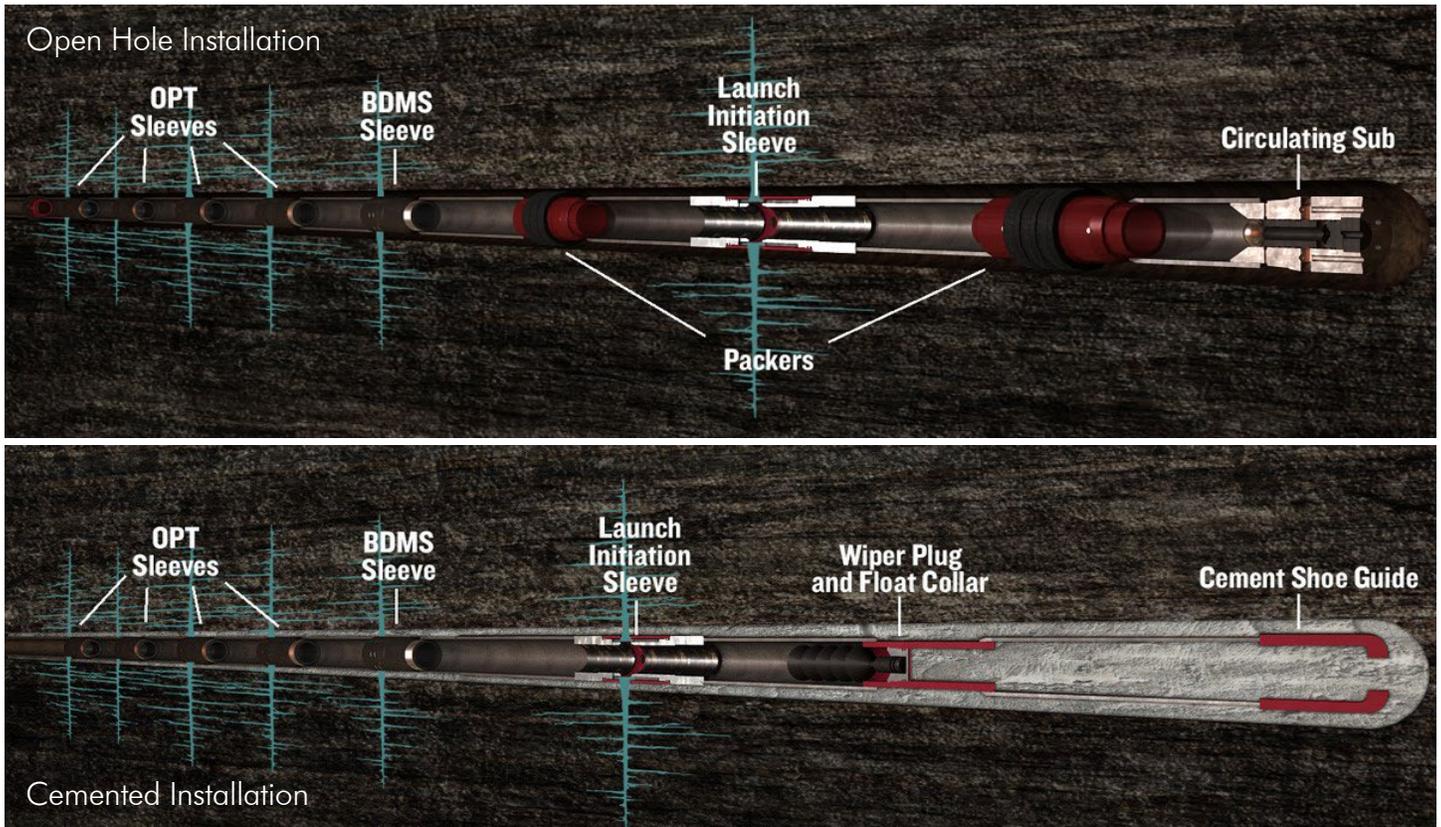


COMPLETION SYSTEMS

BDMS / BALL DROP MULTIPLE SLEEVE SYSTEM



APPLICATION OVERVIEW

The BDMS system is a ball drop, sliding sleeve activation systems that allows for multiple frac stages to be isolation and simultaneously fractured. It can be used in either open hole or cemented completion applications. By incorporating the hydraulically actuated Launch sleeve in the first stage, time and safety risk are reduced as differential pressure opens the flow ports. Clustered stages may be opened as the ball engages and opens subsequent OPT and standard BDMS sleeves which all have the same ball seat diameter. Additional cluster stages may be opened and fractured by dropping progressively larger balls. The ports on the Multi-port sleeves are configured to ensure uniform frac flow across the cluster stage.

FEATURES & BENEFITS

- Capable for high temperature, high pressure, vertical, or horizontal applications
- Can be run as a tie back or incorporate a hanger packer
- Allows up to 10 OPT sleeves per stage, resulting in 11 individual fracture port segments within a "cluster" stage
- Enables "cluster" fracturing where large sections are fractured with less restrictions
- Expands the number of frac sites for traditional ball drop
- Multiple sleeves shifted with one ball reducing time and cost of completion
- Initiation of circulation is enabled by the hydraulically actuated Launch sleeve which eliminates the need for perforation gun on location



LAUNCH HYDRAULIC SLEEVE

For sizes: 3-1/2" to 5-1/2" Completions

Hydraulically Activated for First Zone Fracture

Field Adjustable Opening Pressure

Capable of High Temperature and High Pressure applications

Full Bore ID and Small OD for Easy Installation

Designed for Both Horizontal and Vertical Applications



BDMS SLEEVE

For sizes: 2-7/8" to 5-1/2" completions

Capable for High Temperature and High Pressure Applications

Designed for Cased or Open Hole Applications

Internal Locking Mechanism to Ensure the Sleeve Remains in the Open Position after Activating

Field Adjustable Setting Pressure

Drillable Ball Seat; Full Bore after Drill-out



OPT SLEEVE

Available in 4-1/2" and 5-1/2" Completion String

Capable for High Temperature and High Pressure Applications

Designed for Cased or Open Hole Applications

One Ball can Open Up to 10 Sleeves

Easily Mill Ball Seats

Fracture Ports are Designed to Ensure Uniform Flow during Stimulation



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