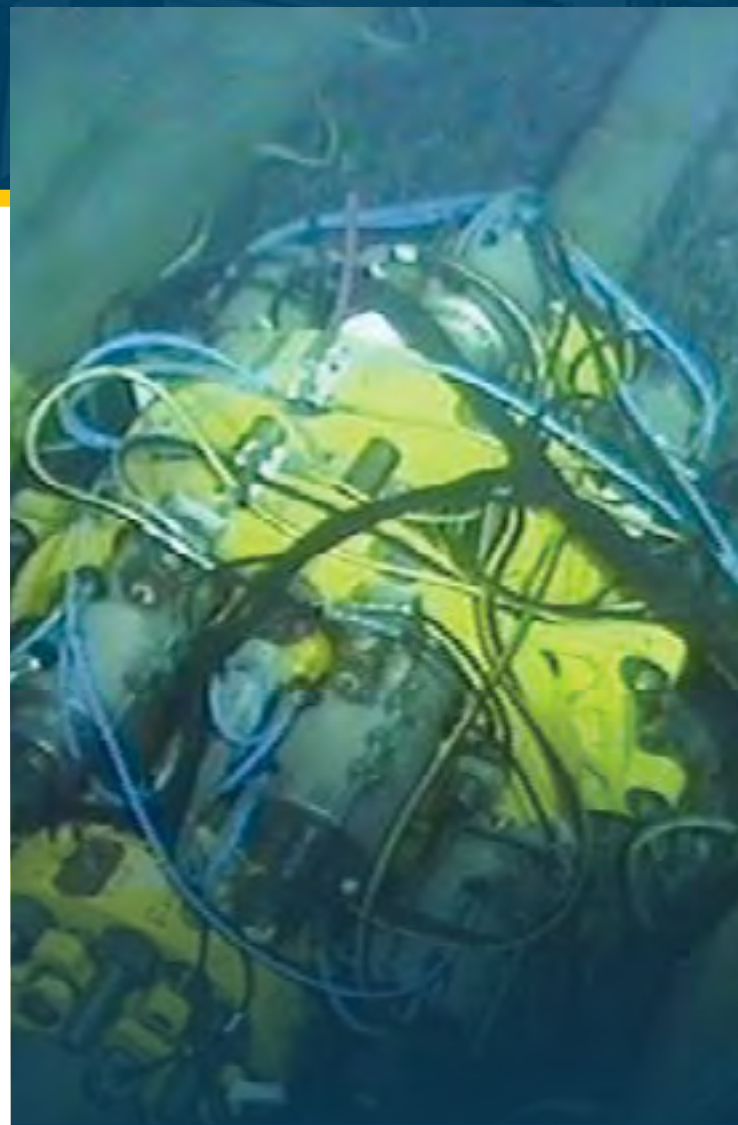


OUR SOLUTION PORTFOLIO

We have a field-proven track record in all of the following business areas:

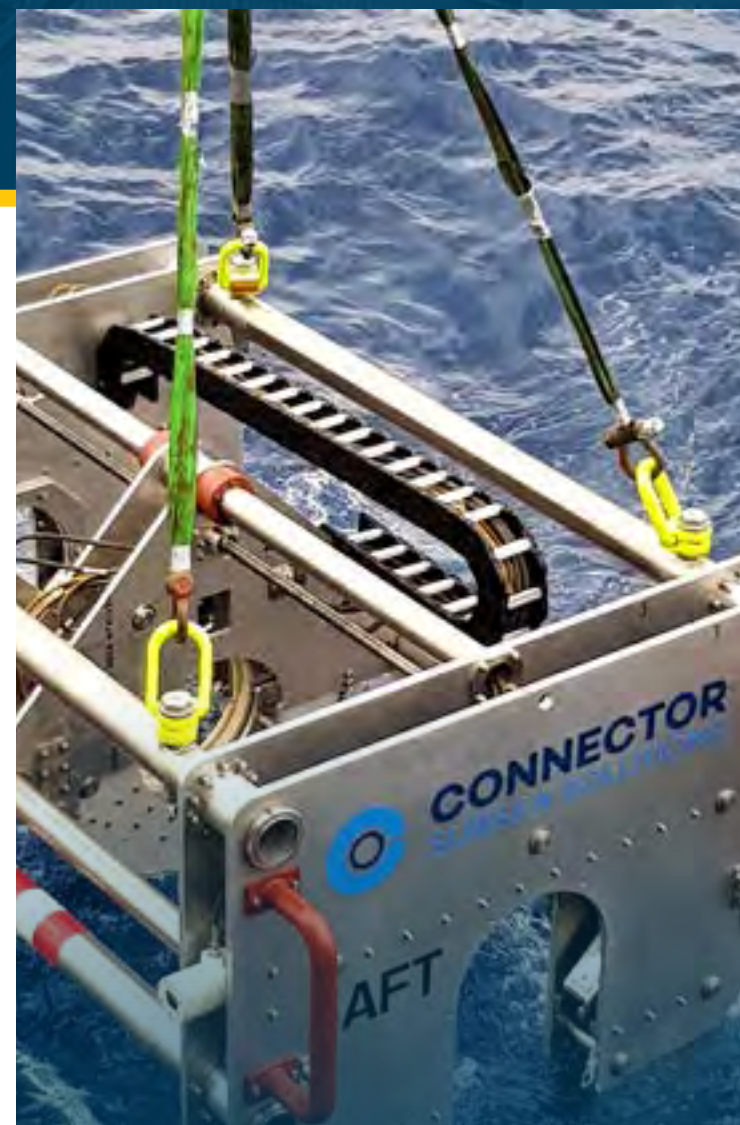


MORGRIP® CONNECTORS & CLAMPS

Diver-installed and remote MORGRIP® Pipeline Connectors & Clamps

Complete with all installation equipment & tooling

[LEARN MORE](#)



RENTAL SUITE - TIE-IN & REPAIR

Pipe Lift & Handling

Coating & Weld Seam Removal

Cutting and End Prep

Connector & Clamp Installation Frames

Riser Cleaning & Inspection Tool

[LEARN MORE](#)



EMERGENCY PIPELINE RE- PAIR SYSTEMS & CLUB

Global Pipeline Repair Club (GPRC)

EPRS Club

Equipment Maintenance and Storage

Personnel

Contingency

Procedures

Preparedness



SPECIAL SOLUTIONS

Remote MORGRIP® Pipe CRA Pipeline Repair

Pipe-In-Pipe Repair

Elbow Clamps

Conductor Repair

Holdback Clamps

Customer driven solutions

[LEARN MORE](#)



SUBSEA DISTRIBUTION PORTFOLIO

Couplers

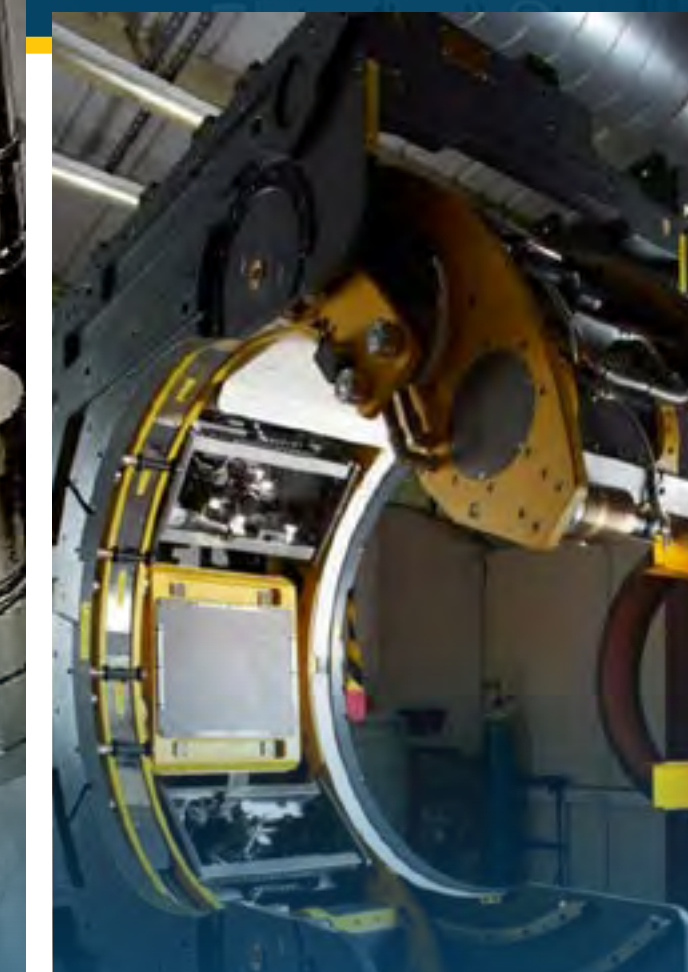
ROV Connectors

MQC Stab Plates

Small-Bore Ball Valves

Flying Leads & Ancillaries

[LEARN MORE](#)



FULLY REMOTE WELDING SYSTEMS

World's only field-proven-system for remote welding for pipeline tie-in and repair

Power Converters & Control Systems



ABOUT US

Multiple office locations

Global agent network

The home of MORGRIP®

[LEARN MORE](#)



-  CSS Head Office
-  CSS Office
-  Agent Location



WHO ARE WE

- Offices in Norway, UK, Croatia, Bosnia and Brazil
- 3,000sqm UK facilities and 4,000sqm Norway facilities
- 125+ dedicated employees
- Global agent network
- Complete Deepwater Tie-In and Pipeline Repair Solutions
- MORGRIP® Mechanical Pipeline Connectors since 1987
- Remote Subsea Pipeline Welding since 1995
- Subsea Distribution systems since 2011

THE HOME OF MORGRIP®

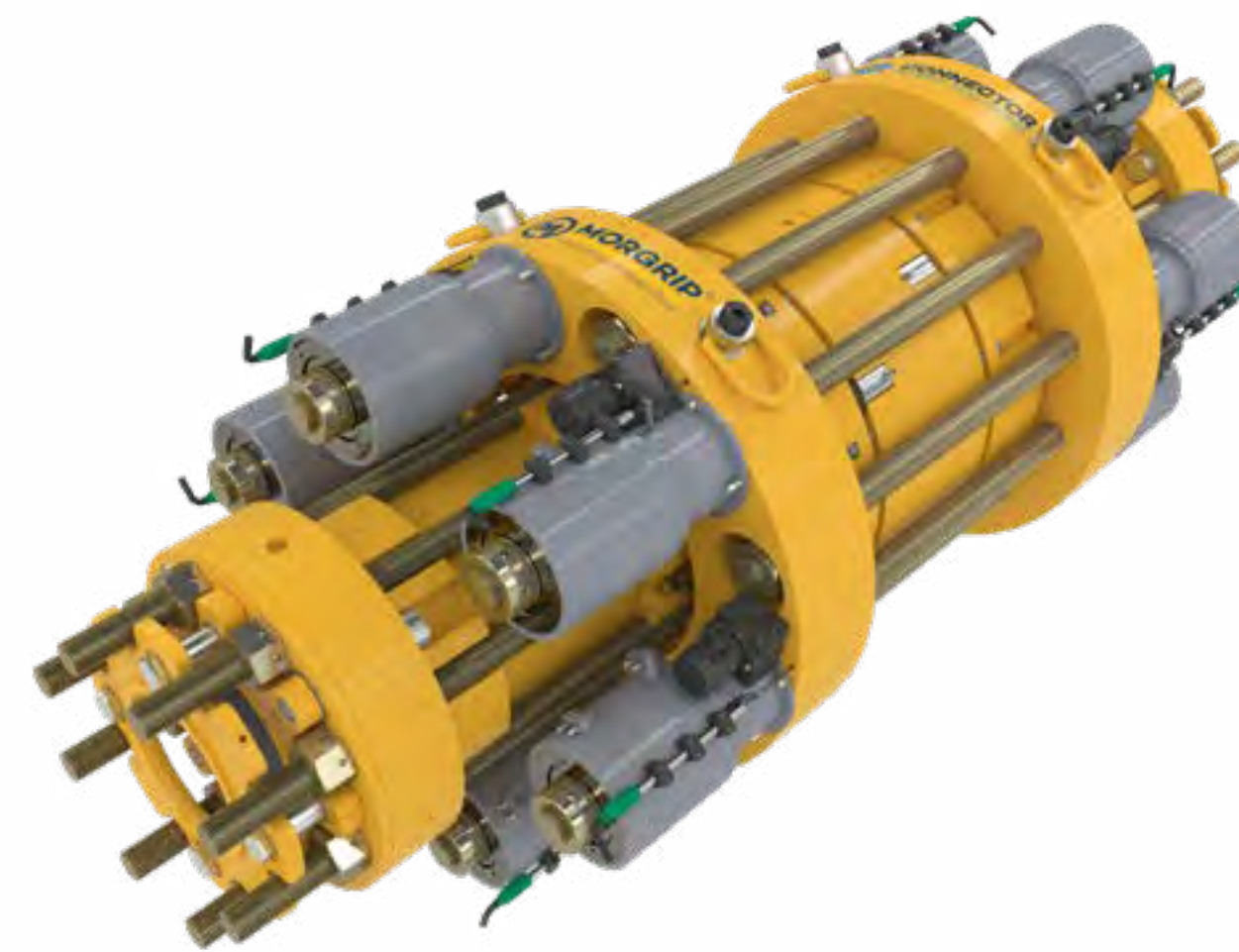
MORGRIP® Connectors and Clamps are the leading solutions for tie-in and pipeline repair, from diver installed to full remote installation. Since the late 1980's, over 3,200 MORGRIP® Connectors and Clamps have been supplied, with 100% in-service leak-free record.



