

Octopus retrievable slimhole ESP packer

Reduce OPEX and risk
in small diameter applications

The patented **Octopus™ retrievable slimhole electrical submersible pumping system packer (SH ESP packer)**—the industry's first concentric ESP packer built for casing and liners 5 in. and smaller—provides customers with a reliable and, flexible solution for deploying and retrieving a qualified well barrier in slim inside diameter (ID) applications. Unlike small-size conventional ESP packers that have an eccentric design, the new Octopus SH ESP packer features a concentric design to keep it centered in the wellbore during run-in and retrieval. This significantly reduces the risk of hang-ups, making the packer ideal for deep, deviated, and/or lateral wells.

Flexible feedthrough options

With three conduits oriented around the centralized through-tubing bore, the Octopus SH ESP packer enables passage of ESP cable, chemical injection lines, tubing-encapsulated cable (TEC) lines, and/or intelligent well

system (IWS) fiber-optic cables while maintaining a full seal in the wellbore.

In ESP applications, the cable is split into three single phases. Each phase is encapsulated in $\frac{3}{8}$ in. 316L stainless steel and sealed with metal-to-metal compression fittings. The penetrator can be rated up to 5,000 V and 257 amps.

Enhanced construction and sealing

Leveraging multiple generations of field-proven designs, the Octopus SH ESP packer's construction has been streamlined to reduce part count and complexity. It features a single, solid mandrel and comes standard with an ISO 14310 V3-qualified hydrogenated nitrile butadiene rubber (HNBR) sealing element to minimize potential leak paths and ensure a premium connection below the seal. A debris sleeve protects the penetrator conduits from flow erosion.

Applications

- Wells requiring a barrier with feedthrough capability
- Deep, deviated, and/or horizontal wells
- Well completion, recompletion, and remediation
- Slim-ID casing and liners

Benefits

- Minimizes tool hang-up risks during deployment and retrieval
- Delivers reliable, V3-qualified sealing performance
- Provides a premium, leak-free connection below the packing element
- Requires no intervention for actuation or retrieval
- Ensures successful element pack-off
- Eliminates flow erosion on conduits

Simple and reliable operation

Once at depth, the packer requires only applied tubing pressure to hydraulically activate its slips and packing element. A dual piston, which maximizes the setting force, helps to ensure the element packs off fully. An internal locking device then maintains the seal while the packer's bidirectional slips prevent any movement in the casing.

Trouble-free retrieval

When needed, the Octopus SH ESP packer can be retrieved on the tubing string without intervention by simply applying a straight pull up to shear-release the tool. The packer's concentric design keeps it centered in the wellbore during retrieval, helping to prevent deflections against the wellbore ID, hang-ups, and unplanned interventions. For added flexibility, the shear threshold can be adjusted in the field, and timed setting slips reduce the force required to retrieve the packer.

The Octopus SH ESP packer is fully compatible with multiple ESP systems from Baker Hughes, a GE company (BHGE), including the **CENesis Curve™ tight-radius ESP system**, which is designed for highly deviated, small-diameter applications

Contact your local BHGE representative today to learn more about how the Octopus retrievable SH ESP packer reduces costs and risks while enabling enhanced production from small-diameter wells.

Parameter	4½ in.	5 in.
Maximum OD	3.783 in. (96.08 mm)	4.157 in. (105.58 mm)
Minimum ID	1.767 in. (44.88 mm)	
Length	66 in. (1577 mm)	
Packing element material	HNBR (standard)	
Differential pressure rating	5,000 psi (34.47 MPa)	
Setting pressure	3,000–4,000 psi (20.68–27.58 MPa)	
Shear rating	Adjustable up to 50,000 lb (222 kN)	
Cable size (ESP application)	3 x #6 AWG power cable encapsulated in 0.375 in. x 0.35 in. 316L control line	
Metallurgy	Customer specified	
Upper connection	2 ³ / ₈ in. 4.6# EU pin x pin	
Lower connection	2 ³ / ₈ in. 4.6# EU pin x pin	

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