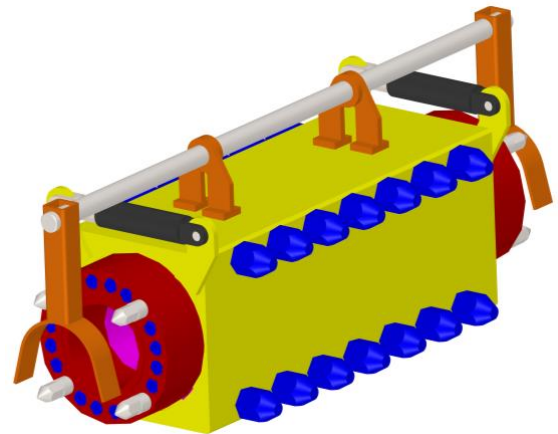


Titan Diverless Leak Repair Clamp

Product Description:

Titan Subsea Innovations Diverless Leak Repair Clamps (DRC) are split sleeve mechanical fittings designed to encapsulate a localized pinhole, dents, weld cracks or other local damage in water depths or conditions beyond the capacity of diver intervention. Diverless clamps are operated by a remote operated vehicle (ROV).



Design Features and Benefits:

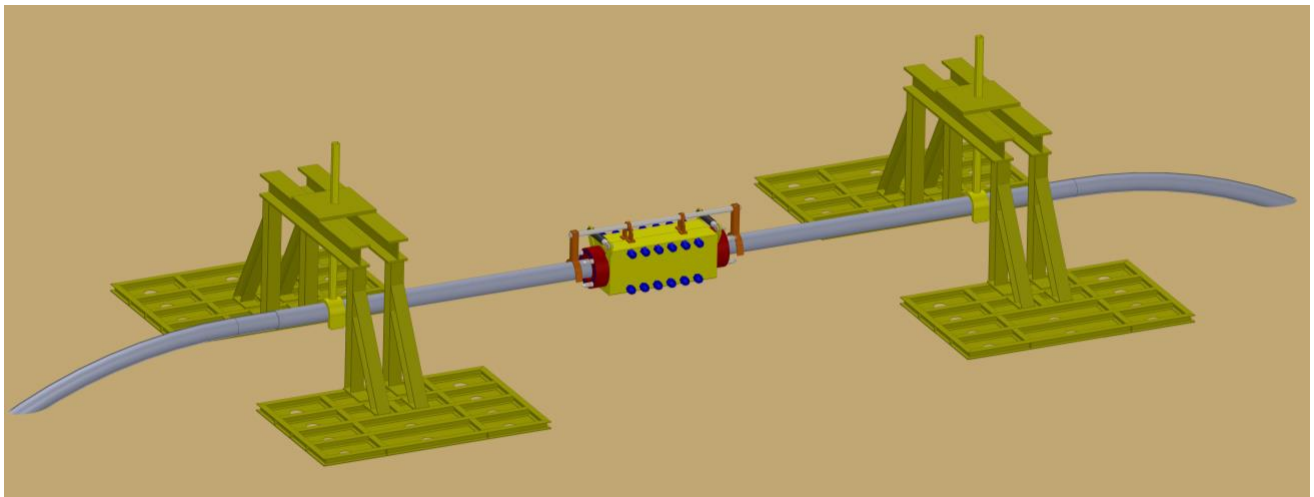
Consistent with Titan's design philosophy of drawing on the industry's previous experience and success with subsea pipeline equipment, all features and functions of the DRC are based on proven subsea technologies. The design and development of the DRC simplifies the setting and locking mechanisms of the clamp to achieve a robust and reliable design for diverless applications.

- **Sealing System** – The inboard Viton seals of the diverless clamp reduce the pressure boundary of the unit thus resulting in a more optimized design with better long-term performance. The mechanically energized dual inboard Viton seals allow for an **Annulus Seal Test Feature** to facilitate a seal verification test between the DRC and the pipeline after the connector has been installed.
- **Installation Support System** – All diverless clamps are supplied with ROV panels, landing saddles, and other appurtenance equipment to support diverless clamp installation.
- **Setting System** - All functions of the clamp setting are performed hydraulically or with minimum mechanical interface by the ROV.
- **Reversibility** – All functions of the clamp are reversible in order to remove the clamp after setting if required.
- **Gripping System** – The design basis of the collet gripping mechanism that attaches the DRC to the pipeline is identical to Titan's proven shallow water collet grip design.

Diverless Clamp Configurations

Titan offers two permanent diverless leak repair clamps. The non-structural version is intended only for pin hole type leaks, and the full structural version containing collet grips that attach to the pipeline is for any other type of localized damage. Full structural clamps provide added structural integrity to a compromised pipeline. Full structural clamps are tested on independent pipe pups to demonstrate capacity to sustain full pressure end load.

Titan Subsea Innovations can supply all pipe lift frames and other associated installation structures to support installation of diverless clamps.



Technical Specifications:

- ASME Section VIII Div. 1 and 2, API 6H, DNV RP-F113 compliant design as applicable
- Inboard seals and outboard grips for NACE compliance
- NACE pressure containing component
- Increased pipe ovality tolerance

Titan Subsea Innovations, LLC invites you to [contact](#) us for your next subsea pipeline project, and experience the professionalism, knowledge, and dedication that exemplifies the Titan Team.