

CERTIS

High-integrity reservoir test isolation system

APPLICATIONS

- Downhole reservoir testing
- Deviated and deepwater wells
- HPHT and hostile environment wells

BENEFITS

- Reduces rig time with single-trip capability
- Provides permanent packer benefits in addition to single-run retrieval
- Eliminates pipe manipulation with hydraulic setting mechanism
- Reduces the number of string components
- Eliminates the need for drill collars, slip joints, jars, and safety joints
- Kills well more efficiently with below-packer circulating valve (BPCV)
- Improves seal and testing reliability
- Increases measurement accuracy by eliminating downhole gauge movement during well testing when gauges are hung off packer

FEATURES

- Single-trip capability for running, setting, and retrieving with test string
- Annulus-pressure-activated hydraulic setting mechanism
- Subsea tree and gun positioning before isolation packer setting
- Stinger seal engagement in sealbore at all times
- Optimal large-gun sizing hanging from packer body
- Optional BPCV
- Optional “open-perf” adapter
- Straight-pull primary release
- Built-in contingency release mechanism
- H₂S service per NACE MR0175/ISO 15156
- Double-grip slip design for standard version and barrel slip design for HPHT version
- ISO 14310 V0 for zero-bubble acceptance criterion on packer elements

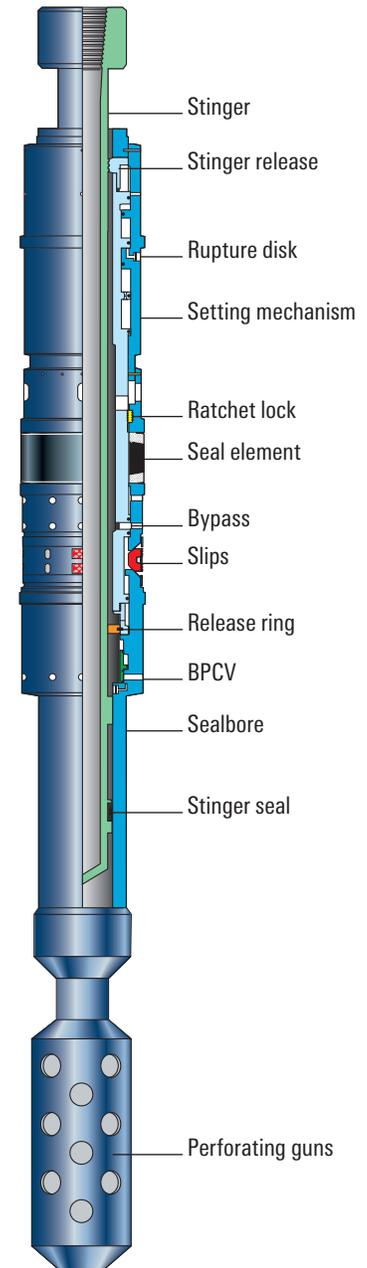
The CERTIS* high-integrity reservoir test isolation system combines many features of a conventional retrievable packer with those of a hydraulic-set permanent packer, including a built-in floating seal assembly that eliminates the need for slip joints and drill collars to set the packer. When used as part of the Quartet-HT* high-temperature downhole reservoir testing system or the Quartet* downhole reservoir testing system, the CERTIS system significantly reduces the number of tools in the string.

Four main sections are contained in the CERTIS isolation system: the setting mechanism, packer body, stinger, and polished sealbore. An optional BPCV section can be incorporated in the system to kill wells more efficiently. When the test is complete, the BPCV can be opened to reverse-circulate migrated gas from below the packer prior to releasing the sealing element. The optional open-perf adapter can be used when running the packer for barefoot tests or in casings with open perforations to apply annulus pressure and set the packer.

The system is run into the hole with the stinger locked to the packer body and the stinger seal positioned in the sealbore. When the system reaches the required depth, annulus pressure is applied to activate the hydraulic setting mechanism. Hydrostatic pressure sets the bidirectional slips, closes the packer bypass, and energizes the sealing element. A positive ratchet mechanism then locks the packer in the set position and retains the applied setting forces.

Once the packer sets and the stinger unlocks and is released from the packer body, the seals are free to move in the sealbore—operating similarly to a production packer with floating-seal assembly. A straight pull disengages the lock ring and shears the retaining pins in the release ring, allowing the slips to relax and release the packer. Continued pulling reopens the packer bypass to eliminate swabbing when pulling out of the hole.