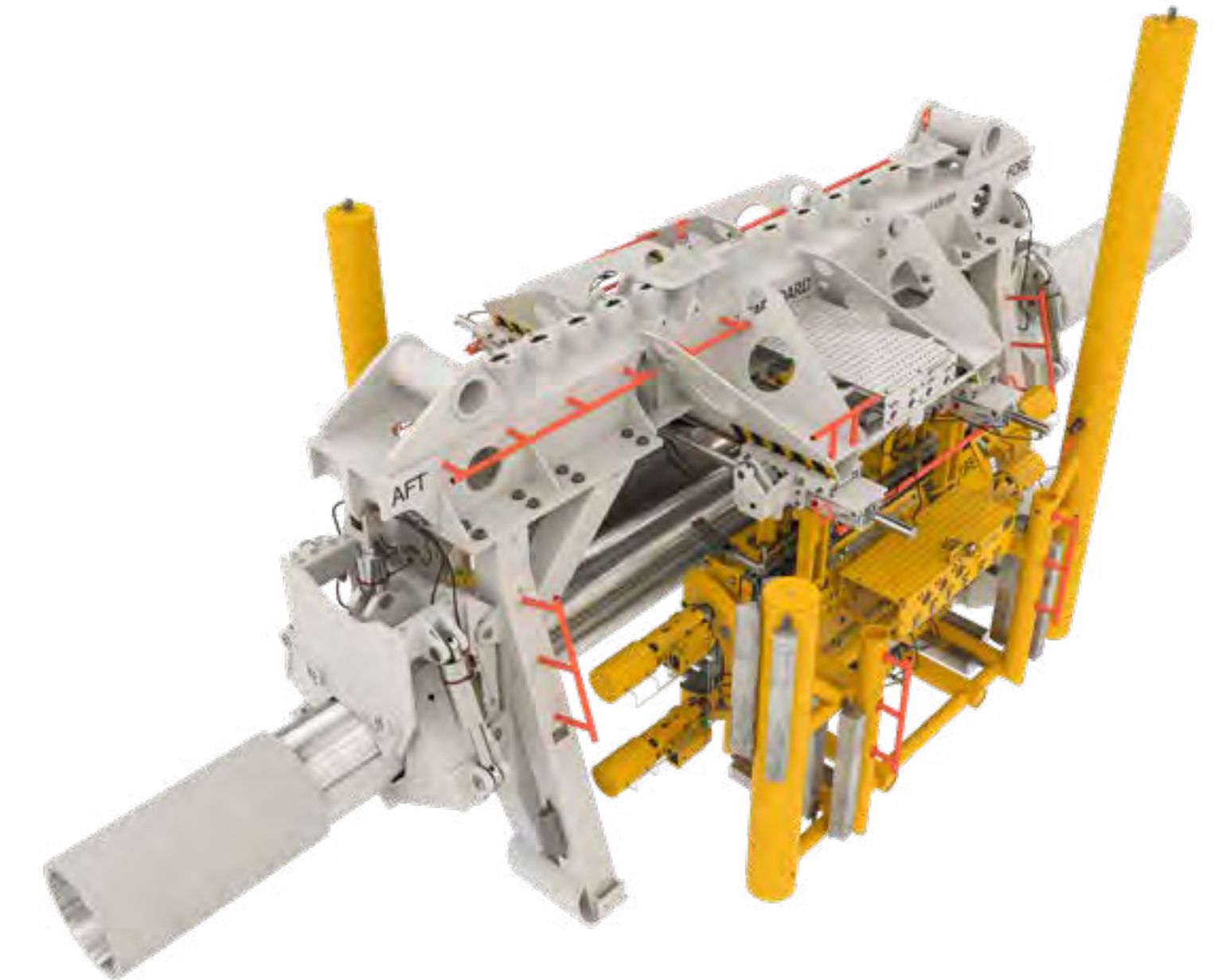


MORGRIP® CONNECTORS & CLAMPS

**Mechanical Pipeline
Connectors & Clamps
Since 1987**



MORGRIP® Connectors



MORGRIP® Clamps

MORE THAN 3200 MORGRIP® CONNECTORS & CLAMPS SUPPLIED

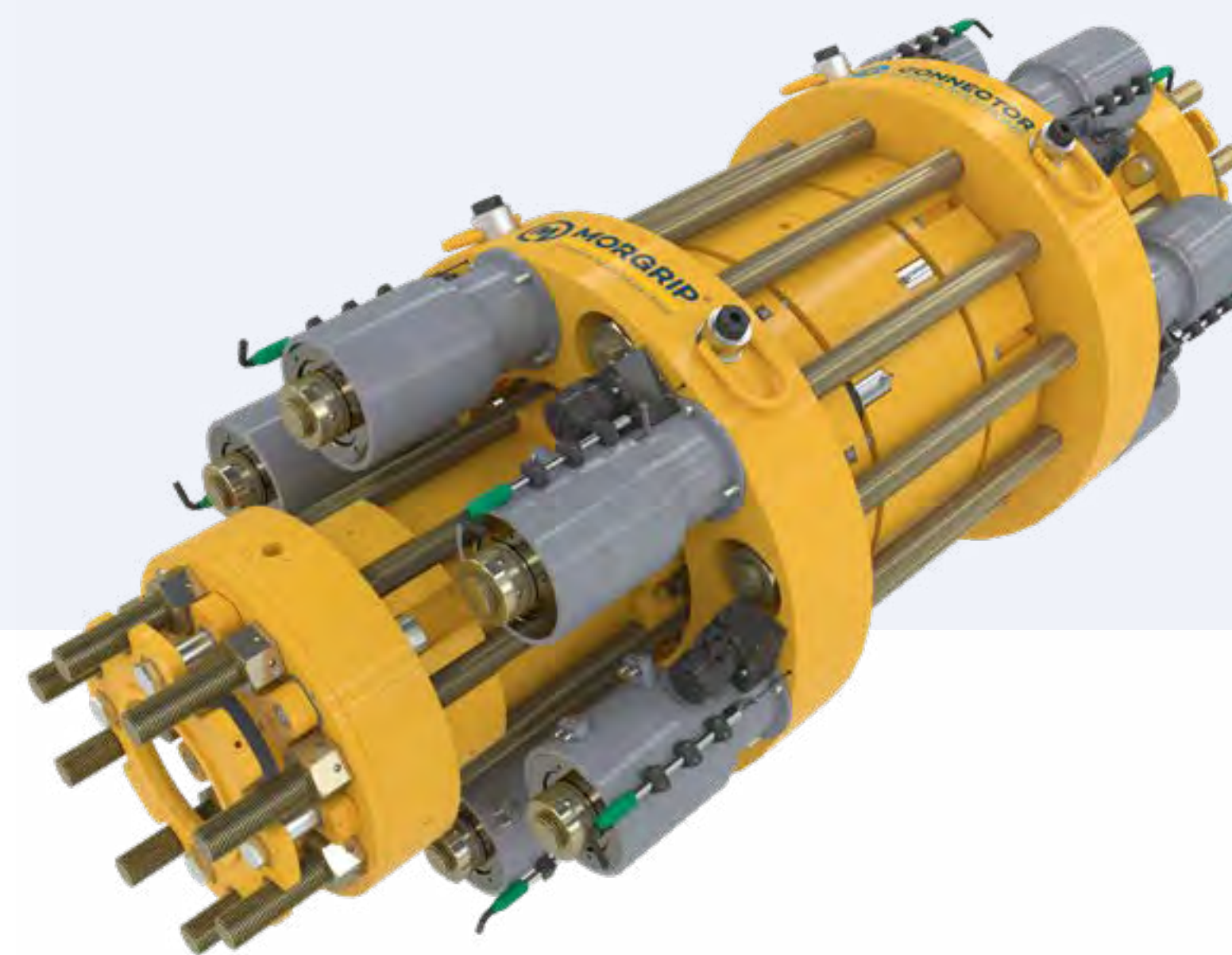
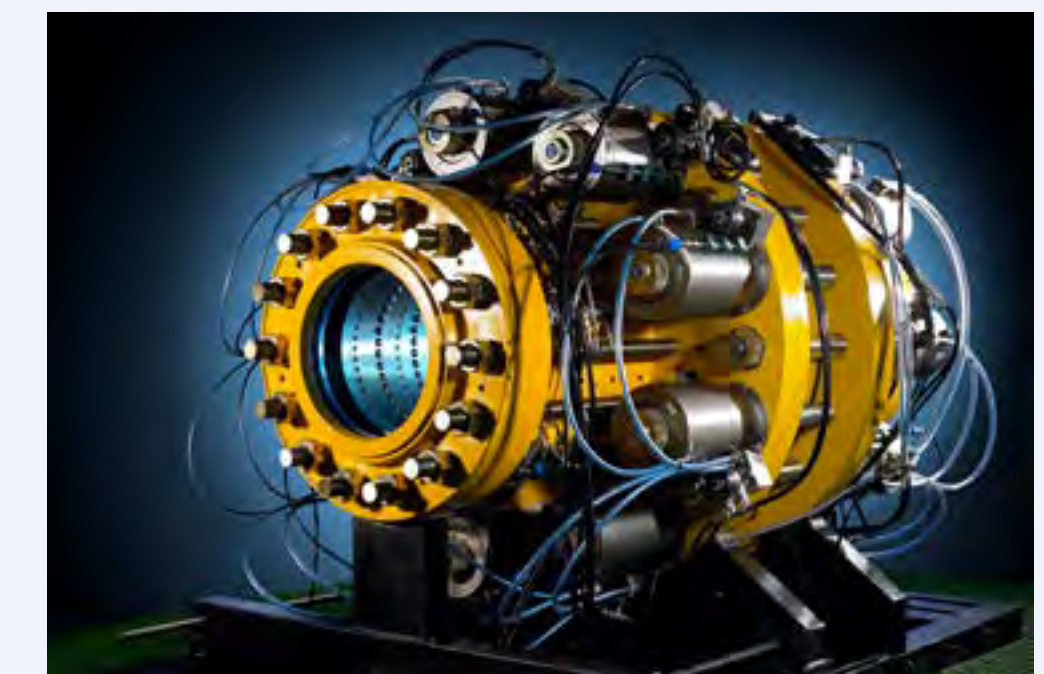
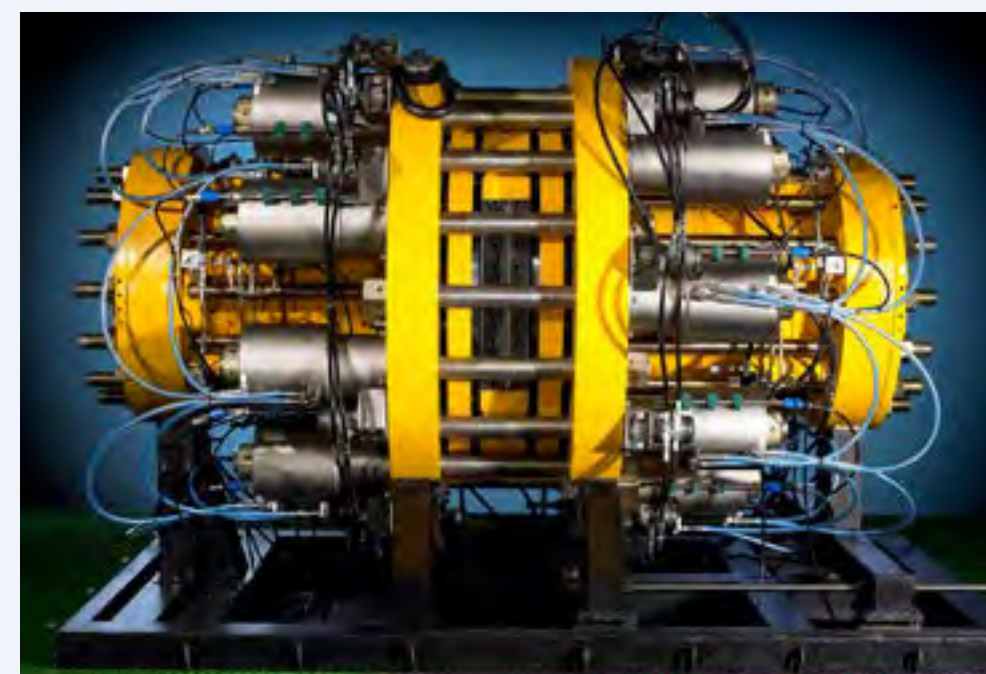
- DNVGL Type Approval from ½-44 in and 640bar
- Unique Graphite Sealing Technology
- High Temperature, High Pressure, Long Lifetime
- Unrivalled Track Record from Remote Repair Operations



