



Structural and High Integrity Pipeline Repair Systems- A technical overview

SPE/ IMechE-Alternatives to Welding- Creative Solutions for Pressure and strength retention

Giuseppe Rizzo
Technical Solutions Manager
Subsea Products

grizzo@oceanengineering.com

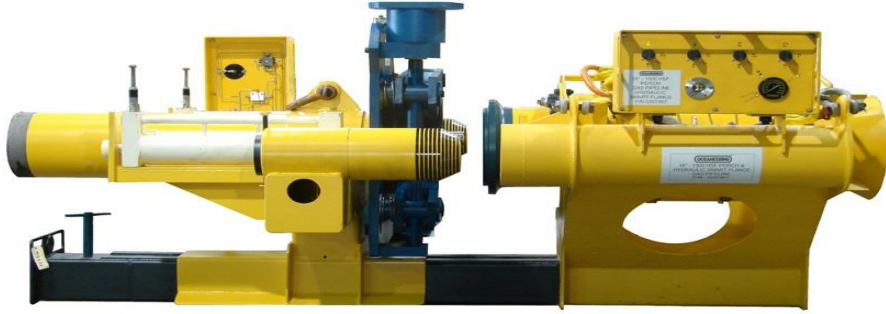
mobile: +44 (0) 7554 338914

