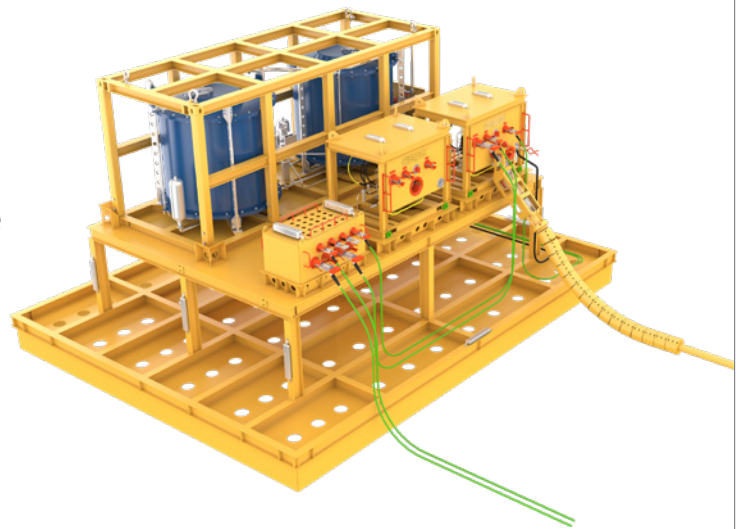


Subsea Pumping Technology (SPT)

Subsea Chemical Storage and Injection Systems

Subsea Pumping Technology offers an alternative solution to umbilical-delivered subsea chemical injection. The system reduces or eliminates the storage, pumping, and delivery systems that typically occupy valuable topside real estate and the interface resources associated with topside chemical storage, bunkering, and handling. Multiple efficiencies can be realized by moving the equipment to the seabed and positioning them locally to the point(s) of demand. Tanks of chemical product are replenished via tank exchange or filled from support vessel down line(s).



FEATURES

Modular, off-the-shelf equipment reduces lead times

Suitable for multiple applications

Deployable via multi-service vessel (MSV)

Subsea Pumping Technology (SPT)

Subsea Chemical Storage and Injection Systems

Using modular, off-the-shelf, and scalable equipment to meet chemical storage and injection requirements offers significant advantages. Not only are costs and lead times reduced when compared to conventional umbilical systems performing the same task, but the systems can be deployed from an multi-service vessel, eliminating the requirement for a large intervention vessel.

Once deployed to the seabed, tanks of chemical products are replenished via tank exchange or filled from support vessel down line(s). The technology is complementary to all electric systems and architectures, and the overall cross section and complexity of the required field service umbilical can be simplified significantly.

Additionally, the local storage and injection concept is a strong enabler for longer subsea tiebacks, where chemical delivery and distribution to the field(s) via long and/or multiple umbilical sections is challenging and costly.

Applications

- » Rental support for intervention and short-term jobs
- » Brownfield applications including restoring chemical or hydraulic service for plugged umbilicals
- » Greenfield applications delivering CAPEX cost savings over conventional methods



Technical Data

Pump Modules		Maintenance free operating period	3 Years
Dimensions (L x W x H)	5 x 4 x 4.5 ft / 1.5 x 1.2 x 1.4 m	Volume per module	Up to 3,000 gal / 13,638 L
Maximum gross weight	5,000 lb / 2,268 kg	Fluids	Chemicals, water glycol, barrier fluid
Maintenance free operating period	3 years	Certifications	DNV 2.7-3 Standard for Certification
Electrical	480 VAC 50/60 Hz, 3 Phase	Control Module	
Max pressure	15k psi (1,035 bar)	Maintenance free operating period	10 Years
Flow rates	.05 to 40 gal/min (0.2 to 168 L/min)	Communications	Fiber, ethernet, software and documentation localization (SDL), powerline, subsea instrumentation interface standardization (SIIS)
Configurations	Four based on flow rate and duty cycles	Options	Integrated solution (OEM system) or complete controls (OII provided)
Fluids	Chemicals, water glycol, barrier fluid	Topside components	Master control station, topside power and communications
Certifications	DNV 2.7-3 Standard for Certification, API 674 and API 675	Subsea components	Subsea power and communications, motor drive bottle, output bottle
Fluid Storage Modules		Certifications	Qualified in accordance with API 17F and 17G, safety integrity level (SIL) 1-3 capable
ISO container dimensions (L x W x H)	10 x 20 x 8.5 ft / 3 x 6.1 x 2.6 m		
Maximum gross weight	44,093 lb / 20,000 kg		

© 2019 Oceaneering International, Inc. All rights reserved.