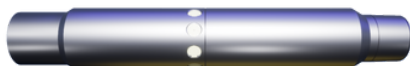


Raptor OC™

MULTISTAGE SYSTEM



OVERVIEW

Interra Energy's Raptor OC™ (Open Close) multistage system uses mechanically shifted sleeves that are opened with our Velocity™ coiled tubing shifting tool. Operators have the option of pumping the treatment down the tubing or annulus.

Interra's proprietary Raptor OC coil sleeve has a two-way shifting internal sleeve that provides full ID for future wellbore intervention. The positive-lock system also provides verification of sleeve position at surface. The internal sleeve pulls up to open preventing unintended shifting during cementing and deployment of coiled tubing bottom hole assemblies (BHAs).

The Raptor OC sleeve additionally provides operators future fracture/recompletion and production options throughout the life of the well. Operators can optimize hydrocarbon recovery through manipulation of the internal sleeve to shut off water and gas.

OPERATION

The Raptor OC coil sleeves are installed as part of the string during the casing installation. The tools are spaced within the wellbore based on client requirements to effectively target the reservoir. The system can be run in a cemented or open hole completion.

Interra's Velocity shifting tool is then deployed on coiled tubing (or jointed pipe) to open the first stage. The shifting tool is pulled upward to shift the sleeve open providing reservoir access for stimulation. The Raptor OC sleeve provides the option of immediately closing each sleeve at the completion of the treatment.

If desired, the operator can run the Velocity shifting tool in conjunction with the Raptor™ annular frac packer to provide an additional barrier of isolation below the BHA. The shifting tool is uniquely positioned below the annular frac packer protecting it from proppant during stimulation.

SPECIFICATIONS

Raptor OC Slimhole sleeve

Tool Size mm (in.)	Casing Weight kg/m (lb/ft)	Min. ID mm (in.)	Max. OD mm (in.)	Make up Length m (ft)
114.3 (4.500)	17.26 (11.6)	101.60 (4.000)	139.70 (5.500)	0.68 (2.23)

Raptor OC Heavy Duty sleeve

Tool Size mm (in.)	Casing Weight kg/m (lb/ft)	Min. ID mm (in.)	Max. OD mm (in.)	Make up Length m (ft)
114.3 (4.500)	17.26 (11.6)	101.60 (4.000)	146.05 (5.750)	0.83 (2.72)
	20.09 (13.5)	99.57 (3.920)		
	22.47 (15.1)	97.18 (3.826)		

Features & Benefits

- ★ Unlimited stimulation stages.
- ★ Unrestricted full ID wellbore.
 - ⊕ Allows for future remediation and restimulation.
 - ⊕ Does not require drill out.
- ★ Circulate screen-outs quickly and easily, reducing downtime.
- ★ Pull up to open sleeve prevents unintended shifting.
- ★ Long reach open and close capability.
- ★ Raptor sleeve positive-lock system provides verification of sleeve position.
- ★ Provides unlimited open/ close capability for:
 - ⊕ Selective stimulation and production for optimized recovery.
 - ⊕ Zone closure immediately after stimulation to reduce sand inflow and promote fracture healing.
- ★ Specially designed cement/debris sealing system ensures reliable tool activation.
- ★ Can be run in cemented or open hole completions.
- ★ Does not require a toe port to activate first stage.
- ★ Does not require pup joints.