



Standard Horizontal Subsea Trees

Integrated offshore offering for reliable, high-quality, and capital-efficient performance



OneSubsea

A Schlumberger Company

Standard Horizontal Subsea Trees

Through standardized processes, common core components, and qualified, field-proven assemblies, OneSubsea can design and deliver standard horizontal subsea trees anywhere globally **within 12 months**.

These highly configurable solutions are designed to bring greater efficiency and reliability to subsea operations, enabling project viability and helping you meet a range of functionality requirements while driving down capex.



Advantages

Since the development of the SpoolTree* horizontal subsea tree system in 1994, OneSubsea has installed more than 1,000 systems around the world, making the horizontal design an industry standard. Horizontal subsea tree systems offer the lowest initial capex and provide a universal design for operational efficiency in multiple fields. The latest evolution is the standard horizontal tree, which utilizes existing OneSubsea qualified and field-proven technology that can be configured to meet global functional requirements to deliver maximum capital efficiency.

Flexible Functionality

- Modular and customizable system
 - Guideline-compatible or guidelineless installation
 - Shallow- or deepwater applications up to 10,000-ft [3,048-m] water depth
- **10K**—Rated to 10,000 psi [689 bar]
- **15K**—Rated to 15,000 psi [1,034 bar]
- **FasTrac*** subsea tree program—proven solution for significantly reduced lead times

The standard horizontal tree is built from a suite of preauthored quality control, material, welding, and coating specifications that simplify and expedite our execution processes. OneSubsea works with approved vendors to ensure that they can manufacture the required components, enabling high confidence in quality and lead time.

Quality Control

The QC requirements for the subsea tree are in accordance with API Specifications 6A and 17D. Our facilities are certified per API Q1, and our strategic subcontractors are certified to ISO 9001. Surveillance by independent competent bodies facilitates preengineering of materials, which enables preordering and, in certain cases, stocking them to secure lead time and protect schedule. Surveillance by customers is available during factory-acceptance testing.

Materials

All material specifications used conform to API 6A and API 17D and were chosen on a component-by-component basis. Pressure-containing components additionally conform to DNV GL recommended practices (RP) for steel forgings for subsea applications (DNVGL-RP-0034). A range of standardized material options is available based on component criticality, manufacturability, and environmental compatibility.

Welding

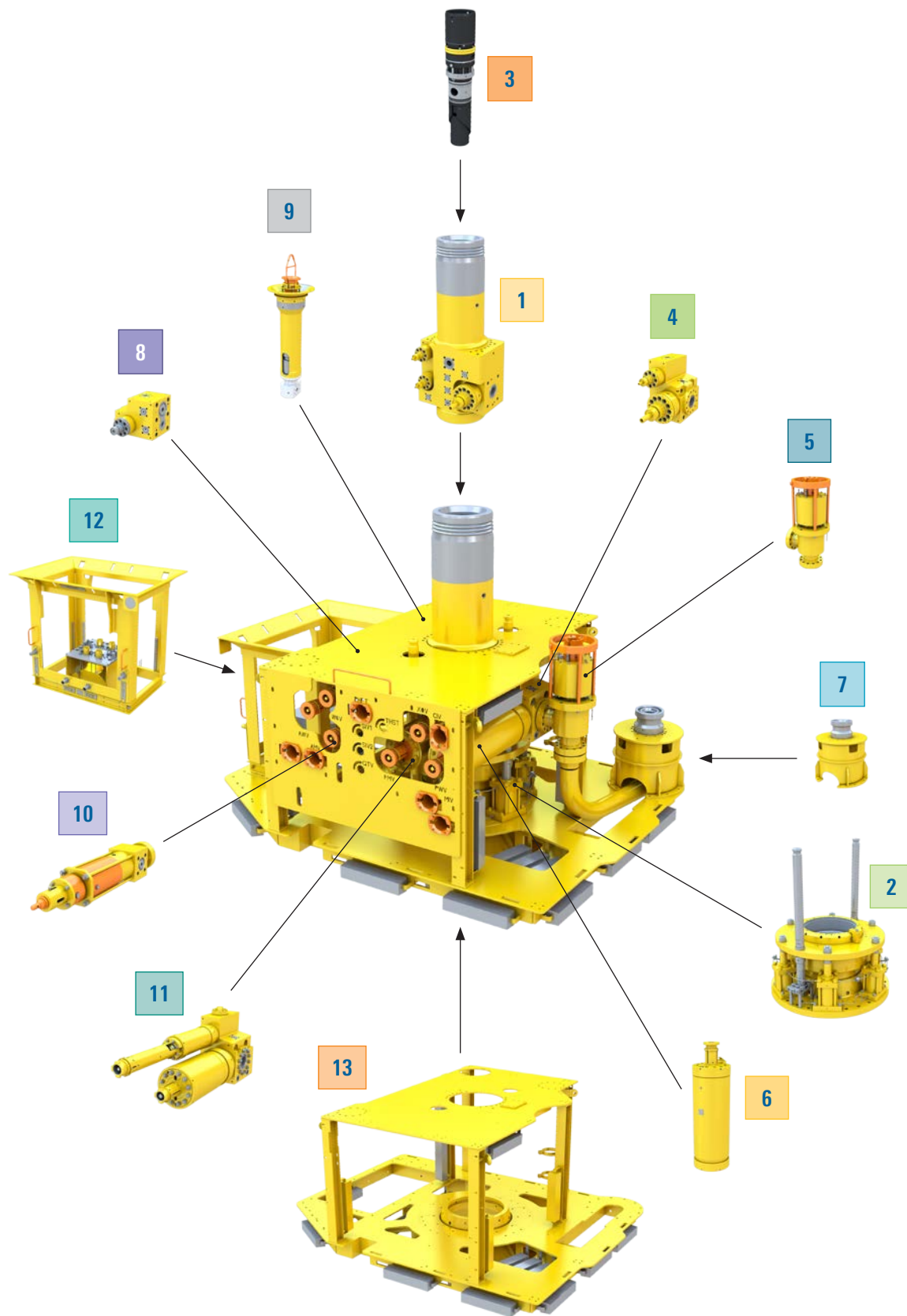
Our welding procedure for subsea trees conforms to API 6A, ASME IX, ASME B31.3, and NACE MR0175/ISO 15156. Adhering to proven, tested, and repeatable processes enables OneSubsea to