MORGRIP® CONNECTORS

MORGRIP® CONNECTORS

MORGRIP® CLAMPS



MORGRIP® CONNECTOR FOR EVERY APPLICATION

- MORGRIP® Topside
- MORGRIP® Diver-Installed – for shallow water
- MORGRIP® Fully Remote – for deepwater and remote operations
- MORGRIP® CLiP – for CRA and clad lines
- MORGRIP® Small-Bore – for remote tubing repairs
- MORGRIP® Pipe-In-Pipe – for pipe-in-pipe repairs

OUR MORGRIP® CONNECTOR PORTFOLIO

**MORSMART
Collet**



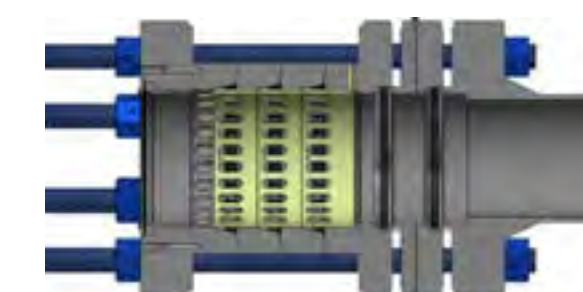
- Everyday repairs, thin wall, old pipe
- Mid range size / pressure (as standard)
- Collet grip, Viton seals

**MORGRIP®
Collet**



- Blend of both, optional 3rd party certification,
- Bespoke & standard features
- Collet grip, choice of seals (graphite / Vitonetc)
- Often best choice for large diameter

**MORGRIP® 3000
Ball & Taper**



- Performance Focussed
- Type approved, bespoke design
- High criticality, dynamic load
- Graphite seals, Ball Grip

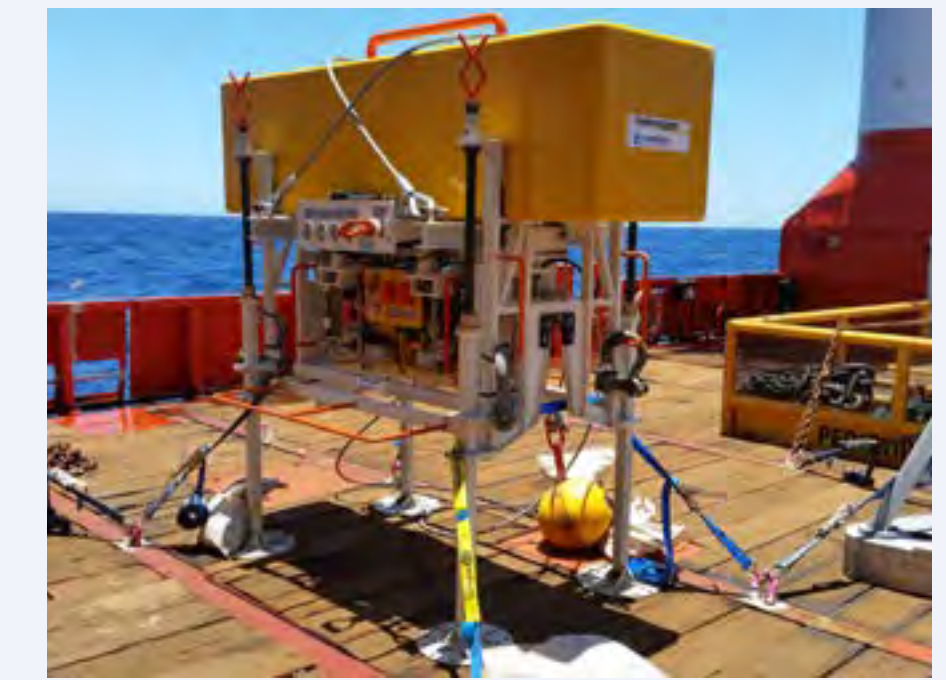
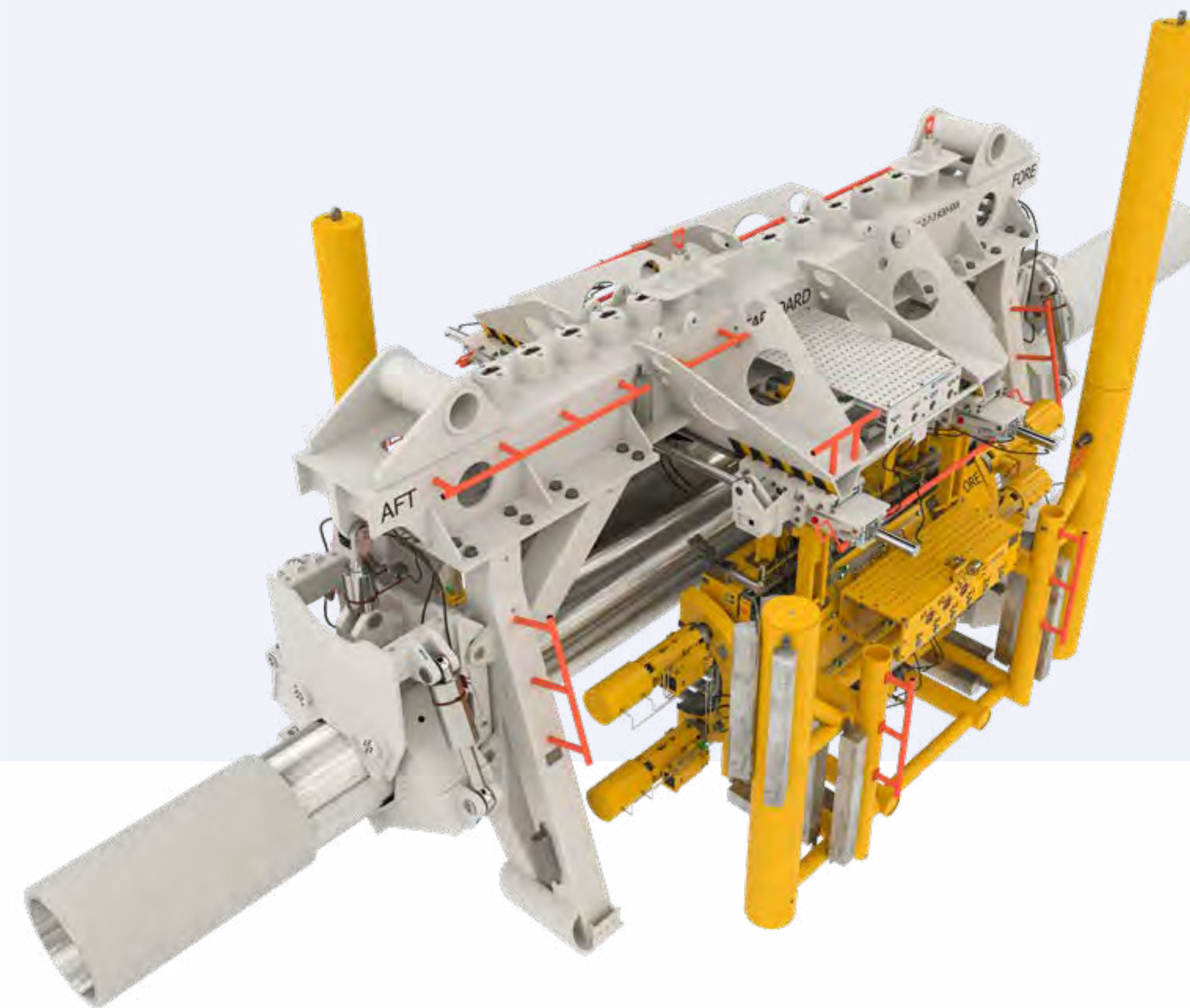




MORGRIP® CLAMPS

MORGRIP® CONNECTORS

MORGRIP® CLAMPS



OUR MORGRIP® CLAMP PORTFOLIO – DIVER INSTALLED AND FULLY REMOTE

- Structural & Leak Sealing Clamps
- Leak Sealing Clamps
- T-Clamps & Hot-tap Clamps
- Anchor & Holdback Clamps
- Flange Enclosing Clamps
- Conductor Repair Clamps

DESIGN BASIS

- Pressure Rating: up to 690 bar / 10,000 psi
- Pipeline OD: 2-48 in
- Sealing: Graphite or Elastomer
- Activation: Bolted or Hydraulic Boltless Activation
- Structural Gripping Options: Onto Bare Steel or Pipeline Insulation Coating





