

VetcoGray DHXT - Deepwater Horizontal Tree and Integral Control System

The VetcoGray deepwater horizontal tree (DHXT) is a key component of the D-Series Deepwater Subsea System

Our VetcoGray DHXT is a next-generation deepwater tree engineered for up to 15,000 psi and 10,000 ft. Part of our new D-Series of modular short-delivery subsea tree systems, this product incorporates more than 25 years of design heritage and subsea experience.

The D-Series package includes the integral VetcoGray 'ModPod' field proven control module which is powered by SemStar5™ – a new generation of open architecture subsea control and instrumentation systems.

The tree system is offered with a high level of functionality, quality and service. Additional enhanced quality packages are available as options to meet specific customer requirements.

The VetcoGray DHXT offers lowest installed cost, minimizing rig and ROV operations. Value, efficiency and reliability are standard.

Key features

From the outset our VetcoGray DHXT was designed to be a flexible solution. Functionality was defined with input from both major and independent oil and gas companies, as well as incorporating common project requirements to meet client standards.

The VetcoGray DHXT has three primary configurations:

- DHXT-SP: Standard Production tree
- DHXT-EP: Enhanced Production tree
- DHXT-GP: Gas Lift Production tree

In addition, design flexibility allows the SP, EP and GP configurations to be supplied in a full-bore DHXT-DP Drill-through Production configuration. All systems can be configured as water injection, gas injection or water alternating (WAG) systems.

Modular design

A modular concept is carried through all major components of the tree. The modular design approach maximizes design inheritance. The modular tree frame optimizes structural integrity at minimum weight.

Integral E-H multiplexed controls are provided using the 'ModPod' subsea control module.

The modular approach used on the VetcoGray DHXT ensures that we can pre-provision raw material, allowing us to offer very competitive delivery times.



VetcoGray DHXT-SP

- Tree operating envelope up to 15,000 psi (1,035 bar) and depths up to 10,000 ft. All systems qualified to industry standards
- Tree system is optimized to minimize weight; in the SP configuration the tree weight is less than 90,000 lbs (40 tonne)
- Configured for guidelineless funnel down installation
- Rig flexibility and easy handling are offered by a small deck footprint 15' W x 16' D x 12' H (180" x 192" x 144")
- DHXT uses the well-known and industry-proven VG300 valve system as standard; all primary valves are fail-safe close with linear ROV overrides; production side valves are 5½" HH trim, annulus side valves are 2½" EE trim
- Standard temperature class of the DHXT system is P-U (0°F to 250°F); testing is carried out to PSL 3 with 3G option
- To ensure efficient BOP operations the tree top plate is maintained flush. Additionally, an extended length mandrel is provided
- The tree connector is from our field-proven and well-known VetcoGray H4 family; the DWHT-H4 connector has a bending capacity of 5.25 MM ft-lb
- Chemical injection is offered on both annulus and production bores
- The control system uses the independently retrievable ModPod control module, and the tree design incorporates multiple pressure, temperature and sand detection sensors; the sand detector is ROV retrievable
- Up to 9 hydraulic and 2 electrical or fibre-optic connections to downhole functions are incorporated in the standard system design
- The DHXT and controls package incorporates an option for the SemStar5-R remote DHPT or Smart Well canister
- The standard flow line connection is a 5" vertical clamp connection system (VCCS); this is a field-proven connection system that has demonstrated very efficient installation times and minimizes ROV intervention
- The production choke on the SP system is a VetcoGray 4" Series 74, ROV retrievable choke
- The VetcoGray DHXT standard tubing hanger is HT-2 configured (dual plug); the system can however be configured for an HT-1 (1 plug + ITC) configuration if required; nominal plug size is 5"

VetcoGray DHXT-EP

The VetcoGray DHXT-EP is an enhanced production tree system offering additional functionality. The annulus wing block is extended to include additional valves and sensors for improved annulus pressure management.

VetcoGray DHXT-GP

The VetcoGray DHXT-GP is an enhanced production tree system offering gas lift functionality. Additions to the standard system are: gas lift choke, dual-bore flowline connector and additional sensors.



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