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Rev 6

PCRS – Deepwater Repair Systems



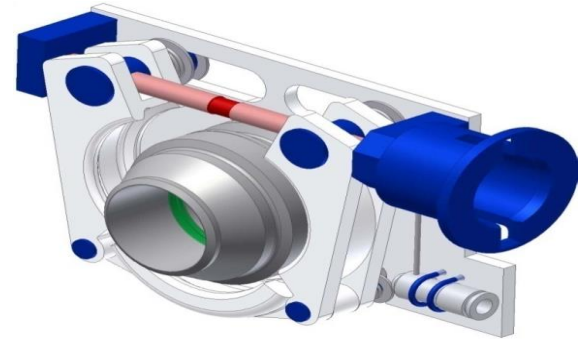
Connection Repair System



Diverless Smart Clamps



Hydraulic Smart Flange Connector

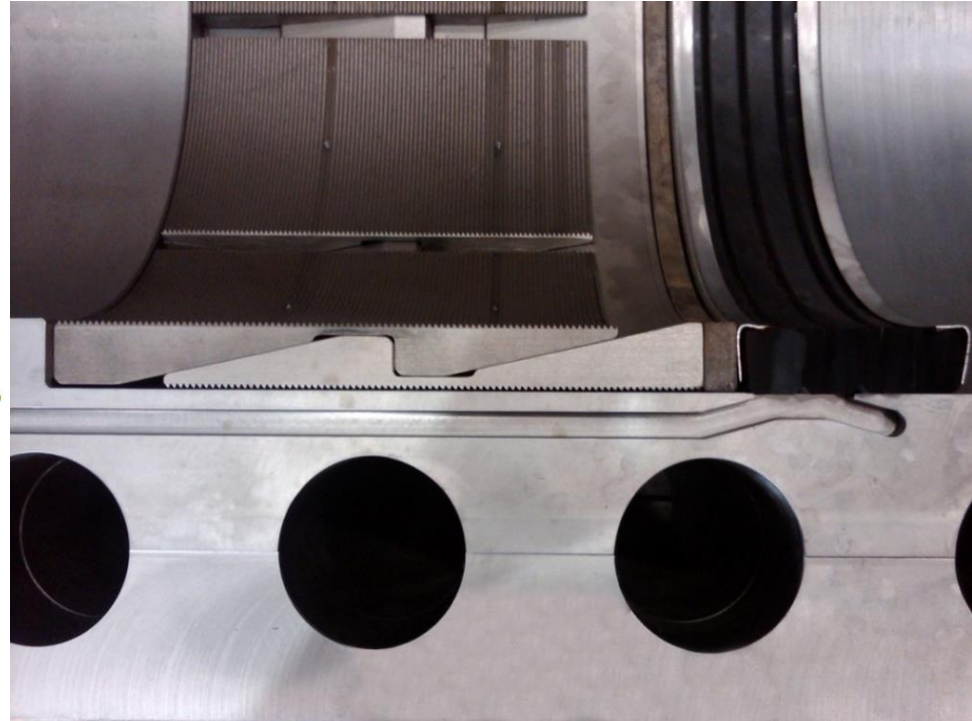
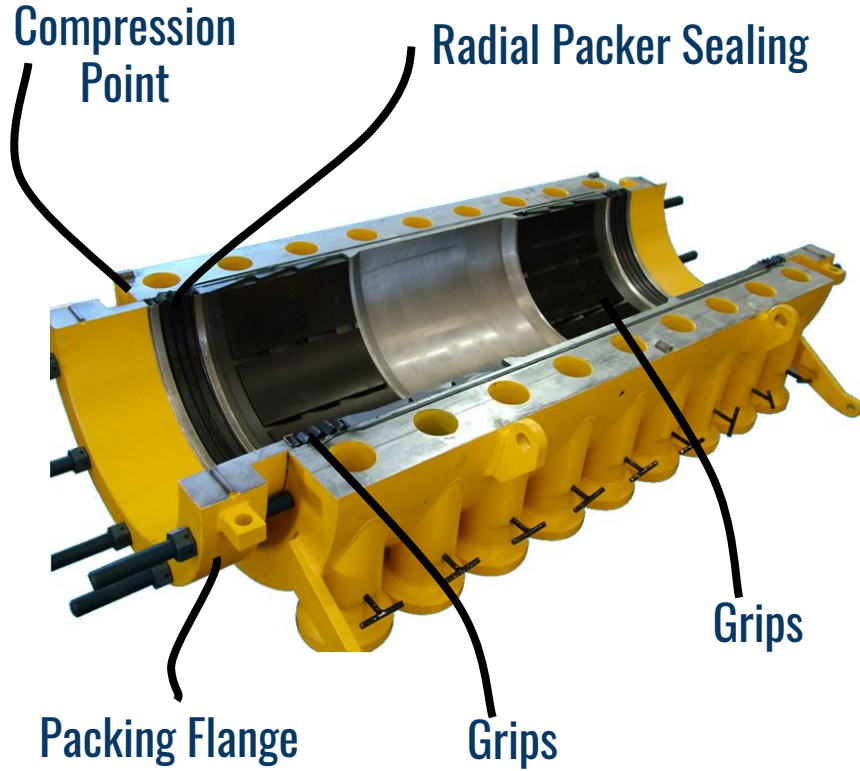


