Flexisert™ I-PCP Anchor

Weatherford's *Flexisert* I-PCP anchor takes insert progressing cavity pump (PCP) technology to a new level by enabling I-PCP anchors to be run in wells not equipped with a pump seating nipple (PSN). The *Flexisert* I-PCP anchor allows insert PCP anchors to be run, landed, operated, and removed without pulling the tubing string, thus enabling cost saving advantages associated with well servicing time and pump changes. The cost-saving advantages are attributed to the unique design of the *Flexisert* I-PCP anchor, which incorporates several critical functions such as preventing rotation of the pump, providing a seal between the pump intake and high pressure discharge, and preventing axial movement of the pump due to pressure differential across the anchor's seal.

The *Flexisert* I-PCP anchor is currently available for 2 7/8- and 3 1/2-in. production tubing and can pass through common tubing restrictions such as a PSN and subsurface safety valves. The result is an insertable PCP system that provides a compact and practical solution for reducing nonproductive time (NPT) and costs associated with pulling tubing when changing or replacing a tubing-installed PCP anchor.

Applications

- Wells completed using 2 7/8- or 3 1/2-in. production tubing where insertable PCP anchors are applicable and no provision for a conventionally deployed nipple-seated insert pump could be provided.
- Provides an effective solution when a PSN with unknown specifications is installed or located incorrectly.

Features, Advantages and Benefits

The *Flexisert* I-PCP anchor:

- Enables running of I-PCP anchors in wells not equipped with a PSN;
- Allows changes in pump setting depth, pump volume, and lift changes without pulling the tubing string;
- Can be deployed into the tubing string in one trip;
- Provides a seal and prevents rotation and axial movement; a separate torque anchor (no-turn tool) is not required;
- Downhole monitoring equipment can remain in place during pump servicing;
- Significantly reduces well servicing time and pump-change costs.

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Options

- Available for both 2 7/8- and 3 1/2-in. production tubing
- Available for most I-PCP models (confirm with local Weatherford contact)

Related Products

Insertable PCP anchors:

- Arrowhead® I-PCP
- Cloverleaf I-PCP

Specifications

Configuration		
Tubing configuration	2 7/8-in. EUE/NUE (6.50 ft-lb)	3 1/2-in. EUE/NUE (9.30 ft-lb)
Tubing nominal ID/drift (in., *mm*)	2.44/2.35 *62.00/59.61*	2.99/2.87 *75.10/72.82*
Critical Dimensions		
Tool assembly length (in., *mm*)	47 *1,193*	50 *1,270*
Maximum tool pump adapter/cone OD (in., *mm*)	2.29 *58.17*	2.75 *69.85*
Pump adapter head threads	1 1/4 NPT box	1.900 EUE box
Uncompressed slip/spring assembly OD (in., *mm*)	3.01 *76.35*	3.47 *88.11*
Minimum mandrel flow ID (in., *mm*)	1.12 *28.45*	1.50 *38.10*
Bottom retainer coupling threads	1 1/4 NPT (11.50 TPI) box	API 1.90 EUE 10 RD box
Operating Specifications		
Minimum tubing ID-drifts up to 12-in. length	2.31	2.80
Maximum tubing OD (in., *mm*)	2.63 *66.80*	TBD
Maximum operating torque, ft-lb	470	700
Maximum differential pump pressure (psi, *bar*)	3,500	3,500
Maximum downward anchoring resistance* (lb, *kg*)	16,400 *7,454*	24,600 *11,181*
Maximum upward anchoring resistance** (lb, *kg*)	4,680 *2,127*	7,030 *3,195*
Maximum elastomer working temperature (°F, *°C*)	250 *121*	250 *121*
Installation/Removal Specifications		
Minimum downhole seating force to set anchor (lb, *kg*)	5,000 *2,272*	7,500 *3,409*
Downhole pull force range to shear anchor (lb, *kg*)	5,000 to 6,000 *2,272 to 2,727*	7,000 to 8,400 *3,181 to 3,818*

*Based on maximum pump differential pressure of 3,500 psi (24.13 MPa).
**Based on maximum negative pump differential pressure of 1,000 psi (6.89 MPa).

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