RENTAL SUITE – TIE-IN & REPAIR

Complete suite of tooling for
deepwater pipeline repairs



Pipeline Lifting &
Handling Frames



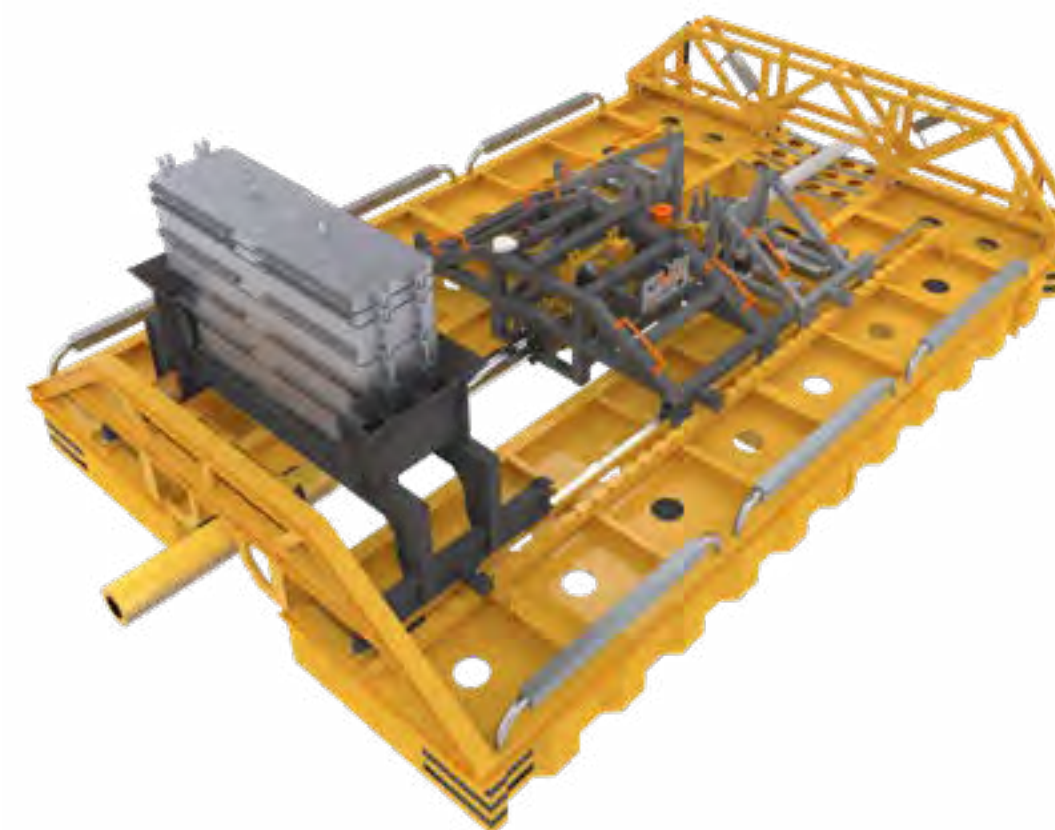
Deepwater Coating
Removal Tools



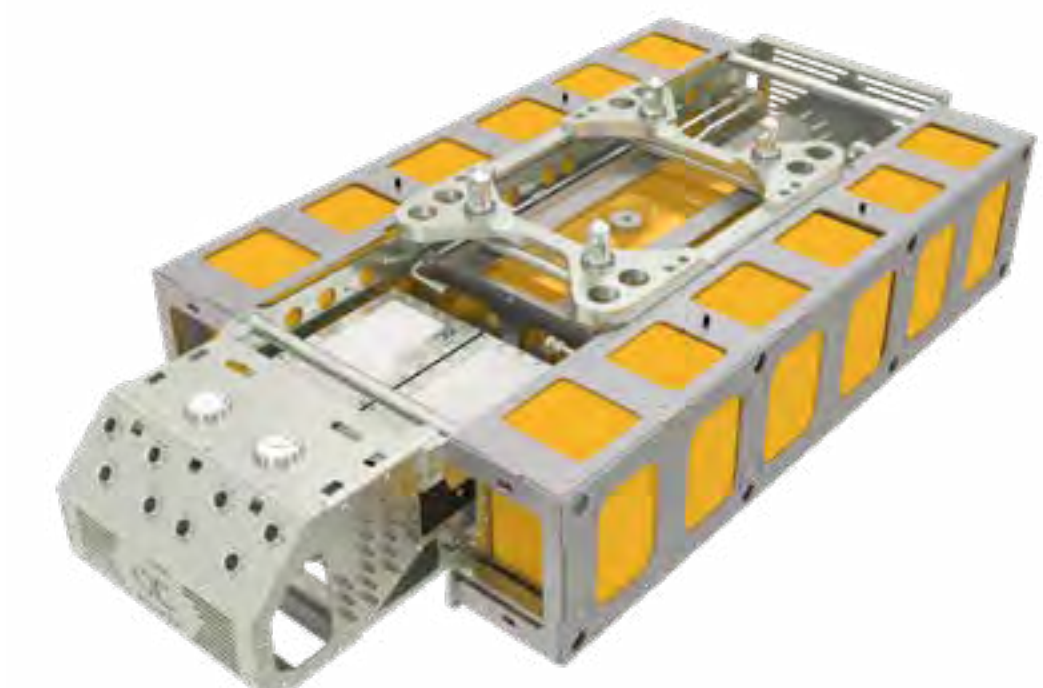
ROV Operated
Diamond Wire Saws



Pipe End
Preparation Tool



Remote Connector & Clamp
Installation Frames



ROV Skid, Backpack &
Control Systems



PIPELINE LIFTING & HANDLING FRAMES



PIPELINE LIFTING & HANDLING FRAMES

DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS

CAPACITIES

- Pipeline size 4-24 in
- Lifting capacity (SWL) 25 t
- Lifting height 2,100 mm
- Reach below seabed 2,000 mm
- Transversal travel ± 500 mm (from centre)
- Allowable slope for operation 15°
- Water depth (m) 3,000 mm

DIMENSIONS & WEIGHT

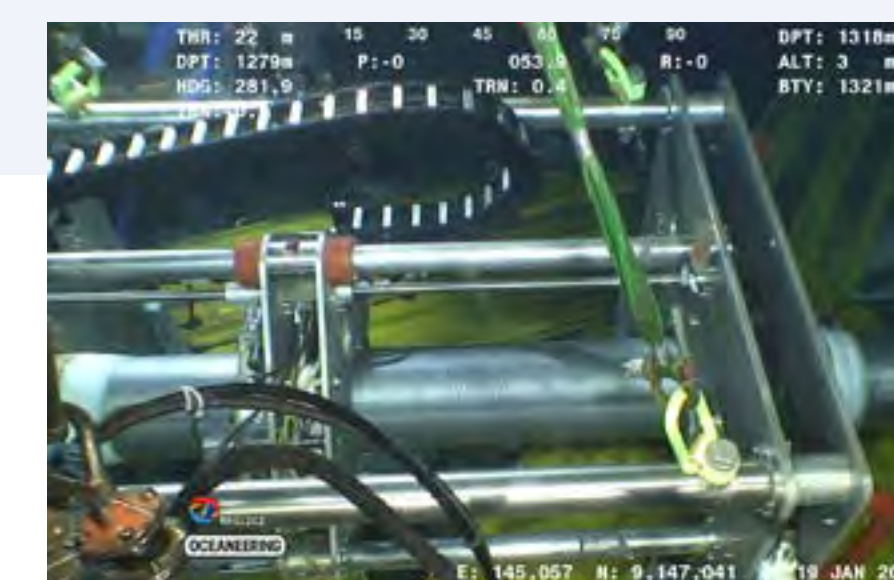
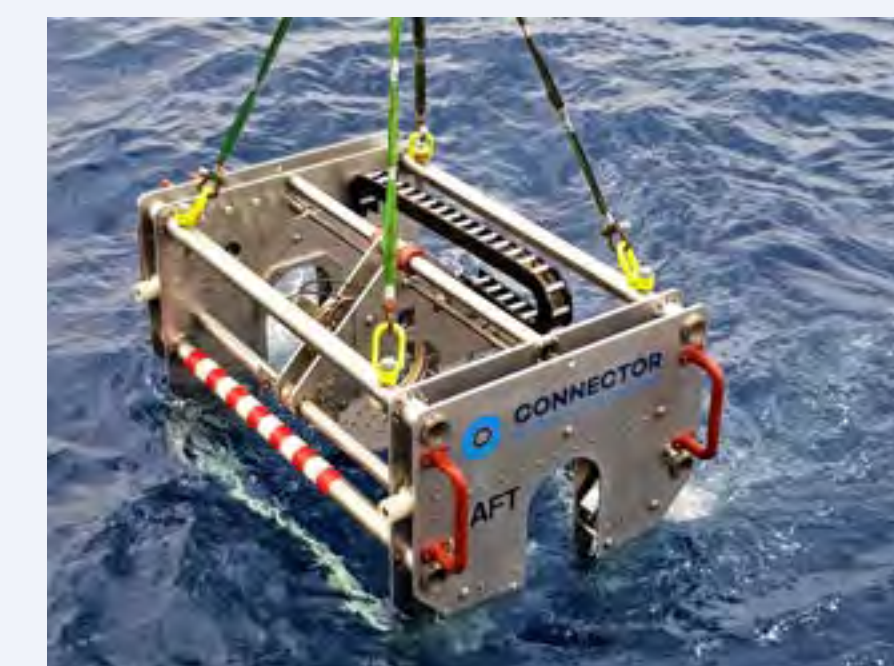
- Unfolded dimensions (HxWxD) 2,900 x 4,268 x 5,102 mm
- Folded dimensions (HxWxD) 2,900 x 2,352 x 3,053 mm
- Mass of tool 5,000 kg
- Weight of tool in air 49,050 N (5,000 kgf)
- Weight of tool in water 42,674 N (4,350 kgf)

INTERFACES

- Diver operation Powered through hydraulic interface
- ROV operated Compliant with CSS ROV skid and topside control system
- ROV interface specification 4 Line stab and Receptacle, Ø35, 10k, API 17D (x4)
- Max. working pressure 207 bar / 3,000 psi



DEEPWATER COATING REMOVAL TOOLS



PIPELINE LIFTING & HANDLING FRAMES

DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS

CAPACITIES

- Pipeline size
4-14 in
10-20 in
18-36 in
- Axial stroke
(length of coating removal)
1,300 mm
- Radial stroke
(dept of coating removal)
35 mm
- Allowable slope for operation
30°
- Water depth (m)
3,000 mm

DIMENSIONS & WEIGHT

- Dimensions (HxWxD)
4-14in: 1.7 x 1.6 x 2.7 m
10-20in: 2.0 x 2.1 x 2.7 m
18-36in: 2.8 x 2.9 x 3.0 m
- Mass of tool
4-14in: 1,445 kg
10-20in: 1,926 kg
18-36in: 3,154 kg

INTERFACES

- ROV operated
Compliant with CSS ROV skid and topside control system
- ROV interface specification
4 Line stab and Receptacle, Ø35, 10k, API 17D (x3)
- Max. working pressure
207 bar / 3,000 psi





ROV OPERATED DIAMOND WIRE SAWS

PIPELINE LIFTING & HANDLING FRAMES

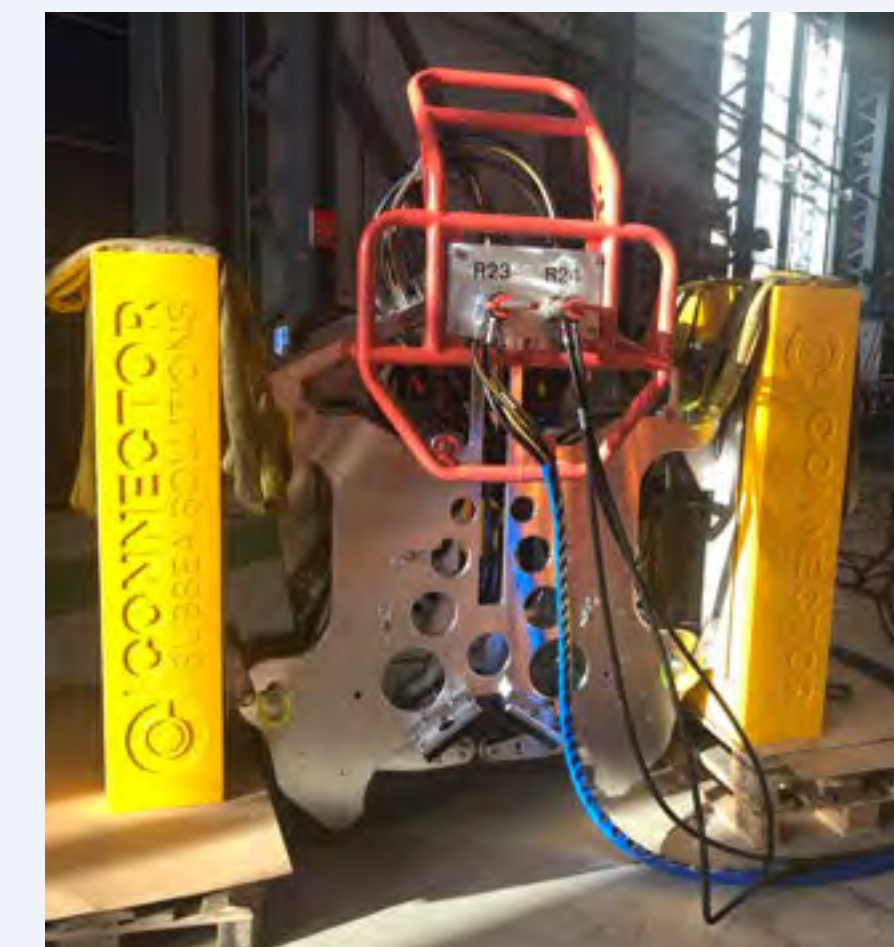
DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS



