Standard Subsea Manifolds

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

OneSubsea
A Schlumberger Company

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Through standardized processes, common core components, and qualified, field-proven assemblies, OneSubsea can design a subsea manifold tailored to your field architecture and deliver it anywhere globally **within 18 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 1990, OneSubsea has designed and delivered more than 200 unique manifolds and structures fabricated at 14 different locations worldwide. Our manifolds utilize existing OneSubsea robust and reliable technology, providing the versatility and flexibility your project requires to deliver maximum capital efficiency. Every manifold design can be customized to your field architecture requirements and enables you to build in project-specific features one standard component at a time.

Flexible Functionality

Manifolds can be configured to generate numerous structure types:

- cluster manifolds with two or more well slots
- pipeline-end manifolds and terminations
- tie-in structures
- riser bases and gas export systems
- template manifolds
- overtrawlable and fishing-friendly designs.

Assemblies can be designed to achieve a multitude of functions within a field development:

- oil and gas production
- water and gas injection
- hydraulic, chemical, and electrical distribution
- sampling
- metering
- high-integrity pressure protection system operations.

Structures can interface with different foundation types:

- suction piles
- mudmats
- pin piles.

The standard manifold 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 subsea manifolds 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 manifolds conforms to API 6A, ASME IX, ASME B31.8, 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 subsea manifold.

Configurable Production Pipework Components

Large-Bore Gate Valves	
Trim	FF; HH
Sizes, in	2 1/16; 5 1/8; 7 1/16
Pressure, psi [bar]	5,000 [345]; 7,500 [517]; 10,000 [689]
Depth, ft [m]	10,000 [3,048]
Temperature, degF [degC]	–50 to 302 [–46 to 150]
Operation	Manual or hydraulic

Large-Bore Ball Valves	
Trim	FF; HH
Sizes, in	8; 10; 12
Pressure, psi [bar]	5,000 [345]; 7,500 [517]
Depth, ft [m]	10,000 [3,048]
Temperature, degF [degC]	–50 to 302 [–46 to 150]
Operation	Manual or hydraulic

Large-Bore Piping	
Trim	EE; FF; HH
Nominal sizes, in	2; 2½; 6; 8; 10; 12
Pressure, psi [bar]	5,000 [345]; 7,500 [517]; 10,000 [689]

Connection Equipment	
Type	CVC* flowline connector; OCS-V; OCS-H

See Standard Subsea Connection Systems brochure for more information.

Header-Mounted Equipment	
Part	**Details**
5⅛-in CC40SRC	10,000-psi [689-bar] HH choke
5⅛-in CC40SR	10,000-psi [689-bar] HH choke
2 1/16-in CC30SRC	10,000-psi [689-bar] FF gas choke
2 1/16-in CC30SR	10,000-psi [689-bar] FF gas choke
Multiphase flowmeter base	10,000-psi [689-bar] 6-in hubs

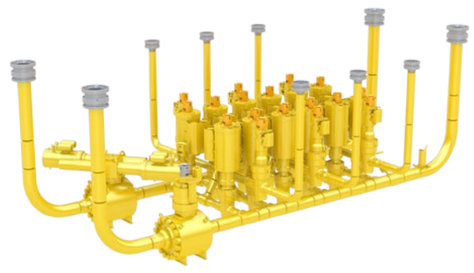
A matching suite of fittings, elbows, and bends is available in nominal sizes ranging from 2 to 12 in for EE, FF, and HH trims and pressures up to 10,000 psi [689 bar].

Configurable Structural Frame Components

A custom frame will be designed to suit the header layout and field architecture needs.

Four-slot single-header manifold.

Six-slot single-header manifold.



Six-slot dual-header manifold with gas lift.

Subassembly Components

Controls—Manifold-Mounted Equipment	
Part	**Details**
Subsea control module mounting base	OneSubsea standard
Pressure and temperature transmitter assembly, psi [bar]	10,000 [689]; intrusive
Chemical injection metering valve (CIMV) receptacle	Low flow; medium flow; high flow
Pig detector	Nonintrusive probe
Pig detector clamp	Nonintrusive
Stabplates	I/O logic

See Standard Subsea Control Systems brochure for more information. Integrated controls distribution optional.

A suite of small-bore tubing and fittings are available for various pressure classes and materials.

Small-Bore Valves—Slab Gate	
Trim	HH
Sizes, in	¾; 1
Pressure, psi [bar]	15,000 [1,034]
Depth, ft [m]	10,000 [3,048]
Temperature, degF [degC]	–50 to 350 [–46 to 150]
Mounting	Block or panel
End	Four-bolt flange
Connections	BX 151
Operation	Manual or hydraulic

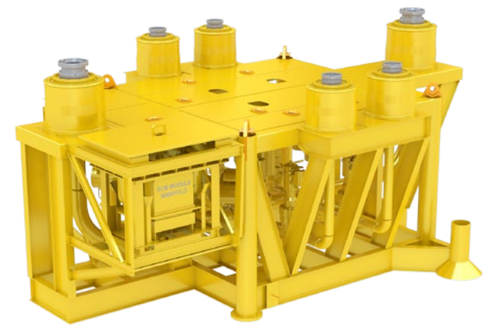
Top-Level Assembly Components

Retrievable Controls Equipment	
Part	**Details**
Subsea control module	OneSubsea standard
Communication distribution unit	Various power and communication options available
CIMV	Low flow; medium flow; high flow
Choke insert	CC40SRC; CC30SRC; CC40SR; CC30SR
Multiphase flowmeter	6 in
Long-term covers	I/O stabplate covers
Logic cap	OneSubsea standard