The perforating guns are hung from the packer body rather than from the stinger to ensure that the tubing-conveyed perforating guns remain at depth after setting the CERTIS isolation system.



CERTIS high-integrity reservoir test isolation system.

The HPHT version of the CERTIS system has undergone an extensive HPHT testing and qualification program defined by a Schlumberger pressure and temperature mission profile and is qualified per standard ISO 14310-V3.

Specifications	CERTIS System				HPHT CERTIS System			Large-Bore CERTIS System	
	HPPK-AB				HPPK-DA [†]			HPPK-HA	
Casing size and weight, in; lbm/ft [†]	7; 26	7; 29	7; 32	7; 35	7; 32	7; 35 [§]	7; 38	9%; 47–53.5	9%; 58.4–61.1
Max. OD, in [mm]	6.091 [154.7]	5.999 [152.4]	5.909 [150.1]	5.819 [147.8]	5.907 [150.0]	5.817 [147.8]	5.733 [145.6]	8.348 [212]	8.188 [207.9]
Tool ID, in [mm]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]	2.25–2.94 [57–75]	2.25–2.94 [57–75]
Pressure ratings									
Differential, psi [MPa]	8,000 [55]	12,000 [83]	12,000 [83]	12,000 [83]	15,000 [103]	15,000 [103]	15,000 [103]	12,000 [83]	12,000 [83]
Max. annular, psi [MPa]									
Before setting	16,000 [110]	16,000 [110]	16,000 [110]	16,000 [110]	17,500 [121]	17,500 [121]	17,500 [121]	16,000 [110]	16,000 [110]
After setting	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]	23,000 [159]	23,000 [159]	23,000 [159]	20,000 [138]	20,000 [138]
After setting without BPCV	na ^{††}	na	na	na	25,000 [172]	25,000 [172]	25,000 [172]	20,000 [138]	20,000 [138]
Max. tubing, psi [MPa]									
After setting	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]	23,000 [159]	23,000 [159]	23,000 [159]	20,000 [138]	20,000 [138]
After setting without BPCV	na	na	na	na	25,000 [172]	25,000 [172]	25,000 [172]	20,000 [138]	20,000 [138]
Min. setting (hydrostatic plus applied pressure), psi [MPa]	5,000 [35]	5,000 [35]	5,000 [35]	5,000 [35]	7,500 [52]	7,500 [52]	7,500 [52]	5,000 [35]	5,000 [35]
Temperature rating, degF [degC]	350 [177]	350 [177]	350 [177]	350 [177]	400 [204]	430 [221]	400 [204]	350 [177]	350 [177]
Length with 20-ft [6.1-m] sealbore, ft [m]	46 [14]	46 [14]	46 [14]	46 [14]	48.3 [14.7]	48.3 [14.7]	48.3 [14.7]	37.64 [11.47]	37.64 [11.47]
Service (NACE MR0175/ISO 15156)	H ₂ S, acid								
Polished borehole receptacle ID, in [mm]									
2 ⁷ / ₈ -in stinger	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]	3.25 [82.55]
3 ¹ / ₂ -in stinger	na	4.00 [101.6]	4.00 [101.6]						
Stinger max. tensile load (release ring ± 5%), lbf [kN]									
2 ⁷ / ₈ -in stinger	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]	95,000 [423]
3 ¹ / ₂ -in stinger	na	100,000 [445]	100,000 [445]						
Connections for 2 ⁷ / ₈ -in stinger									
Top	3 ¹ / ₂ PH-6								
Bottom (crossover sub)	2 ⁷ / ₈ EUE								
Connections for 3 ¹ / ₂ -in stinger									
Top	na	4 ¹ / ₂ PH-6	4 ¹ / ₂ PH-6						
Bottom (crossover sub)	na	3 ¹ / ₂ EUE	3 ¹ / ₂ EUE						
Hanging load, lbf [kN]	15,000 [67]	15,000 [67]	15,000 [67]	15,000 [67]	25,000 [111]	25,000 [111]	25,000 [111]	50,000 [222]	50,000 [222]

Notes: Aflax element available for HPPK-DA (all sizes) as well as HPPK-AB (29-lbm/ft casing weight)

[†] Qualification per ISO 14310/API Spec 11D1 V3

[‡] Assumes nonrestricted casing connection ID

[§] ISO 14310 V0 for zero-bubble acceptance on packer elements

^{††} na = not applicable