



Trident-OVS Light Well Intervention System

OPEN WATER MECHANICAL AND
HYDRAULIC INTERVENTION

Trident-OVS 15K Light Well Intervention System

Halliburton recognizes the challenges and risks operators face when managing production in deep water basins and mature fields, especially the Gulf of Mexico, often requiring specialized intervention services. This high-pressure, deepwater well intervention system offers a means to safely connect in a 6-3/8 inch borehole, from a vessel or rig on the water's surface, to subsea wells up to 15,000 psi in water as deep as 10,000 feet (3,000 m).

CHALLENGE

BOOST PRODUCTION

Keep existing wells flowing by eliminating scale, paraffin buildup, and sand.

REDUCE COSTS

Reduce the high costs of necessary well intervention services.

ACCESS HIGH PRESSURE WELLS

Prevent potential wellbore damage in hazardous subsea conditions.

SIMPLIFY SUB-CONTRACTORS

Manage multiple subcontractors involved in well intervention projects.

SOLUTION

The Trident-OVS light well intervention system, designed by Trendsetter Engineering and incorporating Halliburton's Veto™ ball valves and a 15,000 psi rated pressure control head, provides secure well access for injecting fluids and performing downhole operations from a vessel or rig. In combination with Halliburton's suite of services, the system can be delivered as an integrated service—reducing manpower, interfaces, and costs.



As Wells Age, They Naturally Require Increased Interventions to Boost Production

A BETTER INTERVENTION APPROACH

15,000 psi Open Water Well Access System

The Trident-OVS system gives the industry a more efficient, high-pressure and low-cost alternative for open water mechanical and hydraulic intervention. Distinguishing capabilities include safe access to wells up to 15,000 psi, reliable and responsive controls technology, and integration with Halliburton's product and services.

Flexible Design

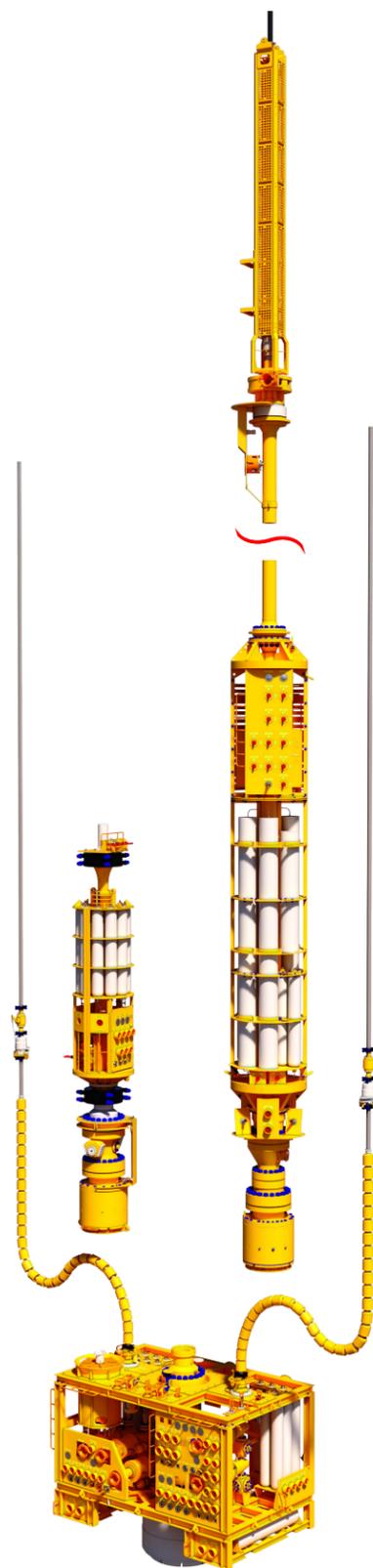
The flexible system is engineered for use in both riserless and riser-based subsea applications and is controlled through a remotely operated vehicle (ROV) or by a single downline. The modular system can be deployed from a mobile offshore drilling unit (MODU) or multi-service vessel (MSV), providing the client cost effective operational options. Multiple configuration options enable the system to do stimulation, completion workovers, and plug and abandonment activities on either horizontal or vertical subsea trees.

Ease of Use

Due to its comparatively light weight and proven modular design, the Trident-OVS system can be quickly mobilized or demobilized to and from the rig or vessel and can be reconfigured at any given offshore location. The system does not require a separate umbilical or controls package for operations (IWOCs), operates in shallow water with a maximum release angle of 10 degrees, allowing for a large watch circle, and the emergency disconnect package (EDP) can be run through the rotary.

