

# Bulldog BD Multi-Open/Close (MOC) Sleeve

The Bulldog™ BD MOC is a ball-drop activated multistage frac system featuring a mechanical shift, multiple-open and close sleeve designed for horizontal completions. Multiple sleeves can be installed in the completion string, with each sleeve opened with a specific size ball pumped from surface. Treatments can be performed as “open-frac-close” or “open-frac”. The multi-open-close feature permits opening or closing sleeves after millout of the ball seat should well conditions dictate.

The Bulldog BD MOC is an integrated part of the production casing or liner and can be used in both cemented and uncemented applications.

## Applications

- Cemented and open-hole horizontal multistage completions
- Acid or proppant fracturing
- High-temperature applications, up to 350°F (176.67°C)



## Features

- Ball-drop operated
- Field-proven i-Valve™ shifting profiles and seal
- No explosives required on location
- Drillable cast iron ball seats for easy millout
- Ability to be closed and opened multiple times after millout of ball seat
- Compatible with dissolvable ball technology – frac balls that degrade over a calculated time period in the presence of temperature and fluid allow production operations to begin with no well intervention

## Benefits

- Increased time and cost efficiency compared with traditional plug-and-perf methods
- Ability to employ continuous pumping operations
- Shiftable sleeve to isolate zone after treatment

## Technical data

Casing size in. (mm)	Casing weight lb/ft (kg/m)	Length in. (mm)	OD in. (mm)	ID* in. (mm)	Burst rating psi (MPa)	Collapse rating psi (MPa)	Tensile rating† lbf (kN)	Temp. rating °F (°C)	Flow area in² (cm²)
4.000 (101.60)	10.5 (15.62)	49.357 (1,253.67)	4.596 (116.74)	3.312 (84.12)	9,916 (68.37)	9,442 (65.10)	182,215 (810.53)	350 (176.67)	10.0 (64.52)
4.500 (114.30)	11.6 - 13.5 (17.26 - 20.09)	44.590 (1,132.59)	5.670 (144.02)	3.930 (99.82)	10,000 (68.94)	10,000 (68.94)	225,000 (1,000.85)	350 (176.67)	12.0 (77.40)
4.500 (114.30)	15.1 (22.47)	51.2 (1,301.50)	5.670 (144.02)	3.757 (95.43)	12,000 (82.74)	12,000 (82.74)	324,640 (1,430.73)	350 (176.67)	12.0 (77.40)

\* ID after ball seat millout

† Tensile rating excluding end connections

Note: Premium threading will affect overall length.