CAPACITIES

- Cutting capacity 6-20 in (152-508 mm)
- Feed stroke 26 in (660 mm)
- Depth rating 3,000 mwd

DIMENSIONS & WEIGHT

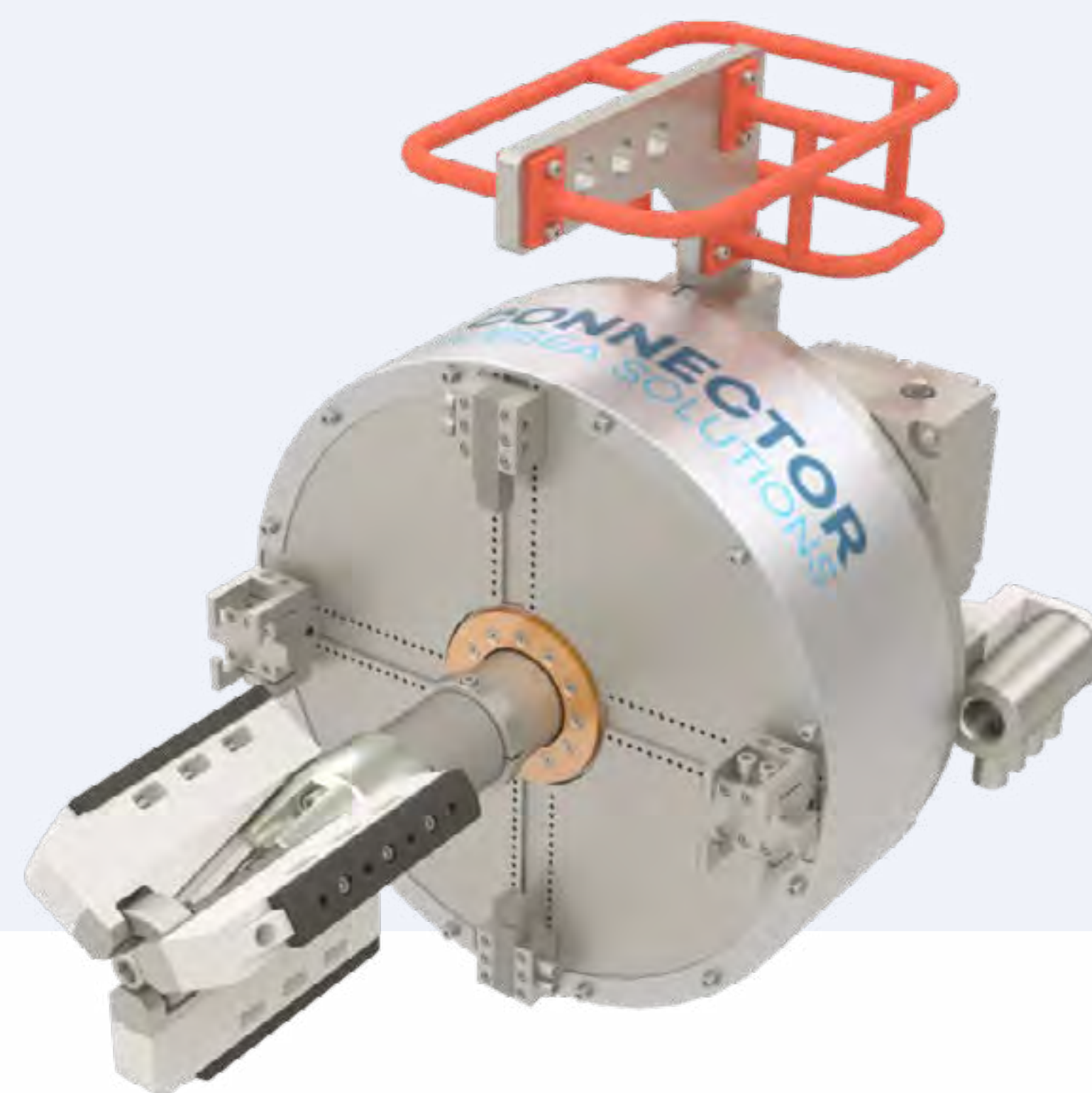
- Dimensions (HxWxD) 2,825 x 2,260 x 923 mm
- Mass 828 kg
- Weight in air 8,120 N (828 kgf)
- Weight submerged 490 N (50 kgf)

INTERFACES

- ROV grabber bar Top and front
48.3 mm diameter
- Hydraulic receptacles Front mounted
1 x 4 line and 1 x 3 line
- Lifting & handling 4 x lifting points
Rotating shackle, 2 ton
Sling leg min. 2,000 mm



PIPE END PREPARATION TOOL



PIPELINE LIFTING & HANDLING FRAMES

DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS

CAPACITIES

- Pipeline size 6-16 in
- Water depth (m) 3,000 m

DIMENSIONS & WEIGHT

- Dimensions (HxWxD) 0.8 x 1.2 x 1.0 m
- Mass of tool 270 kg
- Weight of tool in air 2,649 N (270 kgf)
- Submerged weight of tool 2,207 N (225 kgf)

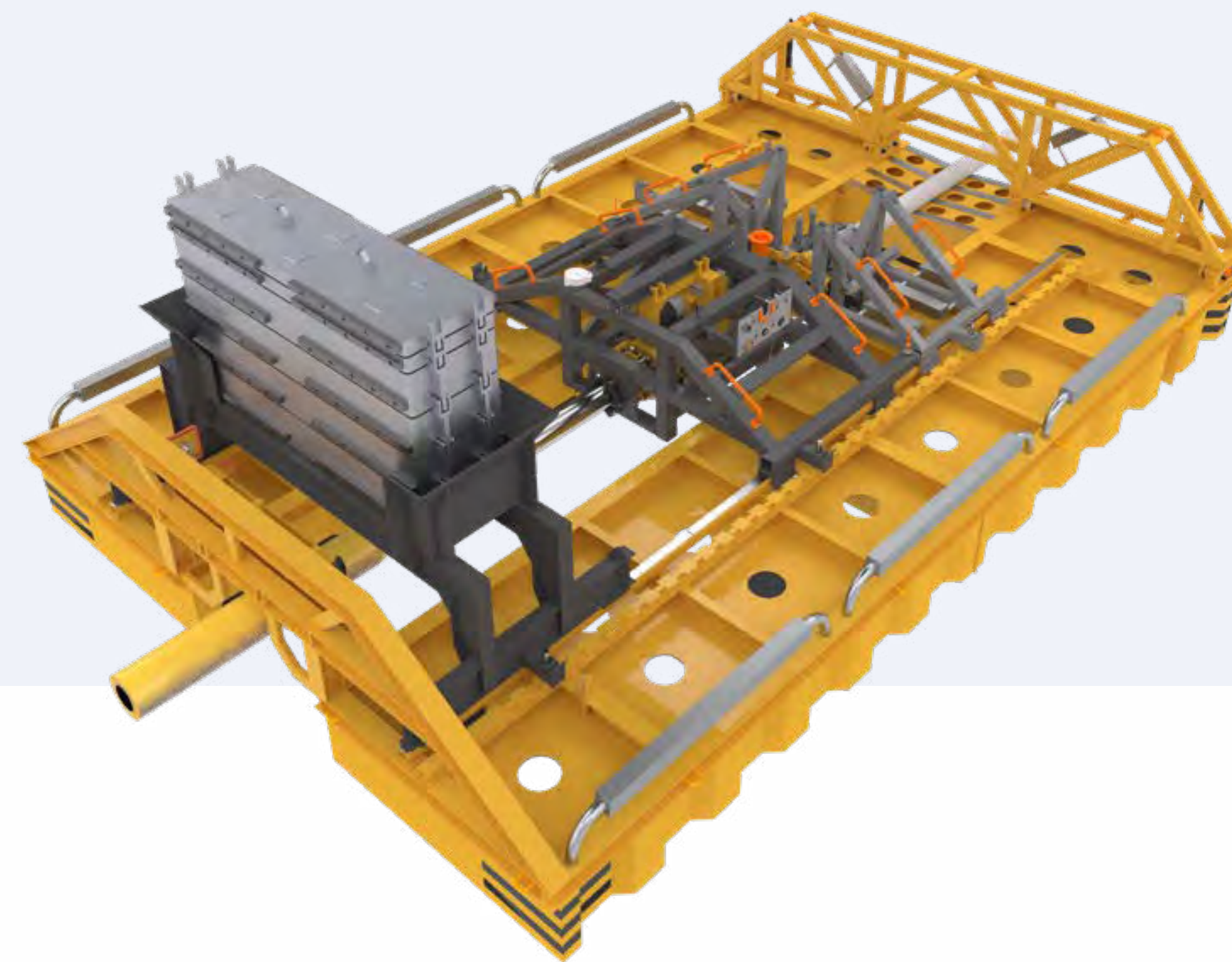
INTERFACES

- ROV operated Compliant with CSS ROV skid and topside control system. Requires pressure and flow control
- ROV interface specification 4 Line stab and Receptacle, Ø35, 10k, API 17D (x2)
- Max. working pressure 207 bar / 3,000 psi





REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES



PIPELINE LIFTING & HANDLING FRAMES

DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS

CAPACITIES

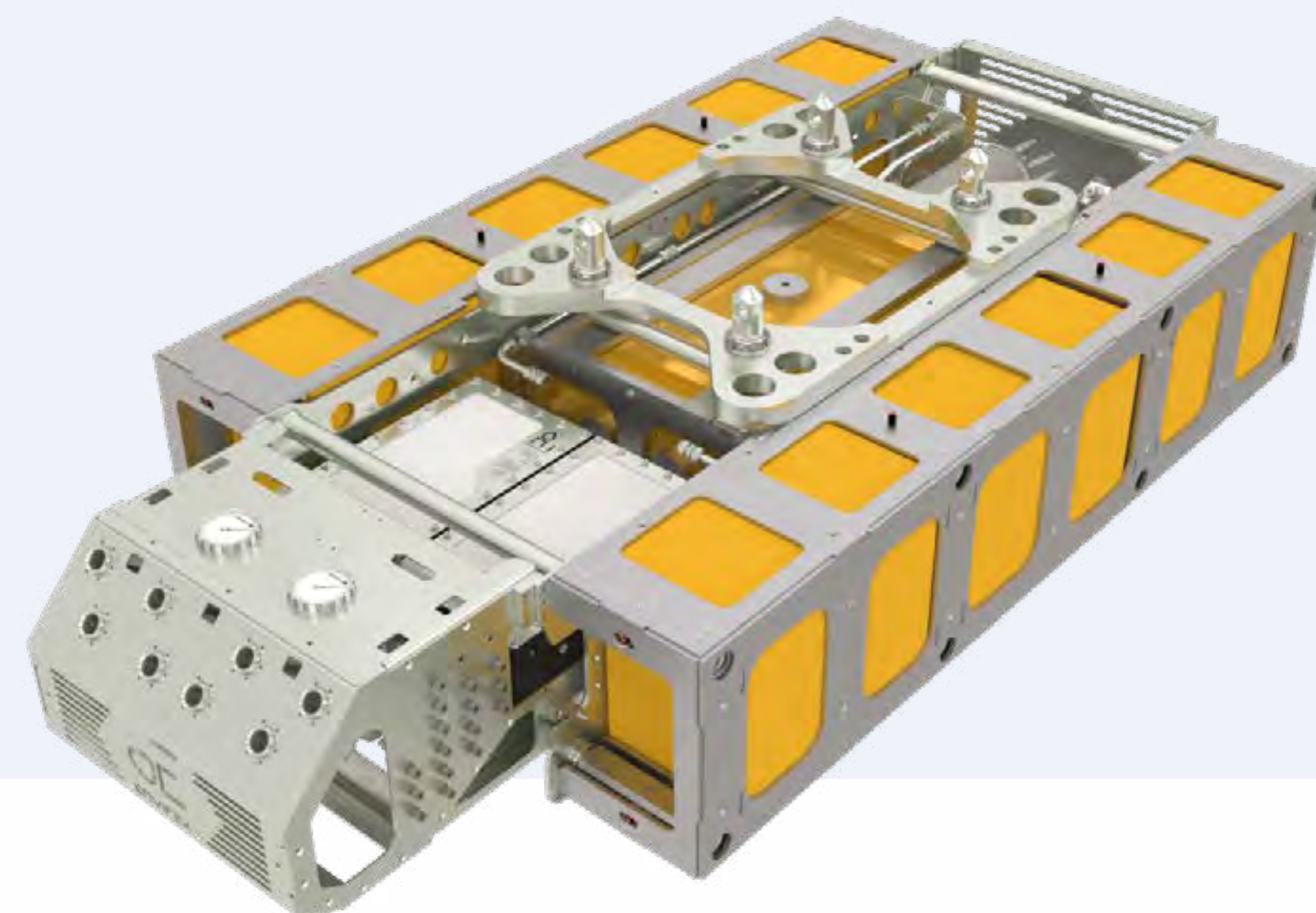
- Pipeline size ½-48 in
- Water depth (m) 3,000 m
- Orientation Horizontal through to vertical
- Frame type Trolley – supporting from beneath
Frame – supporting from above
- Connector/Clamp Interface Can be used with most repair units in the market
Qualified for MORGRIP tolerances based on DNV Type Approval for permanent subsea pipeline repair

