Standard Subsea Connection Systems

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

OneSubsea
A Schlumberger Company

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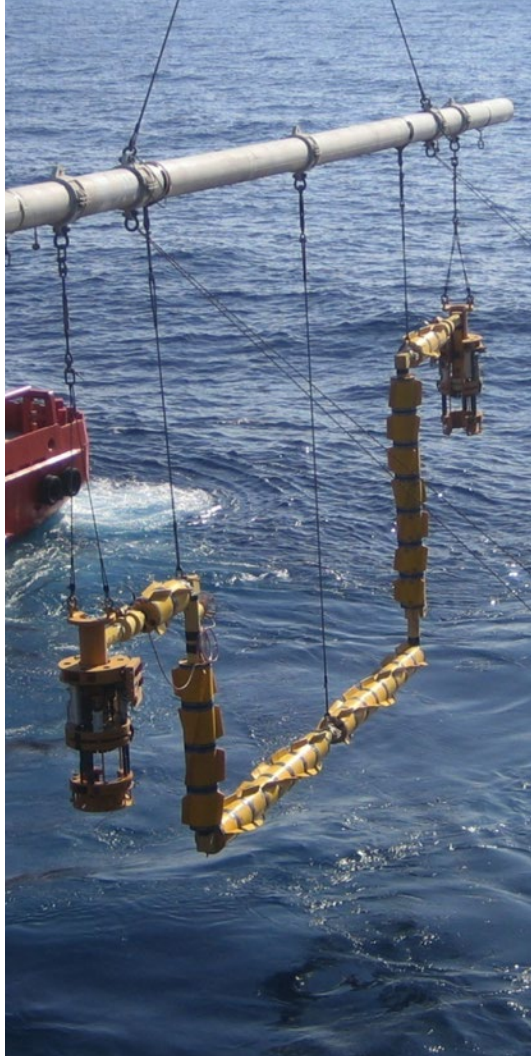
Through standardized processes, common core components, and qualified, field-proven assemblies, OneSubsea can deliver standard subsea connection systems anywhere globally **within 6 months**.

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

Versatile and efficient OneSubsea clamp systems (OCSs) ensure that there is a connection solution for every application.

- Proprietary dual metal gasket (DMG)
- Compact design that reduces weight and cost of structures
- Reduced jumper installation time
- ROV fly-to-place tooling that eliminates the use of downline
- In situ insulation capability

Flexible Functionality

- High load capacity
- Accommodation of rigid, flexible, or multibore jumper configurations
- Subsea seal replacement and hub cleaning ability
- Backseat testing capability
- Wet parking capability

The standard connection system 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 our connection systems are in accordance with API Specifications 6A and 17D. Facilities are certified per API Q1, strategic subcontractors are certified to ISO 9001, and body forgings are certified to DNV 3.2. This approach 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 connection systems conforms to API 6A, ASME IX, ASME B31.3, ASME B31.8, and NACE MR0175/ISO 15156. Adhering to proven, tested, and repeatable processes enables OneSubsea to

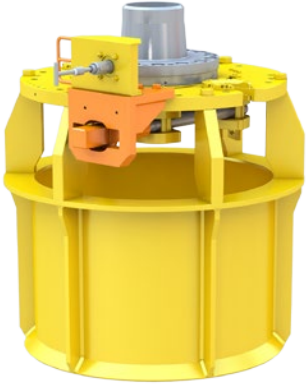
- standardize welding specifications within and across product lines and vendors
- provide a superior engineering design that meets or exceeds industry specifications at a lower cost
- deliver increased value by enhancing the product without incurring added costs.

Coating

There is one overall coating procedure comprising two preferred subsea coating options—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 connection systems.

OCS-V (4–20 in)

Clamp system—vertical



Functional specifications

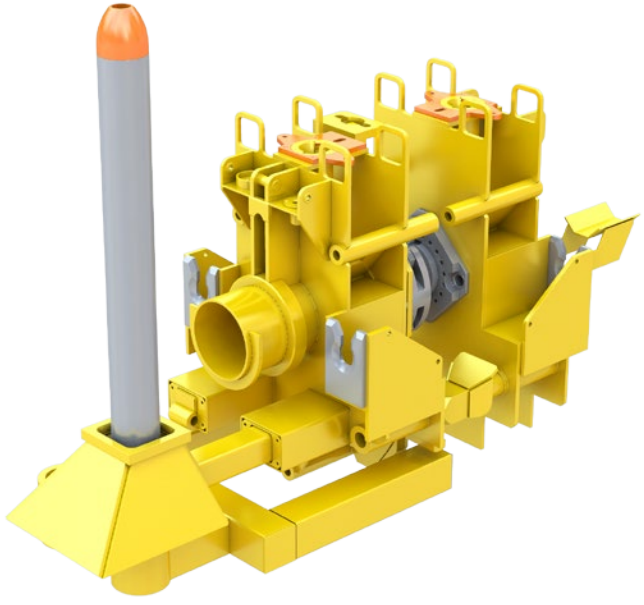
- Simplified installation that requires no heavy running or guiding tools
- Compact, high-load-capacity design
- Simple makeup with no pipe deflection needed
- Accommodation of rigid and flexible flowlines with gooseneck termination
- 5,000- to 20,000-psi [345- to 1,379-bar] working pressure
- Water depth rating of up to 15,000 ft [4,572 m]
- Ability to change out subsea seal without having to retrieve jumper
- Proprietary dual metal-to-metal (MTM) sealing technology
- Backseat testing capability

