

Voyager Frac Sleeve

The Voyager™ frac sleeve is a ball-drop activated frac sleeve for open hole completions. The Voyager frac system was specifically designed to remove any components that limit the performance of the end user's well. For each casing weight, the sleeves, packers and other equipment have been designed to exceed the casing ratings outlined in API 5CT.

For each ball pumped from surface, a corresponding sleeve downhole is opened, thereby allowing communication between the casing ID and the formation of interest.

The stimulation operation is continuous with balls of increasing OD pumped from surface as the operation works towards the heel of the wellbore.



Features

- Sleeves are designed to API 5CT ratings for casing
- Ball-drop activated
- Drillable cast iron seats for optimal drill out times
- Compatible with dissolvable ball technology - frac balls that degrade over a calculated time period with various temperatures and fluids

Benefits

- Efficient ball drop completion that allows well production immediately after stimulation
- May be milled out in open or closed positions
- When combined with dissolvable balls, the sleeves can begin production with no further intervention required
- New ball technologies allow for high stage count applications (75+)
- No handling pup joints required

Applications

- Acid or proppant stimulations
- Completions requiring reliable, single point entry
- High stage count designs
- Production

Technical Data

Size in. (mm)	Weight range lbf (kg/m)	⁽³⁾ Grade ksi	⁽¹⁾ Body I.D. in. (mm)	O.D. in. (mm)	⁽²⁾ Length in. (mm)	⁽⁴⁾ Burst psi (kPa)	⁽⁴⁾ Collapse psi (kPa)	⁽⁴⁾ Tensile lbf (daN)	Temp. rating °F (°C)	Flow Area in ² (cm ²)
⁽⁵⁾ 4.500 (114.3)	11.60 - 15.10 (17.26 - 22.47)	110	3.930 (99.80)	5.600 (99.80)	30.0 (762.2)	10,000 (68,948)	10,000 (68,948)	275,000 (122,326)	266 (130)	12.59 (81.23)
⁽⁵⁾ 4.500 (114.3)	11.60 - 13.50 (17.26 - 20.09)	80	3.930 (99.80)	5.875 (149.2)	28.0 (711.2)	10,170 (70,120)	8,540 (58,881)	307,000 (136,560)	350 (177)	12.56 (81.03)
4.500 (114.3)	11.60 - 13.50 (17.26 - 20.09)	110	3.930 (99.80)	5.875 (149.2)	28.0 (711.2)	13,983 (96,409)	13,200 (91,011)	422,000 (187,715)	350 (177)	12.56 (81.03)
4.500 (114.3)	13.50 - 15.10 (20.09 - 22.47)	80	3.930 (99.80)	5.875 (149.2)	28.0 (711.2)	11,944 (82,351)	11,202 (77,235)	358,686 (159,552)	350 (177)	12.56 (81.03)
4.500 (114.3)	13.50 - 15.10 (20.09 - 22.47)	85	3.930 (99.80)	5.875 (149.2)	28.0 (711.2)	12,785 (88,149)	11,986 (82,641)	381,262 (169,594)	350 (177)	12.56 (81.03)
4.500 (114.3)	13.50 - 15.10 (20.09 - 22.47)	110	3.930 (99.80)	5.875 (149.2)	28.0 (711.2)	15,000 (103,421)	15,000 (103,421)	493,193 (219,383)	350 (177)	12.56 (81.03)
⁽⁵⁾ 5.500 (139.7)	20.00 - 23.00 (29.76 - 34.23)	110	4.716 (119.80)	7.125 (181.0)	30.0 (762.2)	14,533 (100,202)	13,717 (94,575)	754,325 (335,540)	350 (177)	17.9 (115.48)

⁽¹⁾ Minimum I.D. will depend on end connections and seat I.D.

⁽²⁾ Overall length may vary per thread connection

⁽³⁾ 80ksi and 110ksi material grade is standard; other material grade options available upon request

⁽⁴⁾ Tool Ratings exclude end connections

⁽⁵⁾ Tools do not meet API 5CT ratings