INTERFACES

- Diver operated Powered through hydraulic interface
- ROV operated Compliant with CSS ROV skid and topside control system
- Installation Installation Deck Crane & WROV



ROV SKID, BACKPACK & CONTROL SYSTEM



PIPELINE LIFTING & HANDLING FRAMES

DEEPWATER COATING REMOVAL TOOLS

ROV OPERATED DIAMOND WIRE SAWS

PIPE END PREPARATION TOOL

REMOTE CONNECTOR & CLAMP INSTALLATION FRAMES

ROV SKID, BACKPACK & CONTROL SYSTEMS

CAPACITIES

	ROV Skid	ROV Backpack
• Reservoir Including Dirtypack with motor, filters & pump	200l Capacity	16l Capacity
• Valve Output	2 packs, 8 valves each Flow: 0-40l/min. Supply Pressure: 0-210 bar	1 packs, 6 valves each Flow: 0-70l/min. Max Supply Pressure: 0-210 bar
• High Pressure Boost	Supply Pressure: 0-1500 bar	N/A
• Power Canister Output	110V from 24V	N/A

DIMENSIONS AND WEIGHT

	ROV Skid	ROV Backpack
• Dimensions (HxWxD)	540 x 1460 x 3003 mm	900 x 1060 x 574 mm
• Mass of ROV Skid	1200 kg	230 kg
• Weight of ROV Skid in Air	11,768 N (1200 kgf)	2256 N (230 kgf)
• Weight of ROV Skid submerged	490 N (50 kgf)	1549 N (158 kgf)





SPECIAL SOLUTIONS

**Bespoke
engineering for
complex projects**



DEEPWATER “ON INSULATION” HOLDBACK CLAMP

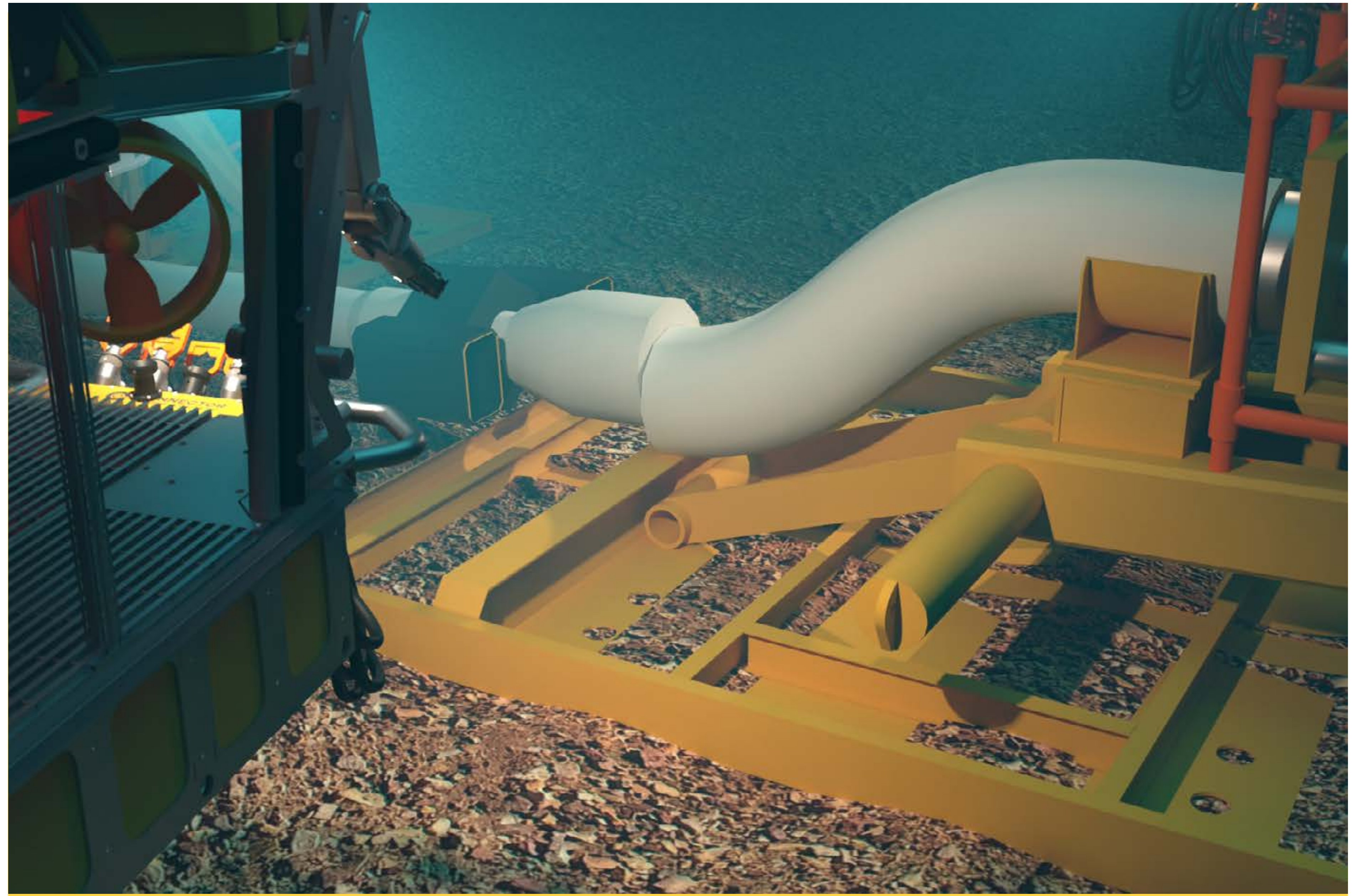


Please contact a member of the team to find out more information on this project





PIPE-IN-PIPE FLET REPLACEMENT

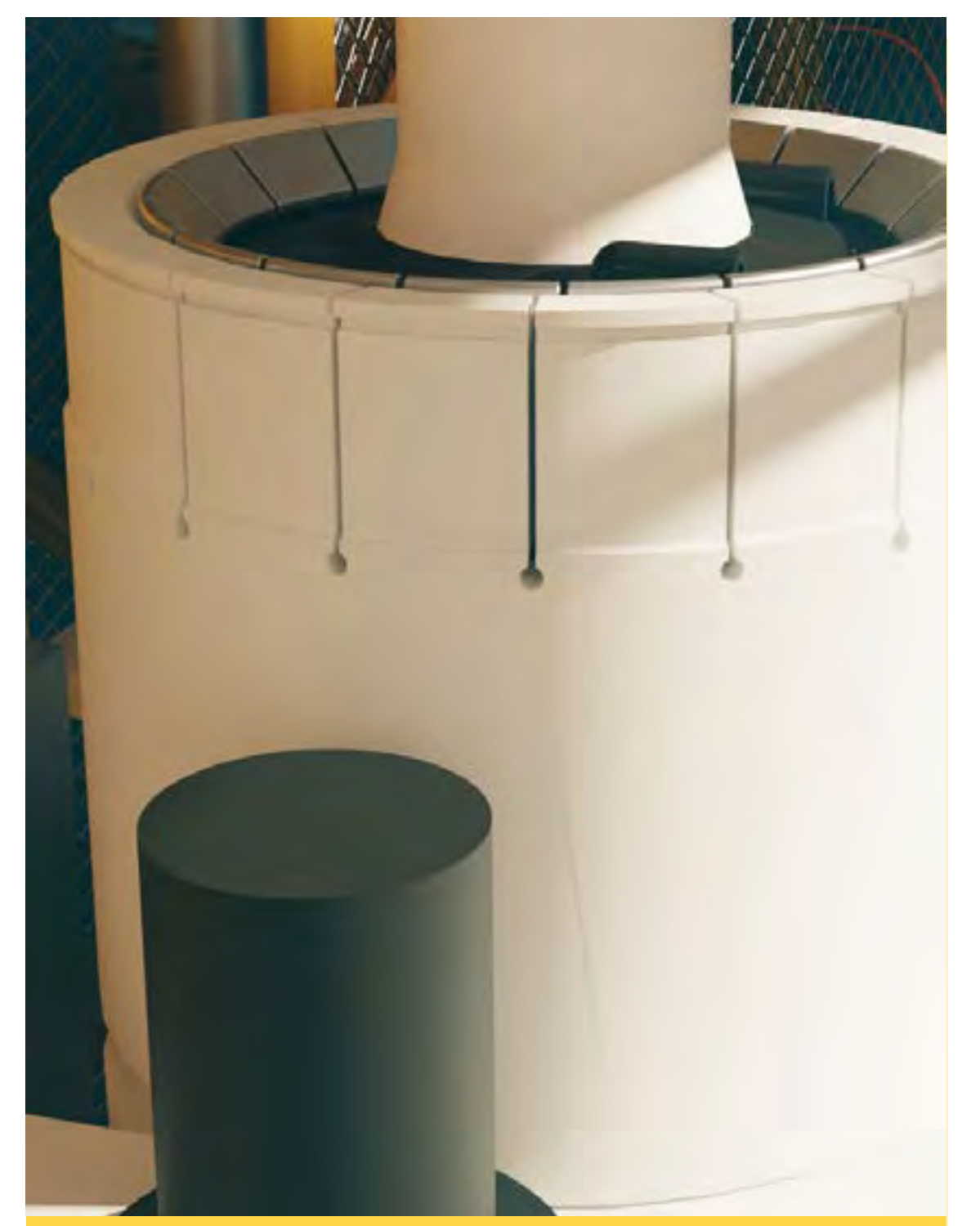
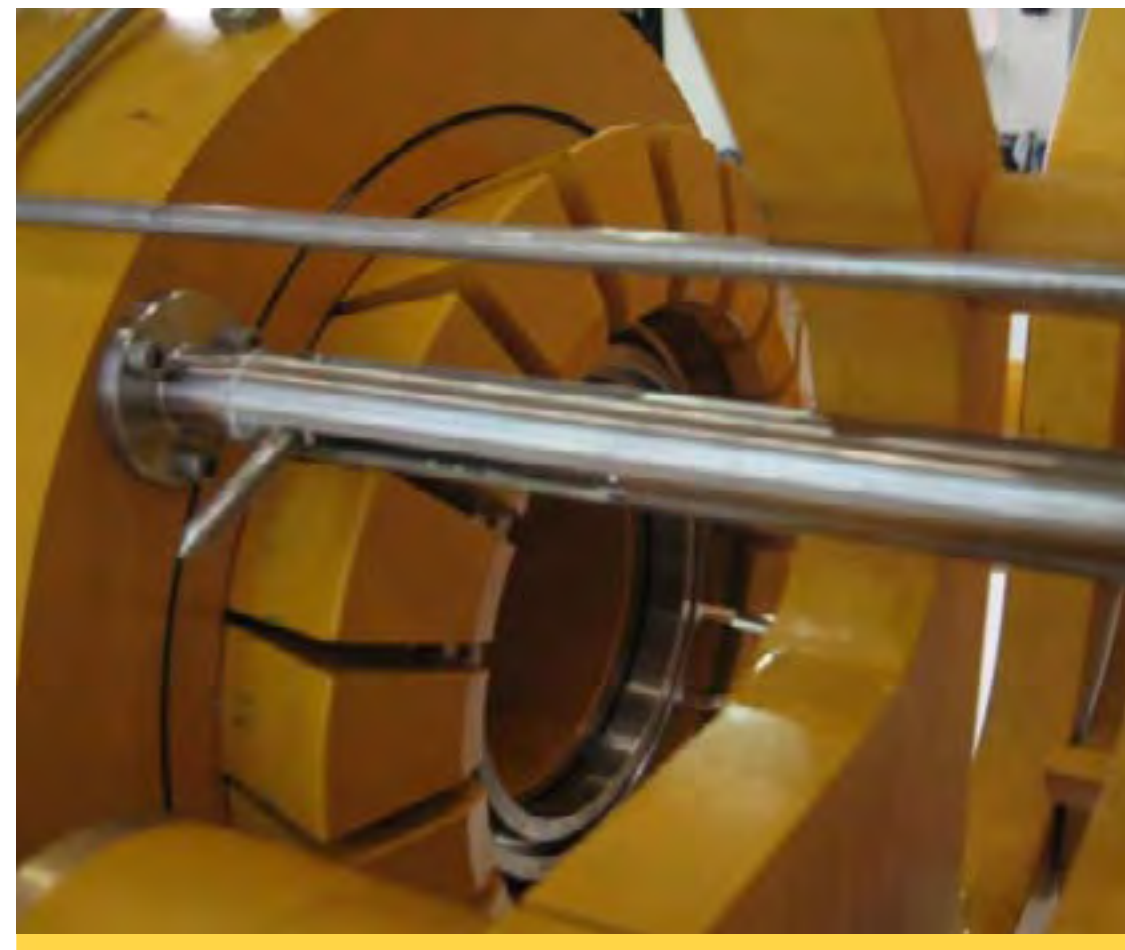