- standardize welding specifications within and across product lines and vendors
- provide a superior engineering design that meets or exceeds industry specifications at a lower cost
- deliver increased value by enhancing the product without incurring added costs.

Coating

There is one overall coating procedure comprising two preferred subsea coating systems—one for temperatures up to 122 degF [50 degC] and one high-temperature system for up to 302 degF [150 degC]. The standard coating specification gives the requirements for surface preparation, selection of coating materials, application procedures, and inspection of protective coatings to be applied on the standard horizontal tree.

Standard Horizontal Tree



1. Spool Body

Intermediate neck OR Long neck

2. Tree Connectors

Mechanical OR Hydraulic

3. Tubing Hanger

4-in dual plug
5-in dual plug
7-in dual plug

OR

4-in single plug
5-in single plug
7-in single plug

+

4-in plug internal tree cap (ITC)
5-in plug ITC
7-in plug ITC

4. Production Wing Valve Block

Basic OR Advanced

5. Choke

Clamp OR Compact

6. Actuators

10,000 ft OR 5,000 ft

7. Flowline Hub

Diver makeup and swivel flange OR CVC* flowline connector hub OR OneSubsea clamp system (OCS) vertical hub OR OCS horizontal hub

8. Annulus Wing Valve Block

Basic OR Advanced

9. Chemical Injection Metering Valve

High flow OR Medium flow OR Low flow

10. Downhole Hydraulic Control

Manual valve OR Hydraulic valve

11. Downhole Chemical Injection

Two downhole lines OR Three downhole lines

12. Controls

OneSubsea direct hydraulic OR OneSubsea-supplied controls

13. Tree Frames

Guidelineless frame OR Guideline-compatible frame + Overtravelability option

Metering, Monitoring, and Instrumentation

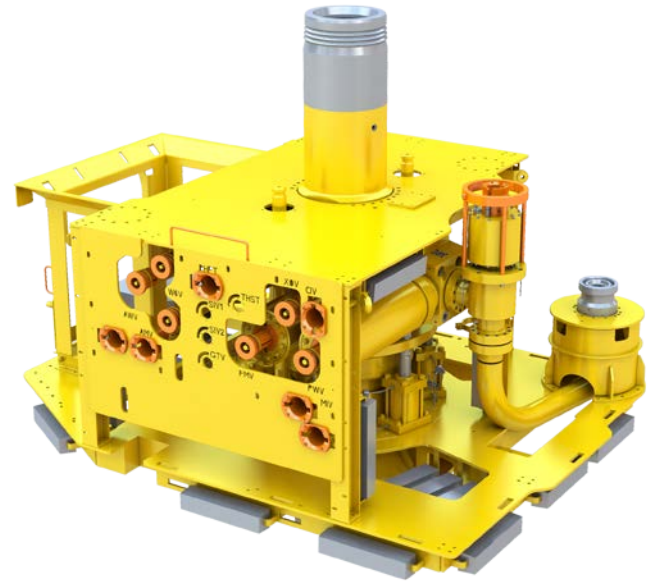
Flowmeter OR AquaWatcher* water analysis sensor OR Retrievable process module

OneSubsea offers a comprehensive suite of measurement technology, including pressure, temperature, water, and erosion monitoring.

If you require a custom-tailored solution to meet your project objectives, please contact OneSubsea.

Available Preconfigured Solutions

Preconfigured and flexible designs serve as fast-deploying solutions for the majority of subsea production applications. All levels of functionality can be configured for guideline-compatible or guidelineless installation.



Guidelineless installation.



Guideline-compatible installation.



Guideline-compatible installation with overtravelable options.

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onesubsea.slb.com/standardization

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