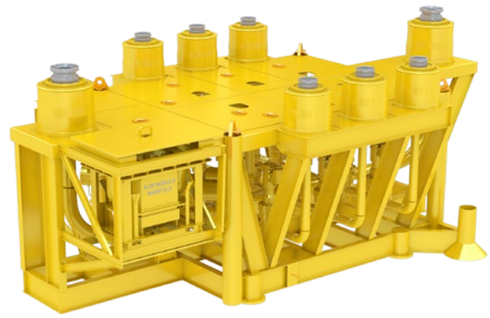
See Standard Subsea Control Systems brochure for more information.

Connection Capping Equipment	
Connector type	CVC connector; OCS-V; OCS-H
Cap type	Full suite of functional capping solutions available

See Standard Subsea Connection Systems brochure for more information.



Four-slot single-header manifold assembly.



Six-slot single-header manifold assembly.

Six-slot dual-header manifold assembly with gas lift.

Note: Images shown are reference examples only. Manifold components can be completely configured to meet project requirements.

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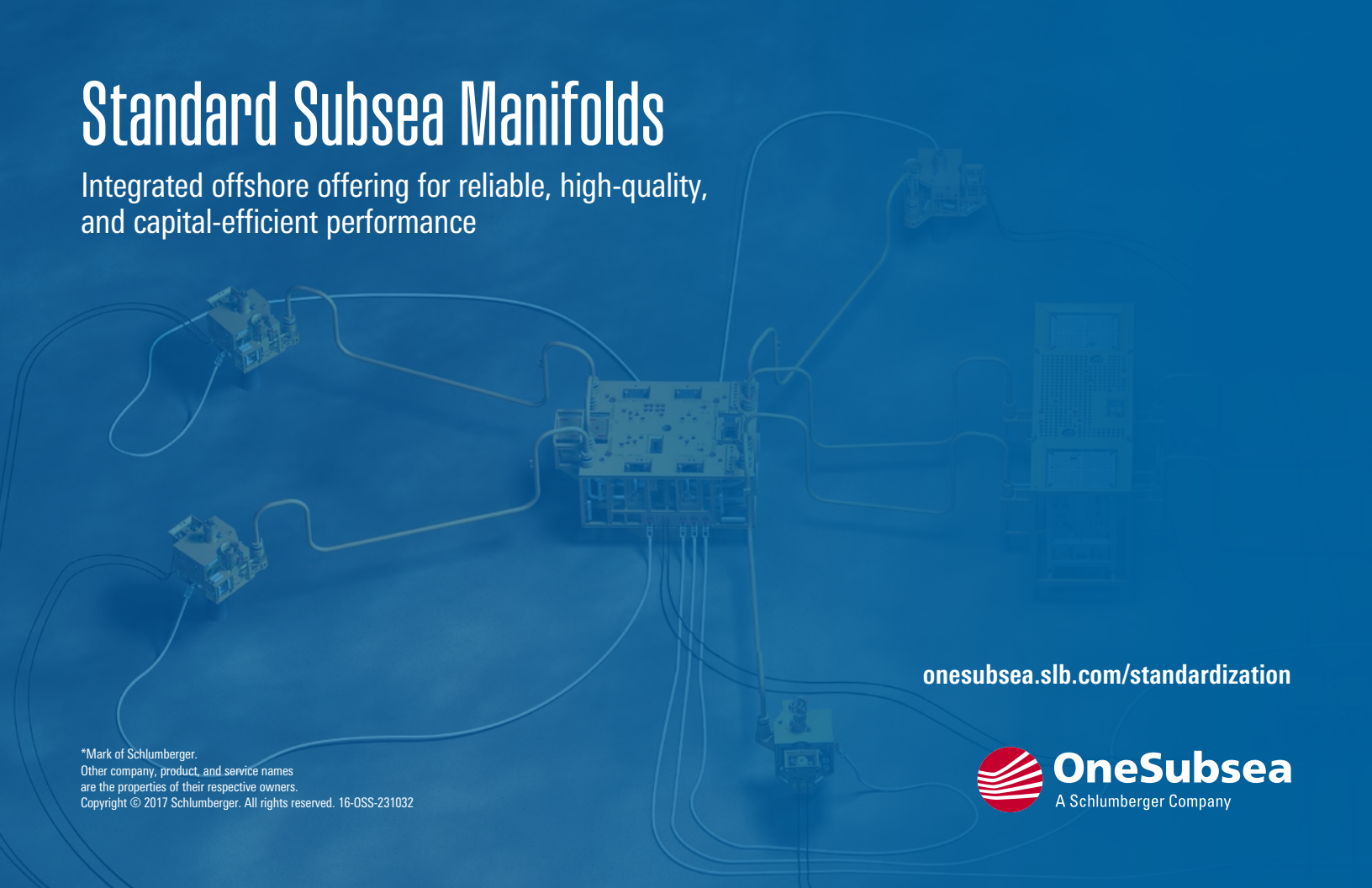

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