Please contact a member of the team to find out more information on this project





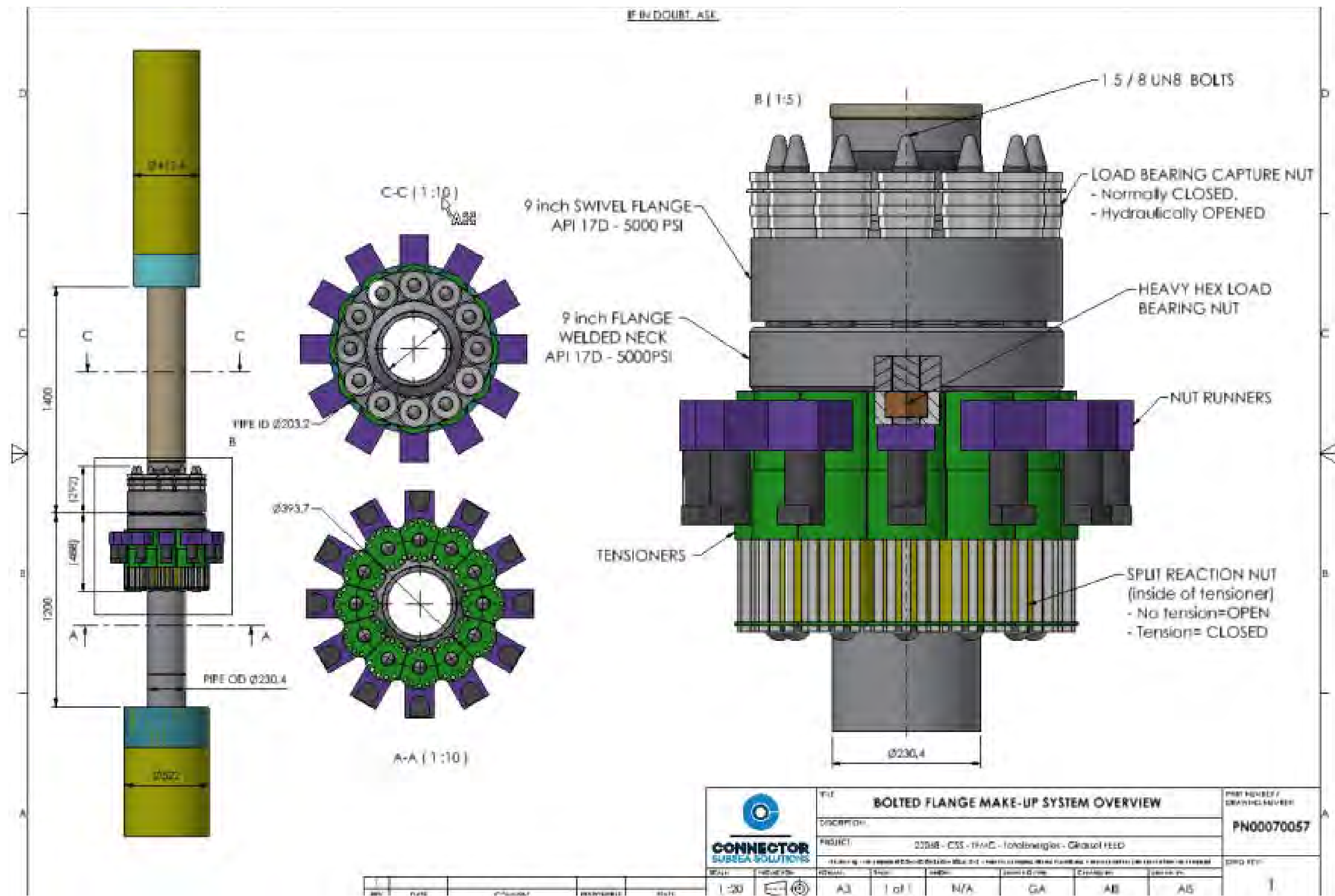
REMOTE API FLANGE TIE-IN SYSTEM



Please contact a member of the team to find out more information on this project



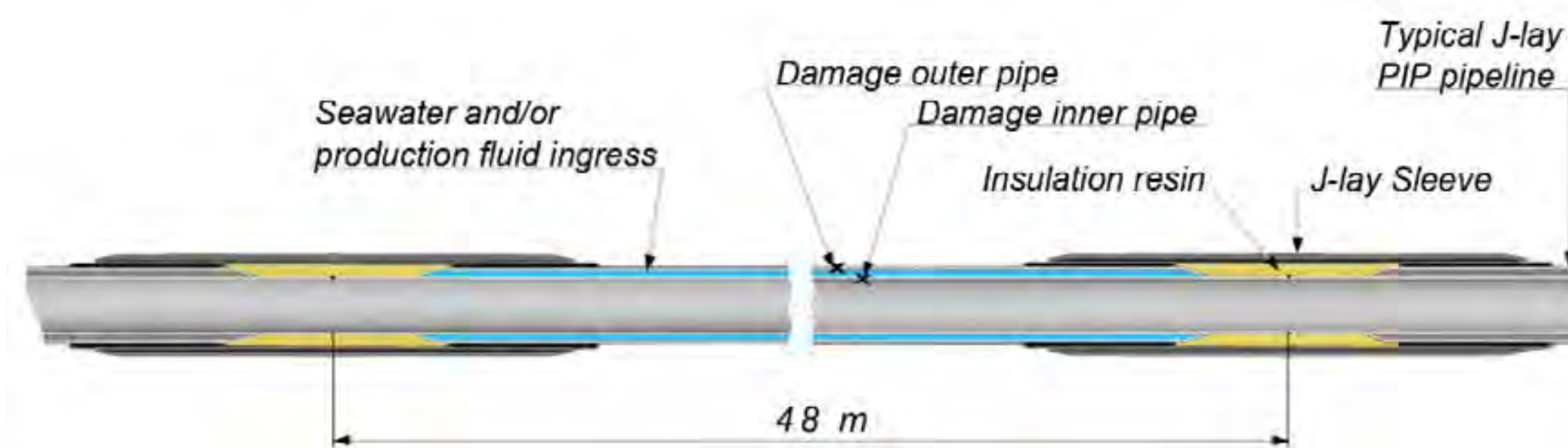
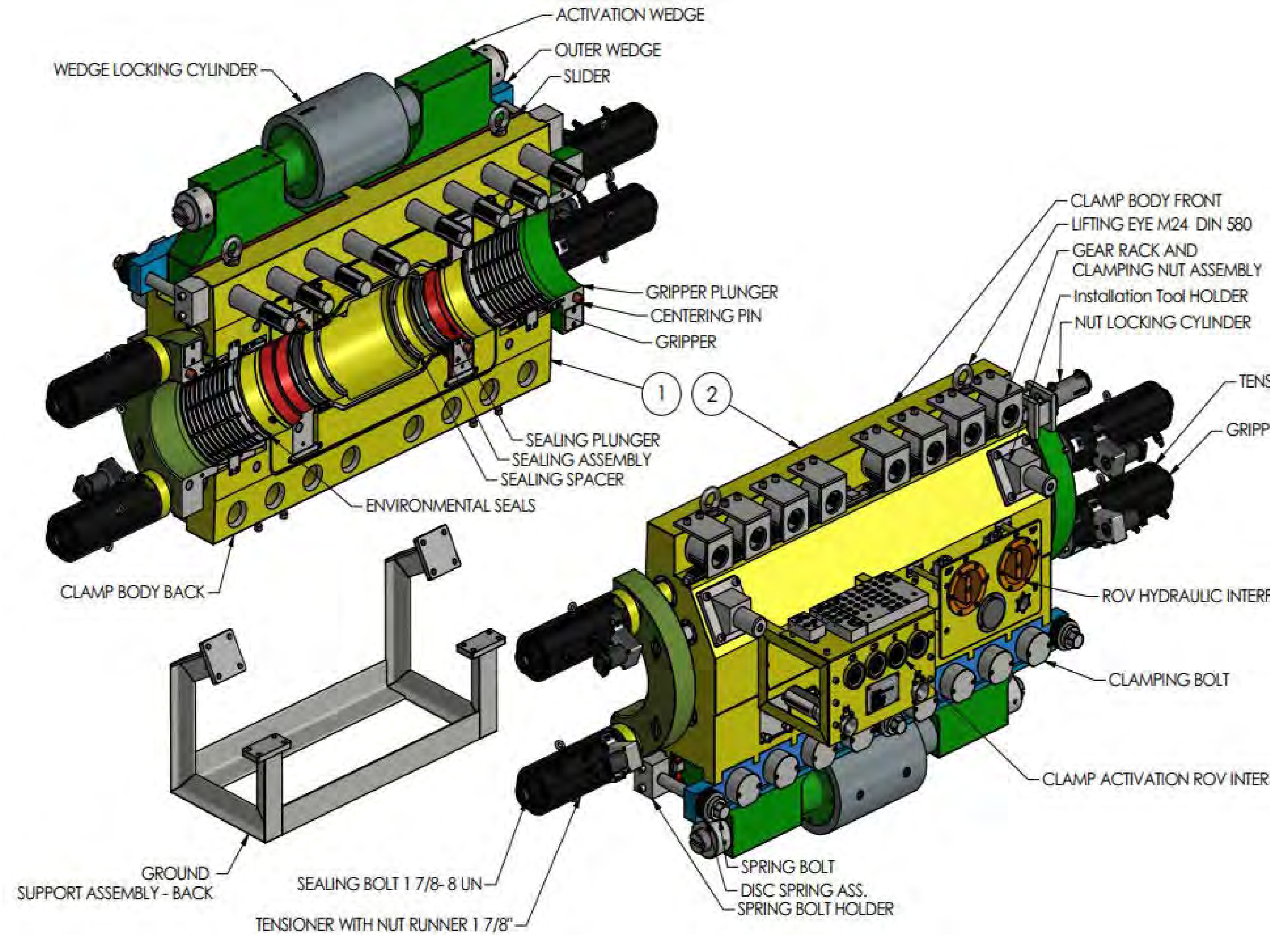
DEEPWATER API FLANGE



