

# Saltel Xpandable FracPacker

High-pressure multistage stimulation packer



Rated up to 15,000 psi  
[103 MPa]



Rated up to 302 degF  
[150 degC]

## APPLICATIONS

- Openhole hydraulic fracturing
- Openhole ball-drop multistage fracturing

## BENEFITS

- Prevents fluid migration in the annulus
- Seals in any hole shape and condition, including oval, out-of-gauge, and irregular boreholes
- Seals reliably through thermal cycling and temperature fluctuations
- Minimizes cost with no special well fluid requirements for expansion
- Eliminates waiting with on-demand expansion and immediate sealing
- Controls pressure on the formation to provide a good seal without creating a high-stress point
- Ensures that the fracture initiates in the correct place
- Eliminates risk of premature setting when working the string to pass through doglegs and tight spots

## FEATURES

- Proprietary expandable steel technology
- Simplified setting process and rapid installation
- Compatibility with all standard casings
- Burst and collapse ratings equivalent to casing ratings
- API Spec 190H V1-qualified packer
- Maintenance of casing rating by avoiding extra connections and casing ID reduction
- Significantly greater robustness compared with rubber to withstand reciprocation and rotation
- Built-in safety feature if expanded in front of a washout

Saltel Xpandable FracPacker\* high-pressure multistage stimulation packers isolate zones during openhole ball-drop hydraulic fracturing in unconventional reservoirs. They are based on proprietary expandable stainless steel technology.

## Activation procedure

These frac packers are made up to a casing string that is run into the open hole. Rotation is possible while running in, and full casing characteristics are maintained. Once in position, the lower end of the casing string is sealed and the internal pressure increased by pumping from surface.

This pressure is transmitted through the expansion port to the packer's integral stainless steel sleeve. The sleeve expands out into the annulus between the casing and borehole, conforming to the shape of the wellbore and isolating the annulus below the packer from the annulus above.

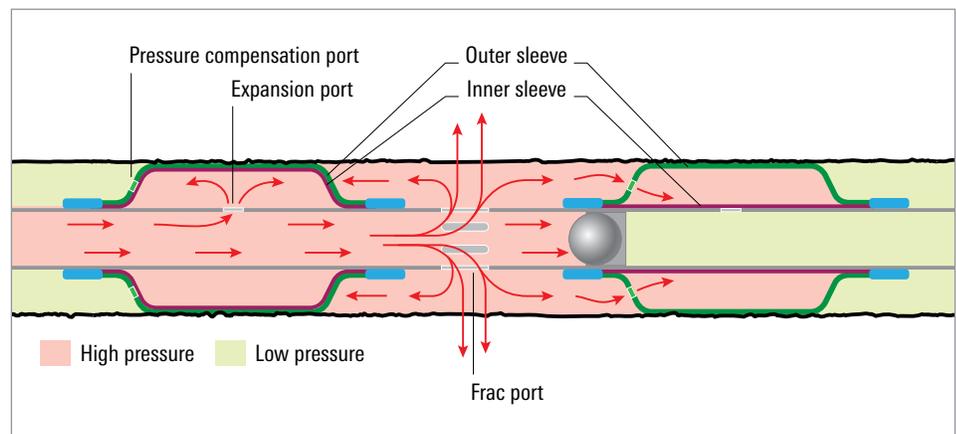
The patented pressure-balanced double sleeve can retain a seal despite cycling temperatures and varying differential pressures in the annulus. Expansion of the sleeve also centralizes the casing.

## Expansion port with valve

The expansion port features a valve system integrated within the casing thickness; this valve acts as a safety feature. If the packer is expanded in front of a severe washout, the valve closes, preventing fluid loss.

## Reliable sealing

These high-pressure frac packers achieve sealing with a thin layer of bonded elastomer (HNBR). Dynamic seals can be mounted between steel rings to enhance sealing capacity and increase the temperature range. The end fittings protect the expandable sleeve while running in the well.



(1) All the packers in the string are expanded simultaneously using tubing pressure. (2) To fracture a zone, a ball is dropped to seal off the zones below. Pumping the fracturing fluid opens the frac port above the ball. (3) High-pressure communication through the upper packer's expansion port balances the pressure with the annulus below. (4) At the same time, communication through the lower packer's pressure compensation port balances the pressure between the packer's inner and outer sleeves and the annulus above. (5) The lower packer's inner sleeve is pushed inward while the outer sleeve is pushed out against the formation, reinforcing the packer seal. (6) The pressure-balanced sleeves can withstand high fracturing pressures without collapsing.

# Saltel Xpandable FracPacker

## Saltel Xpandable FracPacker High-Pressure Multistage Stimulation Packer Specifications

### 4.5-in Double-Sleeve Design†

	Standard Seals	Dynamic Seals
Max. service temperature, degF [degC]	250 [121]	302 [150]
Cycling temperature, degF [degC]	250 to 70 [121 to 21]	302 to 70 [150 to 21]
Run in hole external OD, in [mm]	5.5 [140]	5.6 [142]
Sealing contact length, ft [m]	2.5 [0.8]	2.5 [0.8]
Tool ID	As per casing joint	As per casing joint
Expandable sleeve material	Austenitic stainless steel	Austenitic stainless steel or nickel-based alloy
Expandable sleeve thickness, in [mm]		
Internal	0.08 [2]	0.08 [2]
External	0.12 [3]	0.12 [3]
Nominal borehole diameter, in [mm]	5.875 to 6.125 [149 to 156]	5.875 to 6.125 [149 to 156]
Max. borehole diameter, in [mm]	6.60 [168]	6.60 [168]
Ovalized borehole	Yes	Yes
Differential annular pressure rating across packer, psi [MPa]	Up to 10,000 [69]	Up to 15,000 [103]
Basepipe length, ft [m]	10 [3.05]	10 [3.05]
Basepipe torsional load rating	As per casing joint torque rating	As per casing joint torque rating
Basepipe tensile strength rating	94% of casing rating	94% of casing rating

†The double-sleeve model is not available in Europe.

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