Grayloc® Subsea Remote Connectors

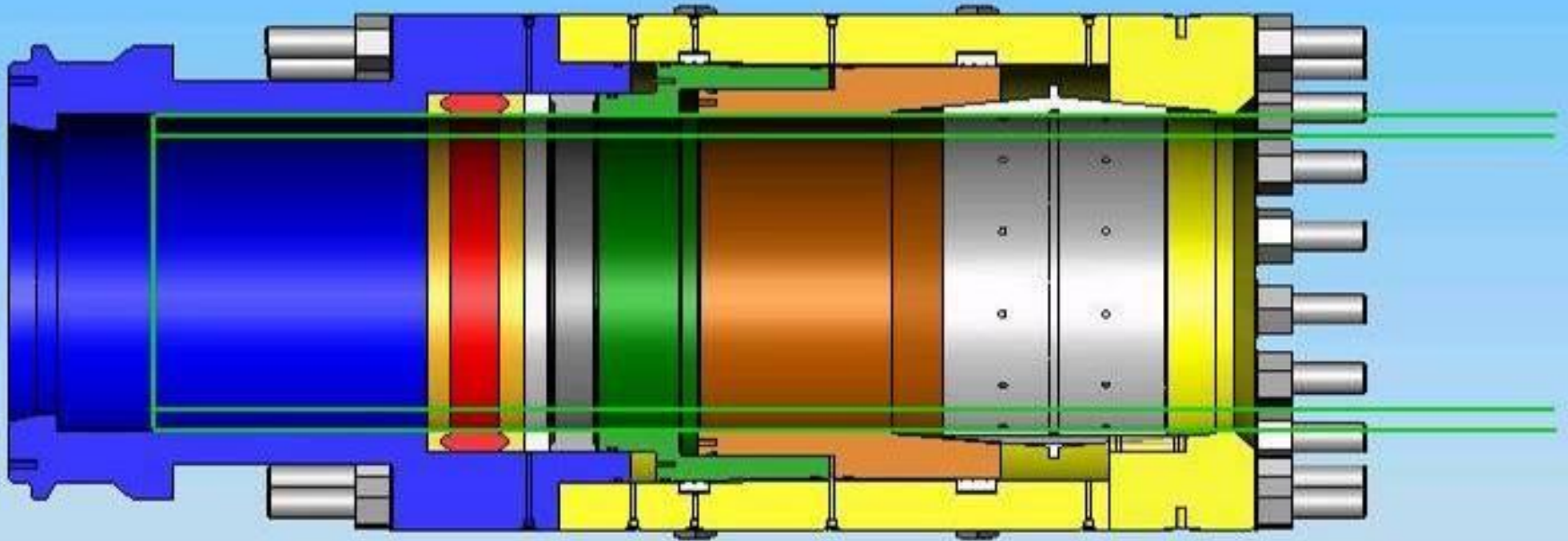
SUBSEA PIPELINE REPAIRS



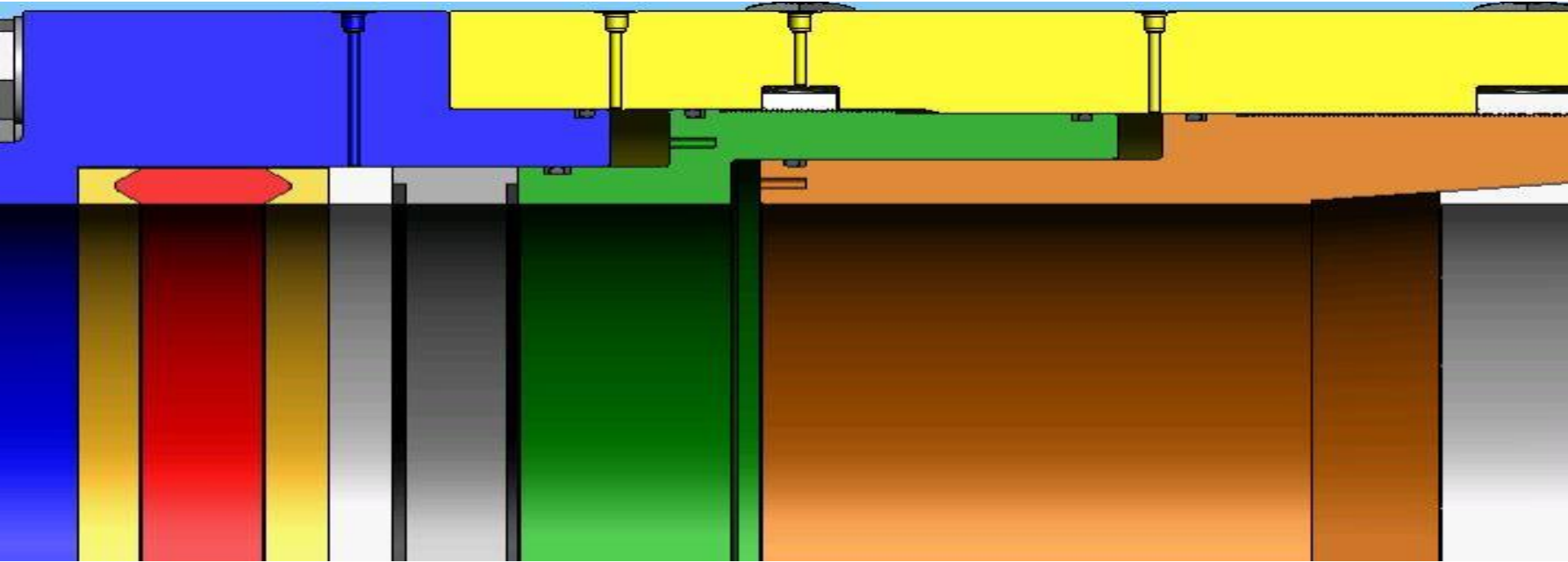
Pipeline Services Repair Clamp



Deepwater Applications – Hydraulic Smart



Deepwater Applications – Hydraulic Smart Flange Connector



ROV Tooling for Deepwater Pipeline Repairs



Pipe Lift Frames



Coating & Weld Seam
Removal Tool



Pipe End
Preparation Tool



Pipe Cutting Tool
(Chop Saw)