Resource Savings

Operated remotely from a MODU or MSV, the Trident-OVS system saves the operator valuable time and deck space by reducing the required equipment and number of personnel on board (POB) the vessel of choice.



Trident-OVS light well intervention system with configurable riser EDP and riserless lubricator package.

Features

Riser, riserless, and stimulation

Maintains a dual-barrier philosophy at all times, with shearing and sealing valves qualified to API 17G shear and seal

API 17G and STD 53 operational compliance

Rotary deployed emergency disconnect package (EDP)

Universally compatible with all original equipment manufacturer (OEM) subsea XTS

Retainer valve in the EDP

Field-adaptable lubricator

Extendable lubricator

Optional wellhead isolation module (WIM)

Veto ball valves with metal to metal seals

Veto ball valves with pump-thru capability

Veto ball valves can pressure test from above

Electro-hydraulic MUX controls with retrievable subsea control module

Fewer controls downline

Electric downline or ROV controls option

Accumulated power with no subsea hydraulic power unit (HPU)

Fluid and grease replenishable subsea

Benefits

15,000 psi riser-based applications
15,000 psi riserless applications
15,000 psi hydraulic stimulation applications

Coiled tubing: 2 in., QT-1100, and .203 in. wall
Wireline: slickline, braided, and e-line

Emergency shut down (ESD)
Emergency disconnect sequence (EDS) within 45 seconds
Deadman (DM)
Autoshear (AS) functions

Quicker, more efficient rig operations

One stop solution for large fields with multiple suppliers and XT types

Isolates riser fluids upon emergency disconnect

Allows riserless operation using the same system

Allows up to 135 ft. tool strings

Enables open water plug and abandonment

Improved fluid compatibility (acids / xylenes)

Optimized flushing and well control

More efficient riser-based operations

Increased reliability and faster response time

Improved operability in rough weather conditions and loop currents

Reduces deck space

Increased reliability and faster response time

Longer operational time subsea

Rated Water Depth
10,000 ft.

Rated Working Pressure
15,000 psi

Production Bore Access
6-3/8 in.

**IWOCS Not
Required**

FIELD-PROVEN TECHNOLOGIES

The Trident-OVS system incorporates field proven technologies – contributing to a smooth, environmentally safe operation:

- » Halliburton Veto™ ball valves
- » Trendsetter Sentinel® control system
- » Trendsetter TCS® connector

LIGHT WEIGHT, BIG BENEFITS

The Trident-OVS system offers big benefits to intervention operations, including:

- » Responsive, reliable controls and ball valves
- » Emergency shutdown and emergency disconnect capabilities
- » Reduced technical and operational risks equating to less downtime
- » Increased environmental safety when accessing high-pressure wells
- » Less complexity when performing workover interventions
- » Lower internal operator costs due to Halliburton-provided project management

INTEGRATED WELL INTERVENTION SERVICES

A combined solution integrates an assortment of Halliburton products and services that complement those of the operator to meet specific project objectives. The chosen services are optimized by an integrated Halliburton project management team responsible for oversight of the project.

Contact a Halliburton representative for more information about these industry-leading services, delivered in conjunction with the Trident-OVS system – a single system designed for multiple applications.



Equipment Specifications

Rated Water Depth	10,000 ft. (3048 m)
Rated Working Pressure for Riser, Riserless, and Hydraulic Stimulation System	15,000 psi (1,034 bar)
Production Bore Access	6-3/8 in. (16.2 cm)
Annulus Bore Access	2 in. (5.1 cm)
Product Specification Level (Wellbore Equipment)	PSL 3G
Temperature Rating (Wellbore Equipment)	35°F to 250°F (2°C to 121°C) [Class "V"]
Release Angle	10°
API Material Class (Wetted Surfaces)	EE
EDP Deployed Weight	22 T (19,960 kg)
LRP Deployed Weight	55 T (49,895 kg)
Barrier Rating EDP	Shear and Seal, Gas SSL
Barrier Rating LRP	Dual Shear and Seal, Gas SSL
ROV Interfaces	ROV Bucket, Hot Stab, and Grab Handles per API 17
Control System	Electrohydraulic with Downline and/or ROV Controls
EDP Outside Diameter	50 in. (Deploy Through) 58 in. (Rotary Table)
Lubricator Length	Up to 120 ft. (36.6 m)
Lift Points	Compliance to DNV 2.7-3
Standards	Compliant with API RP 17G and STD 53 (as applicable)

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