OCS-V Connection System Specifications

Deployment System and Tooling Size	Model	Nominal Pipe Size (NPS), in
Small	OCS-100	4 to 6
Midsize	OCS-200 OCS-300	6 to 12 (multibore)
Large	OCS-500 OCS-700	12 to 20 (multibore)

OCS-H (4–30 in)

Clamp system—horizontal



Functional specifications

- Simplified installation that requires no heavy running or guiding tools
- Compact, high-load-capacity design
- Configurations for monobore, multibore, and umbilical termination head variants
- Accommodation of rigid and flexible flowlines
- Ability to change out subsea seal, clean hub, and retrieve manifold or tree without having to retrieve jumper
- 5,000- to 20,000-psi [345- to 1,379-bar] working pressure
- Water depth rating of up to 15,000 ft [4,572 m]
- Proprietary dual MTM sealing technology
- Backseat testing capability

OCS-H Connection System Specifications

Deployment System and Tooling Size	Model	NPS, in
Small	OCS-100 OCS-200 OCS-300	4 to 12 (multibore)
Midsize	OCS-500 OCS-700	12 to 20 (multibore)
Large	OCS-1200	20 to 36 (multibore)

CVC (6–20 in)

Flowline connector—vertical

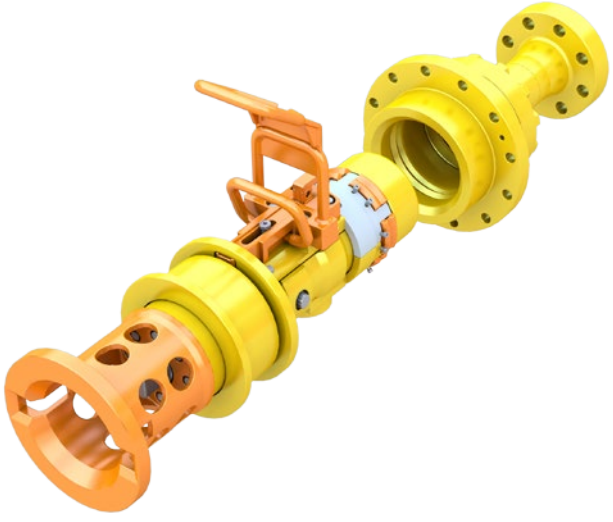
Functional specifications

- Simple makeup that requires no pipe deflection
- Accommodation of rigid and flexible flowlines with gooseneck termination
- 5,000- to 15,000-psi [345- to 1,034-bar] working pressure
- Water depth rating of 10,000 ft [3,048 m]
- ROV-operated tools
- Primary MTM seal with an elastomeric backup (S-AX gasket)
- Ability to change out subsea seal without having to retrieve jumper

CVC Connector Specifications	
Size, in	**Pressure, psi [bar]**
6	10,000 [689]
	15,000 [1,034]
8	10,000 [689]
	15,000 [1,034]
10	5,000 [345]
	10,000 [689]
	15,000 [1,034]
12	6,500 [448]
	10,000 [689]
16	10,000 [689]
20	5,000 [345]

OSS SBC (2–3 in)

Small-bore connector



Functional specifications

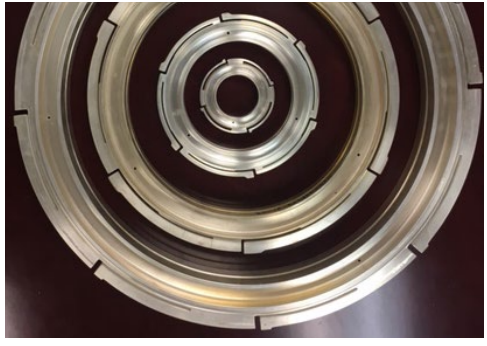
- Simple, easy-to-install, ROV-friendly design
- Secondary release mechanism
- Ability to change out subsea seal and clean hub without having to retrieve jumper
- Up to 15,000-psi [1,034-bar] working pressure
- Water depth rating of 10,000 ft [3,048 m]
- Ability to be used in either horizontal or vertical orientation
- Proprietary dual MTM sealing technology
- Backseat testing capability

Connection Capping Equipment

Short-Term Pressure Cap Specifications		
Item		**Description**
Seal		Elastomeric
Size range, in	Vertical	6 to 20
	Horizontal	6 to 30
Max. operating pressure, psi [bar]		20,000 [1,379]

Long-Term Pressure Cap Specifications		
Item		**Description**
Seal		MTM
Size range, in	Vertical	6 to 20
	Horizontal	6 to 30
Max. operating pressure, psi [bar]		20,000 [1,379]
Temperature, degF [degC]		–50 to 350 [–46 to 177]
API 6A material class		EE, HH

Dual Metal Gasket (DMG)



MTM Sealing Specifications	
Item	**Description**
Temperature, degF [degC]	–50 to 350 [–46 to 177]
Sizes, in	2 to 30
Design pressure, psi [bar]	Up to 20,000 [1,379]

- Independently tested dual seal
- Retained within outboard connector and can be replaced and retrieved using specialized subsea tooling
- Elastic design capable of multiple uses
- Suitability for HPHT applications

Reliable. Compact. Simple.