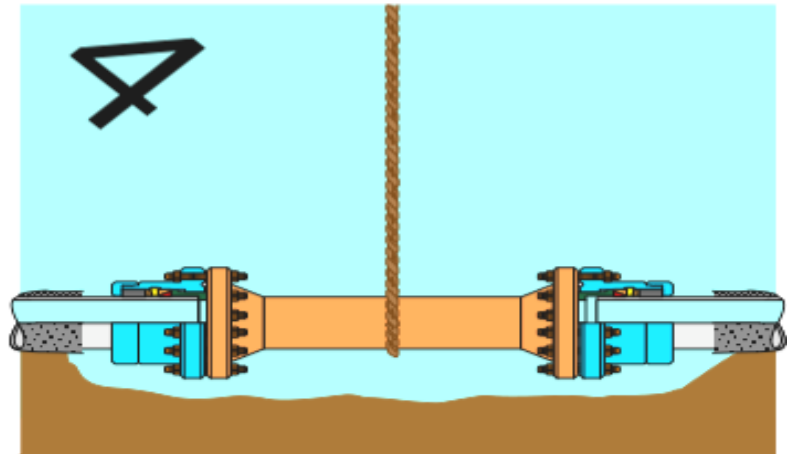
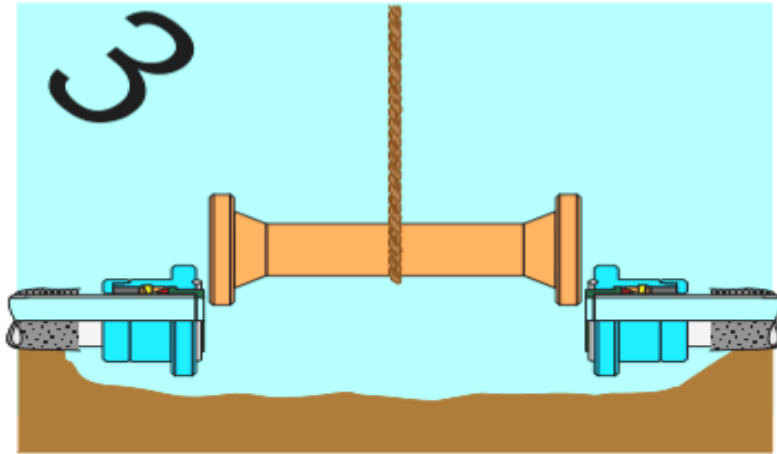
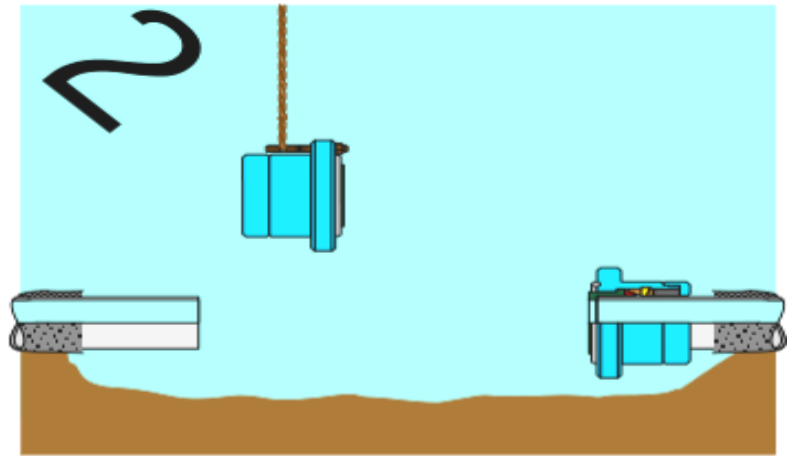
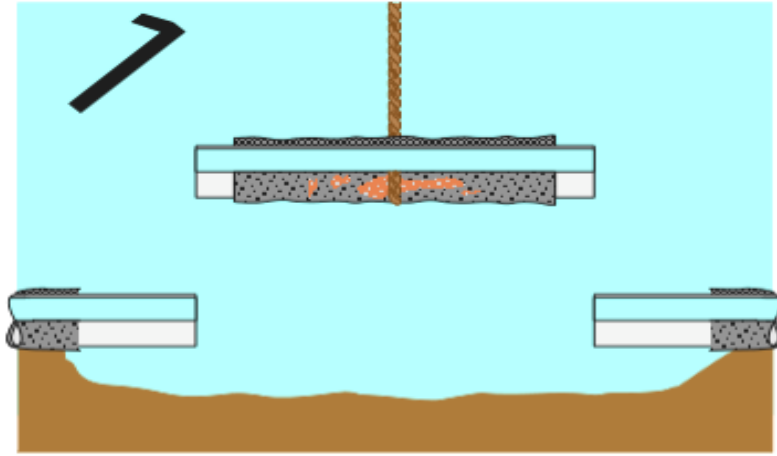


