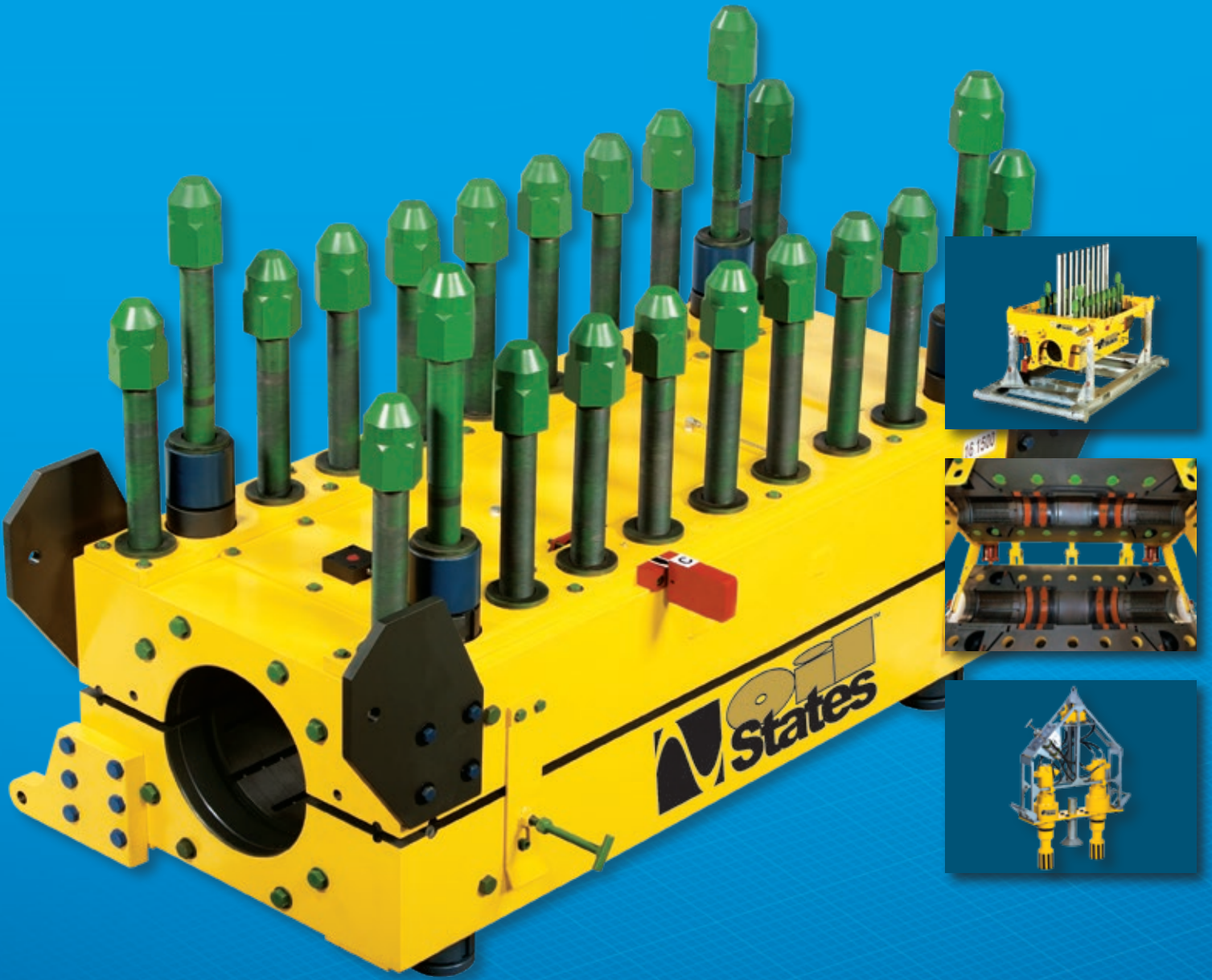




SUBSEA PIPELINE SYSTEMS

# Diverless Repair Clamp





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## Oil States Diverless Repair Clamp

The Oil States Diverless Repair Clamp (DRC) is a mechanical, split-style clamp for deepwater pipeline repair or recovery operations. The multi-purpose clamp can be configured to serve as part of a spoolpiece repair system, a leak repair clamp or as a recovery tool.

The clamp is NACE-compliant with inboard seals and outboard collet grips. The juncture of the longitudinal seal with the circumferential seals is located toward the rigid center of the fitting, yielding optimal seal performance. The connector is structurally acceptable for sealing dents, cracks and pinholes.

### Key Benefits

- Collet grips ensure unsurpassed structural attachment to the pipe
- NACE compliance eliminates costly weld overlays
- Fast, reliable "Single-Set" simultaneous seal and grip actuation
- "Inboard" seal design greatly reduces the pressure-containing area of the clamp.
- Circumferential seals inboard of the collet grips create a shorter longitudinal seal



ROV Operated Running Tool

### Key Features

- Standard Full Pressure End Load Structural Reinforcement
- Reduced Pressure Boundary
- Reduced Longitudinal Seal Length
- Standard Annulus Test Feature
- Standard Viton Seals
- Misalignment Capability
- Pipe Ovality Tolerance
- Bending Moment Capacity
- Reversible Collet Gripping System

### Installation

- Simultaneous grip and seal actuation and body bolting simplify installation via the Oil States vertically positioned running tool.
- The Oil States uniquely designed Running Tool System functions for multiple sizes of diverless connectors and can be recovered for use on future installations.
- The running tool is also employed to activate the Oil States SureLock Diverless End Connector.