OneSubsea has a solid track record of deploying field-proven technology that drives superior performance for our customers. Since 1998, more than 2,500 of our connectors have been installed in more than 80 projects worldwide for connecting flowlines and export lines.

Expertise in engineering and new technology development

True to OneSubsea quality, our connection systems are designed to perform to your satisfaction. You get strong, reliable connections that are designed to be cost effective.

Excellence in QHSE

In tandem with our customers, contractors, and suppliers, we are committed to a working culture in which quality, health, safety, and the environment are our priorities.

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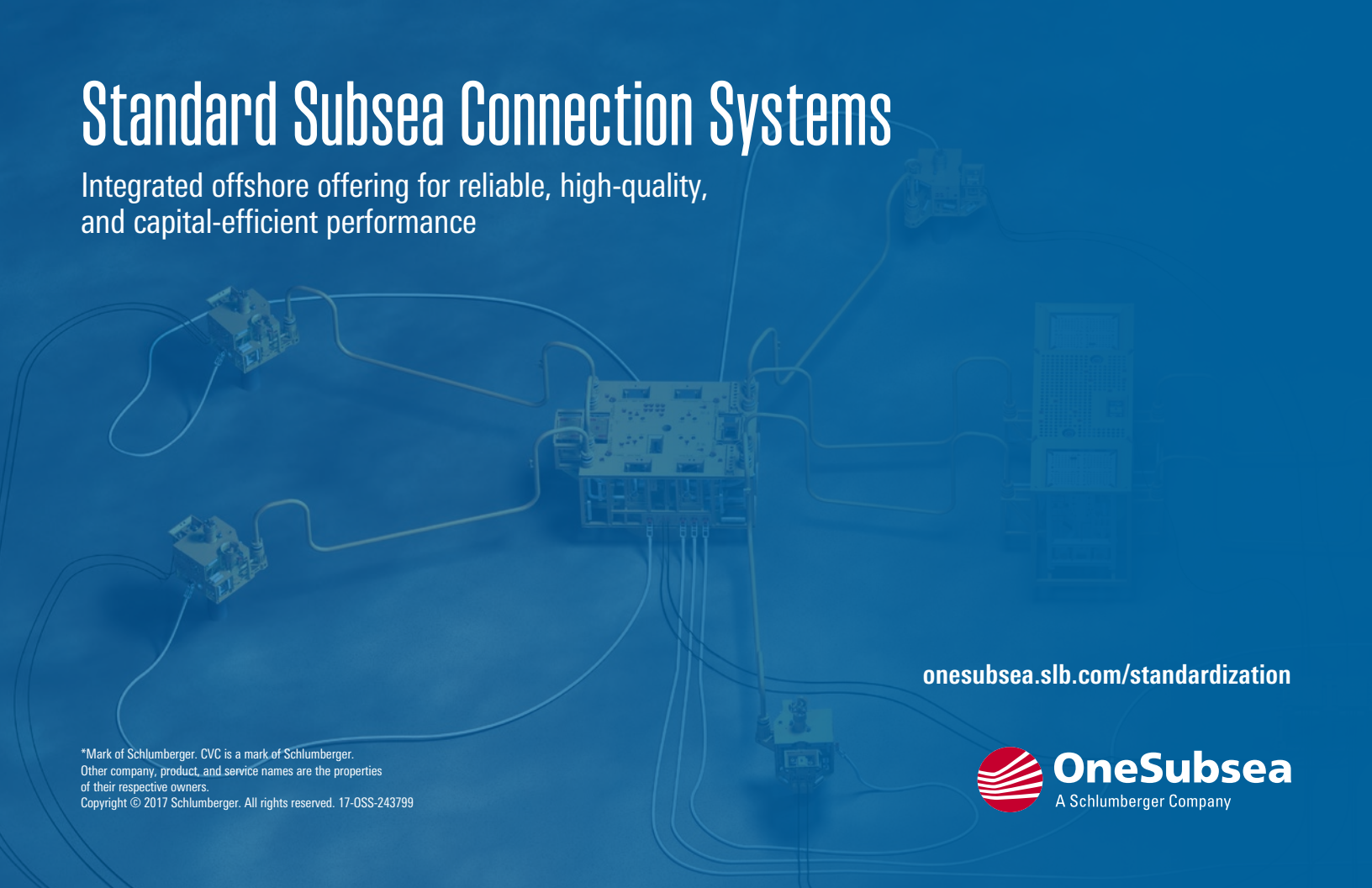

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