Pipe End
Check Tool

Pipeline Repair Systems- Benefits

- Suitable for both Diver and ROV assisted operations
- Quick installation
- Withstand full pipeline axial, bending and torsion loads while maintaining full pressure integrity
- No weldments are required, thus eliminating the associated Weld Procedures and Qualifications and NDT activities

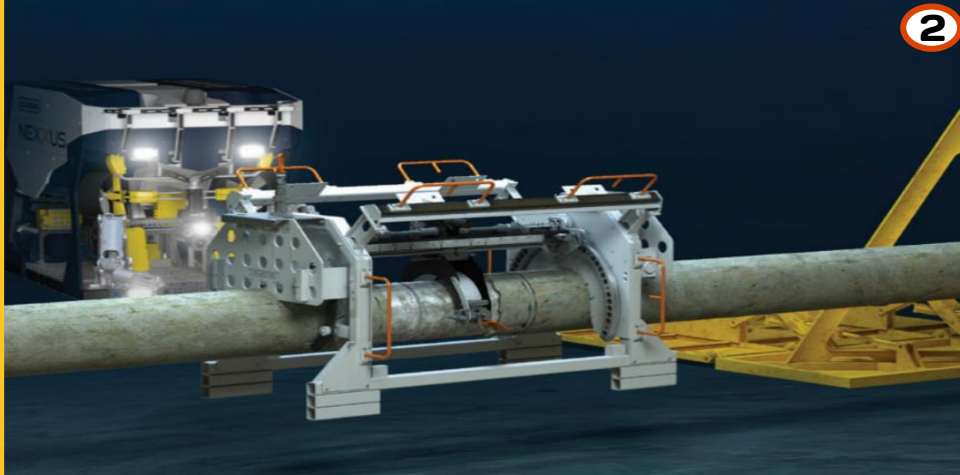
Pipeline Integrity



1



2

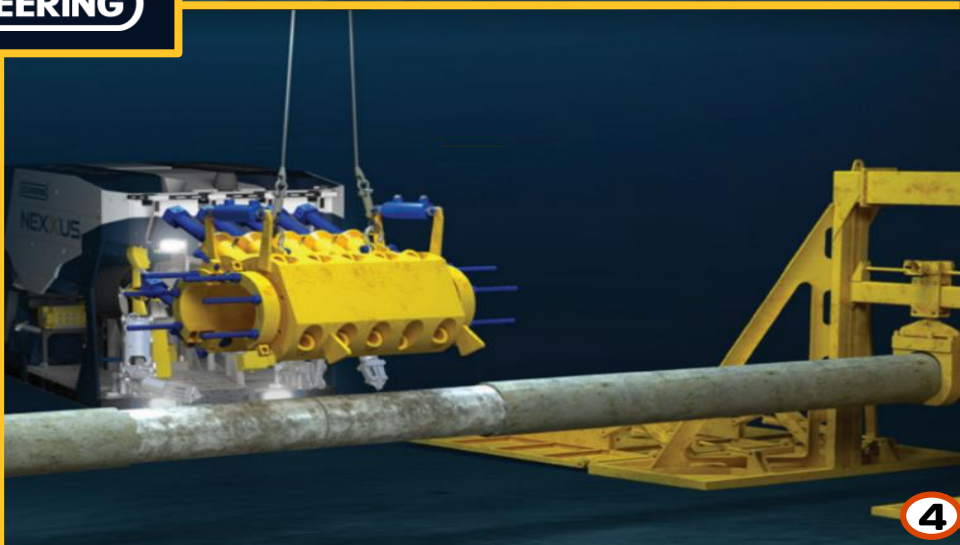


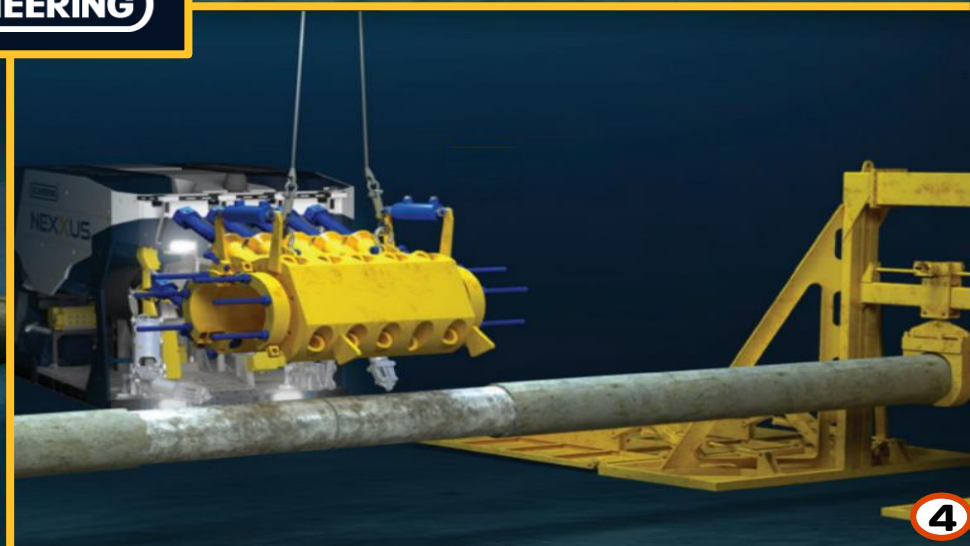
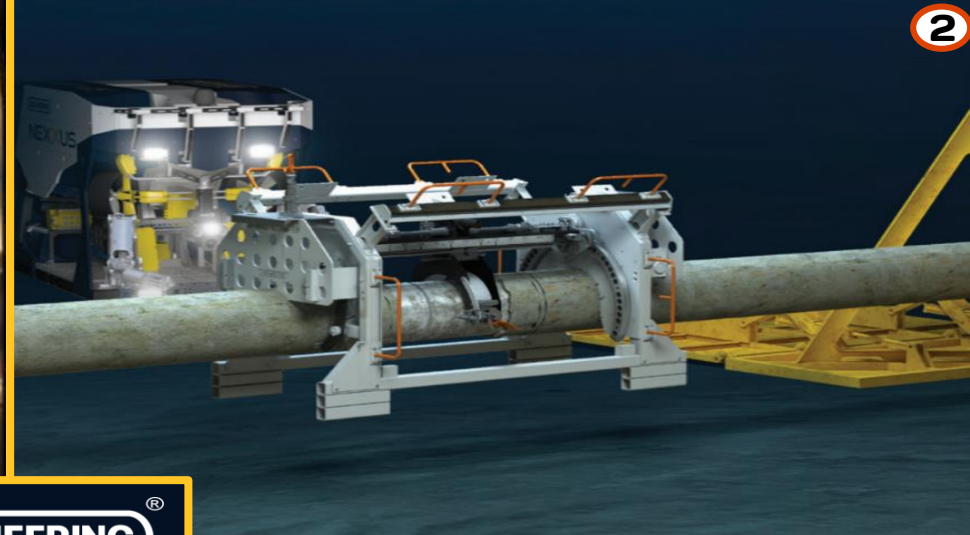
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3