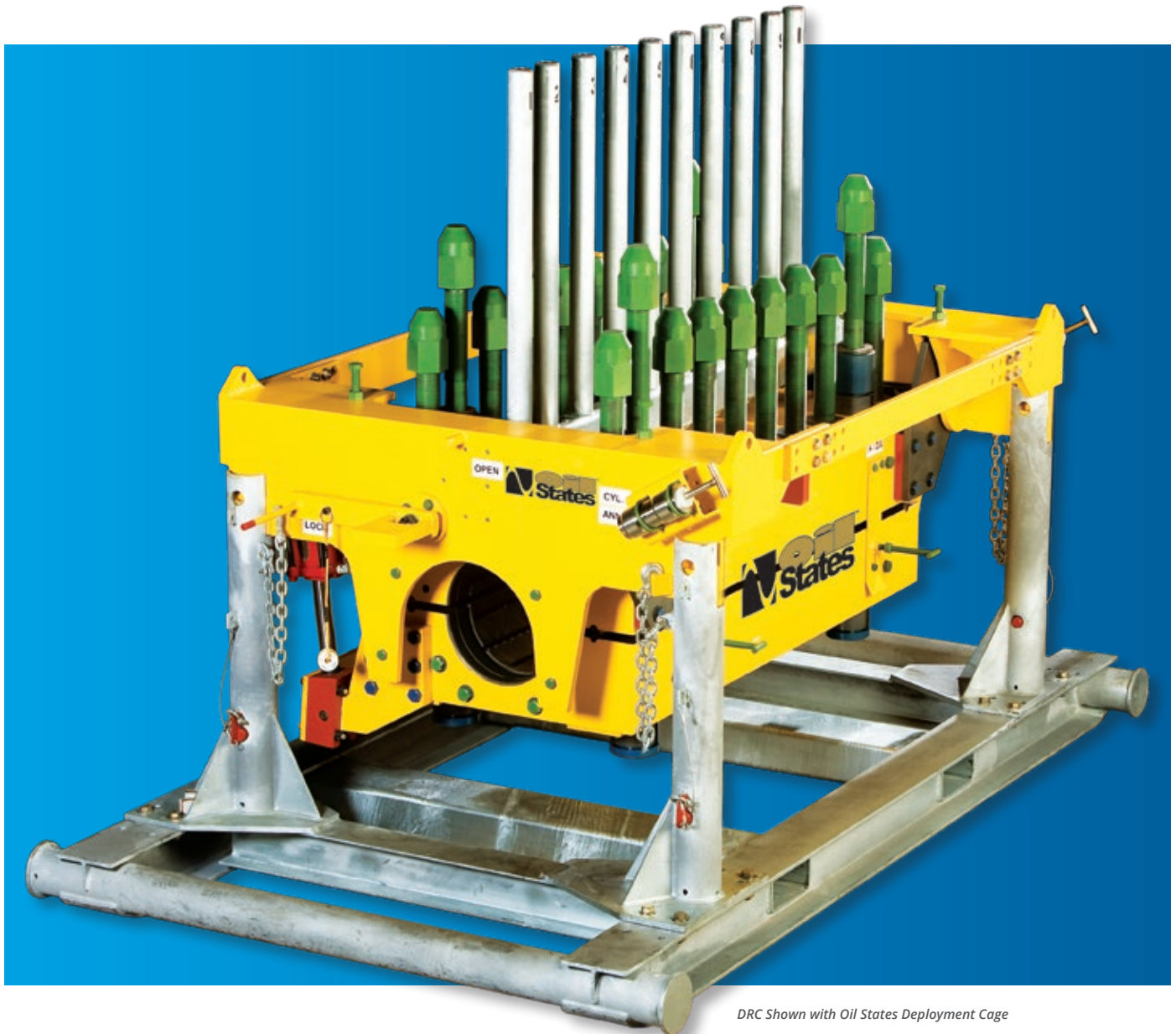
## Specification Variations & Design Features

Oil States manufacturing specifications are based upon the historical requirements of its customers. Oil States will quote specific customer requirements upon request. Any adjustments to Oil States' standard specifications and manufacturing methods must be agreed upon prior to commencement of design and manufacture.

The fitting is designed in general accordance with the methods defined by the Boiler and Pressure Vessel Code, ASME Section VIII, Division 2. Design factors and allowable stress limits can be established by any applicable piping codes.

The Oil States Diverless Repair Clamp Connector is available for a wide array of specifications including:

- ANSI Pressure Classes 300 through 2500
- API 6A Pressure Ratings 2000 through 5000(6B) and 2000 through 10000(6BX)



*DRC Shown with Oil States Deployment Cage*

## Design Compliance

### The following codes and standards are applied to the design of the Diverless Repair Clamp as applicable for given applications:

- ASME B16.5 and B16.47, Pipe Flanges and Flanged Fittings
- MSS SP-44, Steel Pipe Line Flanges
- ASME B31.3, Process Piping
- ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquid
- ASME B31.8, Gas Transmission and Distribution Piping Systems
- ASME Boiler and Pressure Vessel Code, Section VIII, Division 1
- ASME Boiler and Pressure Vessel Code, Section VIII, Division 2
- API Spec 6A, Specifications for Wellhead and Christmas Tree Equipment
- API Spec 6H, Specification on End Closures, Connectors and Swivels
- NACE MR0175, Standard Material Requirement, Sulfide Stress Cracking
- CFR Title 49, Part 195, Minimum Federal Safety Standards for Liquid Pipelines
- CFR Title 49, Part 192, Minimum Federal Safety Standards for Gas Pipelines

## Oil States Subsea Pipeline Systems

Oil States' Houston-based Subsea Pipeline Systems division designs, manufactures and markets proprietary deepwater and shallow water pipeline connectors for subsea pipeline construction, repair and expansion projects.

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