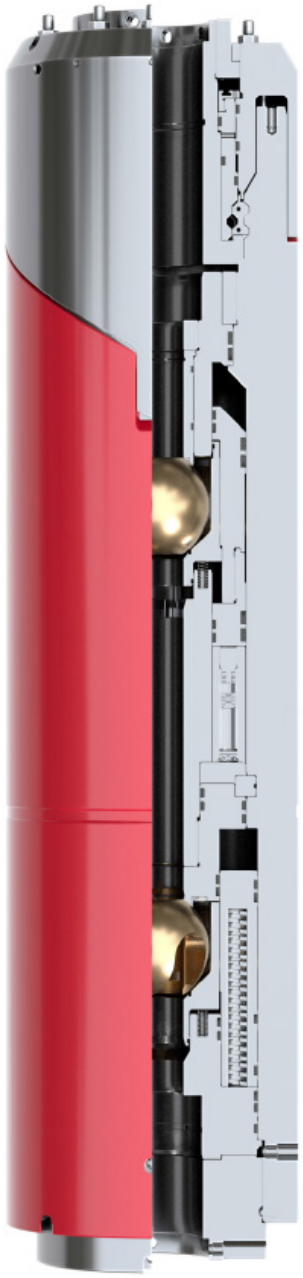
Veto™ 3 Subsea Safety Tree

PRIMARY BARRIER AND LANDING STRING UNLATCH SYSTEM FOR WELL TESTING OPERATIONS

OVERVIEW

As a part of the Halliburton premier Veto™ 3 subsea safety system, the Veto 3 subsea safety tree is a hydraulically operated dual "fail-safe closed" valve system designed as a primary well control barrier combined with a passively orienting latch mechanism. The subsea safety tree is a critical part of any landing string flowing hydrocarbons to a semi submersible or dynamically positioned drilling vessel.

Deployed within the drilling blowout preventer stack, the subsea safety tree provides dual barrier well isolation, along with a means of disconnecting the landing string. Once unlatched, the subsea safety tree leaves the well with dual safety barriers until re-latching and recommencement of required operations, which is a critical safety requirement in the offshore environment.



FEATURES

- Dual "fail-safe closed" independently operated ball valves
- Hydraulically operated latch with secondary mechanical unlatch feature
- Mechanical unlatch ability post-shear utilizing an overshot latch retrieval tool
- Passively orienting latch system
- Ball valves provide full working pressure well isolation from below
- Upper ball valve testable to full working pressure from above
- Low-pressure pump through capability from above
- Coiled tubing (CT) cutting capability
- Chemical injection point between balls with dual check valves utilizing metal to metal seats with elastomeric backups
- Single-pass-through hydraulic port allows downhole function or chemical injection
- Dual sealing barrier from bore for well isolation
- Halliburton high-integrity tool joints
- Design verified by third-party certifying authority

BENEFITS

- Passive latch system provides positive latching, removing the need to rotate the landing string to achieve engagement, thus eliminating potential issues with landing weights and string torsion
- Latch position indicator provides easily visible indicator to confirm latch status when passing through the rotary table
- Provides ability to pump fluids through closed balls from above for well access if required
- Dual sealing elements installed in critical areas of well isolation to increase reliability
- All connections are locked from rotation with the Halliburton lock mechanism, which allows each connection to be fully shouldered out, thus increasing overall strength without the need to back off connections for alignment
- High tensile capacity helps enable safe deployment of heavy drill stem testing (DST) strings

Equipment Specifications

Applicable Standards	
API 6A	Specification for Wellhead and Christmas Tree Equipment
API 14A	Specification for Surface-Controlled Subsurface Valves

Operating Limits	
Working Pressure, psi (bar)	15,000 (1,034)
Bore Test Pressure, psi (bar)	22,500 (1,551)
Tensile Load[1] @ 0 psi, lbf (kN)	900,000 (4,003)
Tensile Load[1] @ Working Pressure, lbf (kN)	600,000 (2,669)
CT Cutting Capability	Standard: 1-1/2 in. O.D., .156 WT, 90 Ksi Optional: 1-3/4 in O.D., .203 WT, 90 Ksi
Minimum Working Temperature, °F (°C)	32 (0)
Maximum Working Temperature, °F (°C)	350 (177)
Service	H_2S
Bore, in. (mm)	3 (76)
Outer Diameter, in. (mm)	14 (356)
Overall Length, in. (mm)	59-1/4 (150)
Weight, lb. (kg)	2,187 (992)
End Connections	5 in. Stub Acme

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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