4

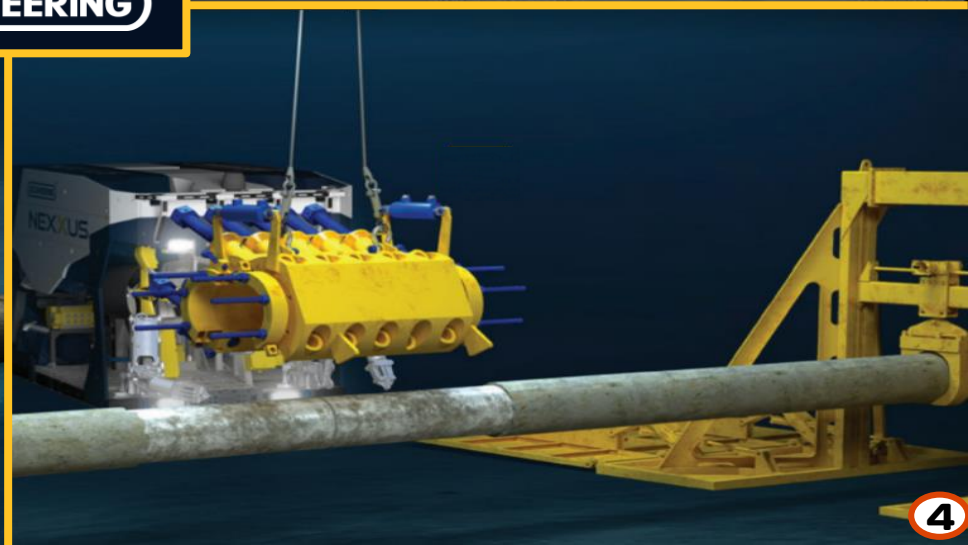


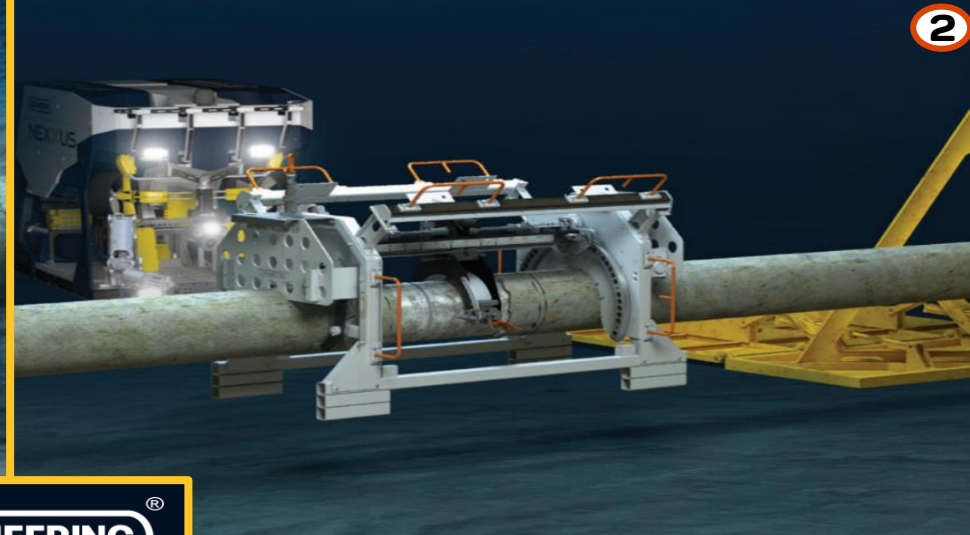


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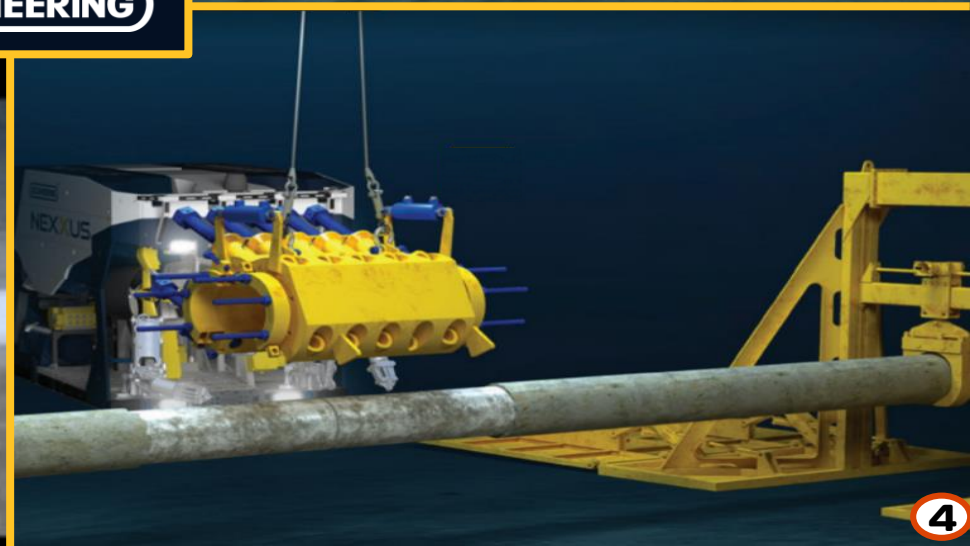


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1



2



OCEANEERING®

3



4

5 30 45 60 75 90 105

ROV

DPT: 77 m

ALT: 0 m

BTY: 77 m

062

TRN

10

0

2

8

4

7

02 DEC 13

01:47:45

Dive Number: 127

A large offshore oil rig is shown at night, illuminated by its own lights against a dark blue sky. The rig's complex structure, including its legs and deck, is visible. A small platform or crane is suspended in the air above the rig, also lit up. The overall scene conveys a sense of industrial activity in a remote, dark environment.

CONNECTING WHAT'S NEEDED — WITH — WHAT'S NEXT™