Please contact a member of the team to find out more information on this project



PIPE-IN-PIPE REPAIRS



Please contact a member of the team to find out more information on this project



CONDUCTOR REPAIR CLAMPS

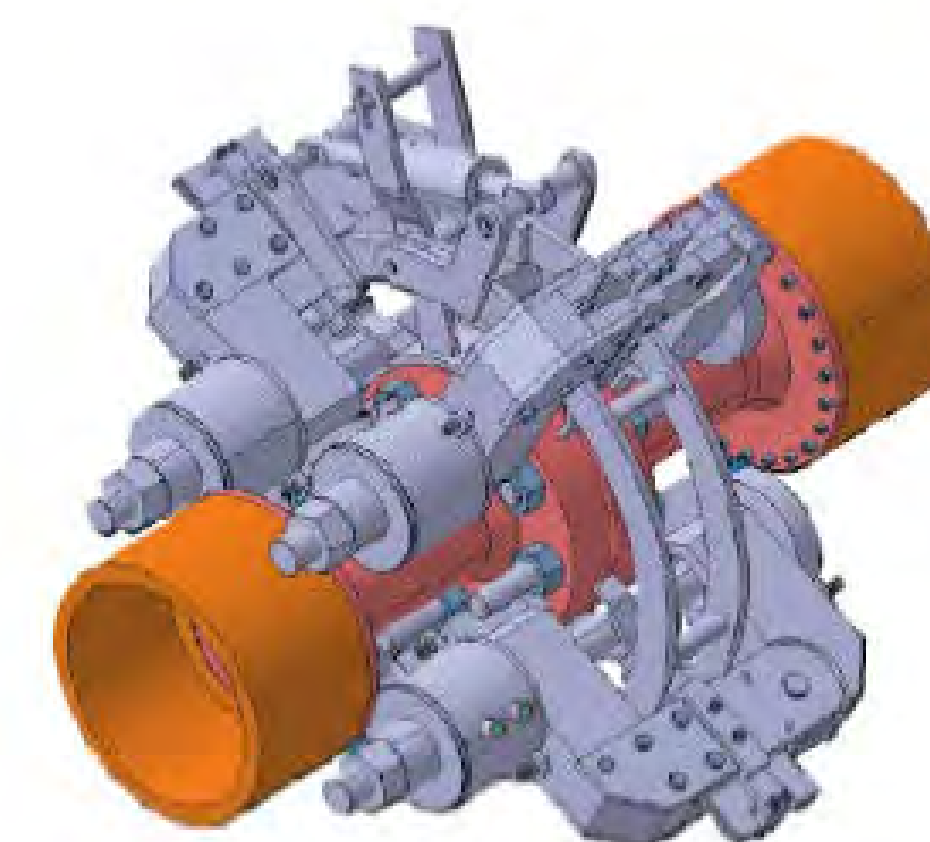
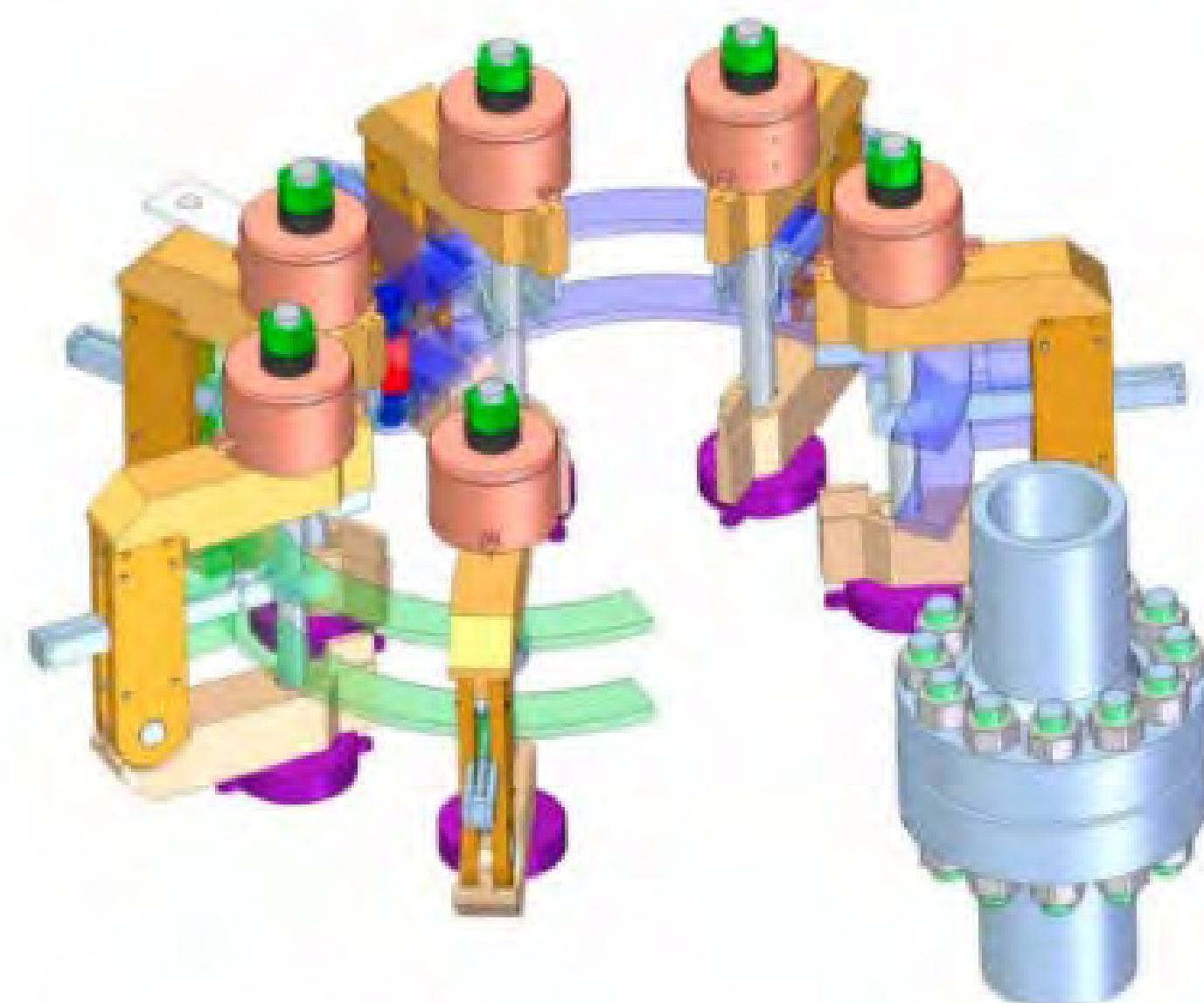
- Slim design for installation inside guide-funnel
- Structural & Leak Sealing
- Slim 4 piece design – Fits inside guide-funnel
- Activation from top and bottom
No work inside guide-funnel
- No longitudinal bolting
- Double sealing, annulus testing
- Excellent fatigue life
- Quick and Robust Installation
- Repairs Fully Severed Conductors



REMOTE FLANGE SAFETY CLAMPS

The Safety Clamp is used to secure flanges whose bolt integrity have been compromised (HISC affects)

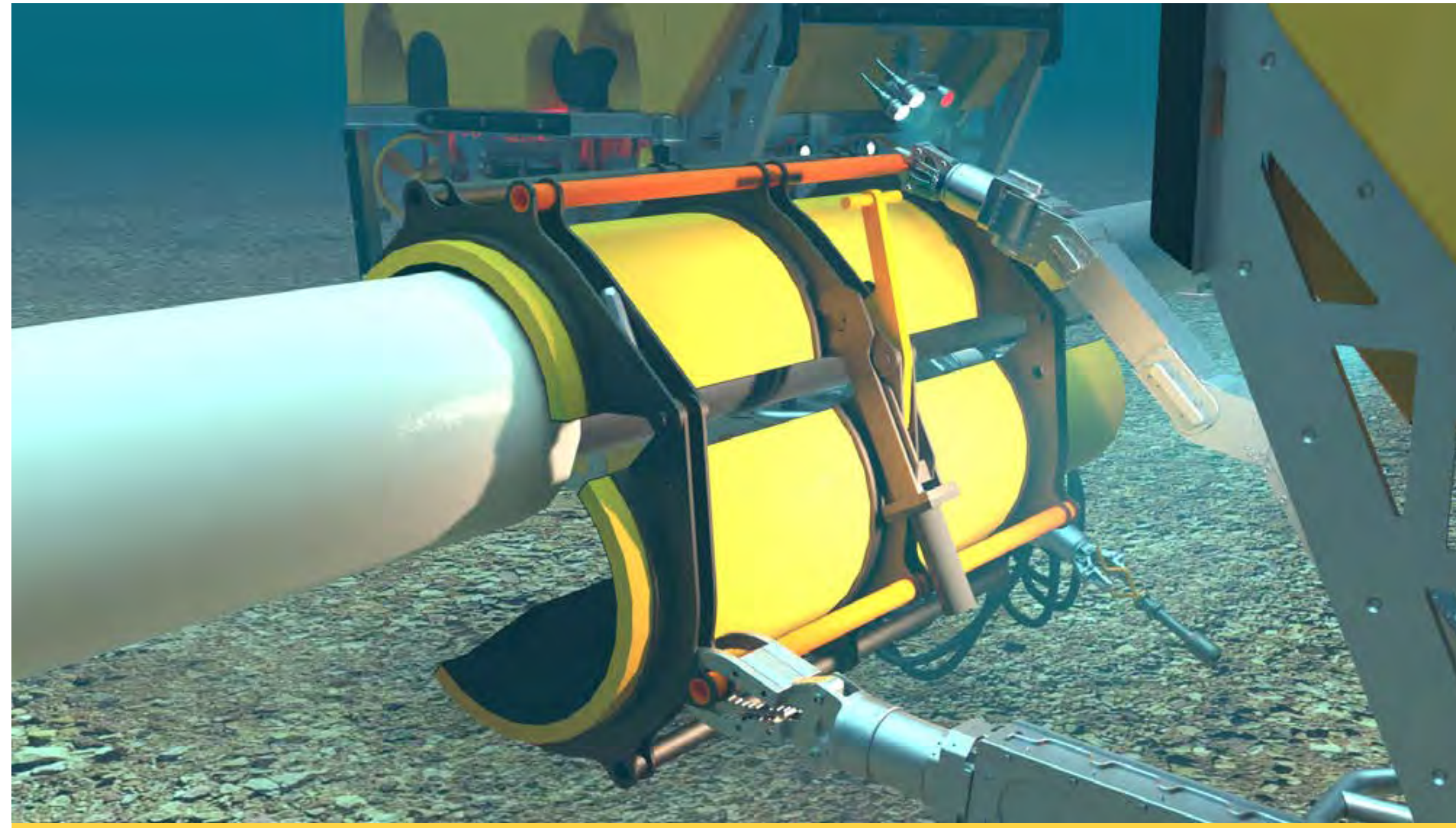
- Quick installation
- Approved for permanent works
- Eliminates requirement to change damaged bolts
- Hydraulically Operated
- Mechanically Locked



CONNECTOR
SUBSEA SOLUTIONS

MORGRIP
a Connector Subsea Solutions Product

REMOTE INSULATION & PROTECTION CLAMPS



Please contact a member of the team to find out more information on this project





FREESPAN CORRECTION

Remote and cost effective freespan correction using the Pipeline Lifting and Handling Frames in combination with concrete blocks and polyurethane support.

Track record of more than 1000 deepwater freespan corrections



RISER CLEANING & INSPECTION

Remote removal of marine growth from flexibles and rigid risers

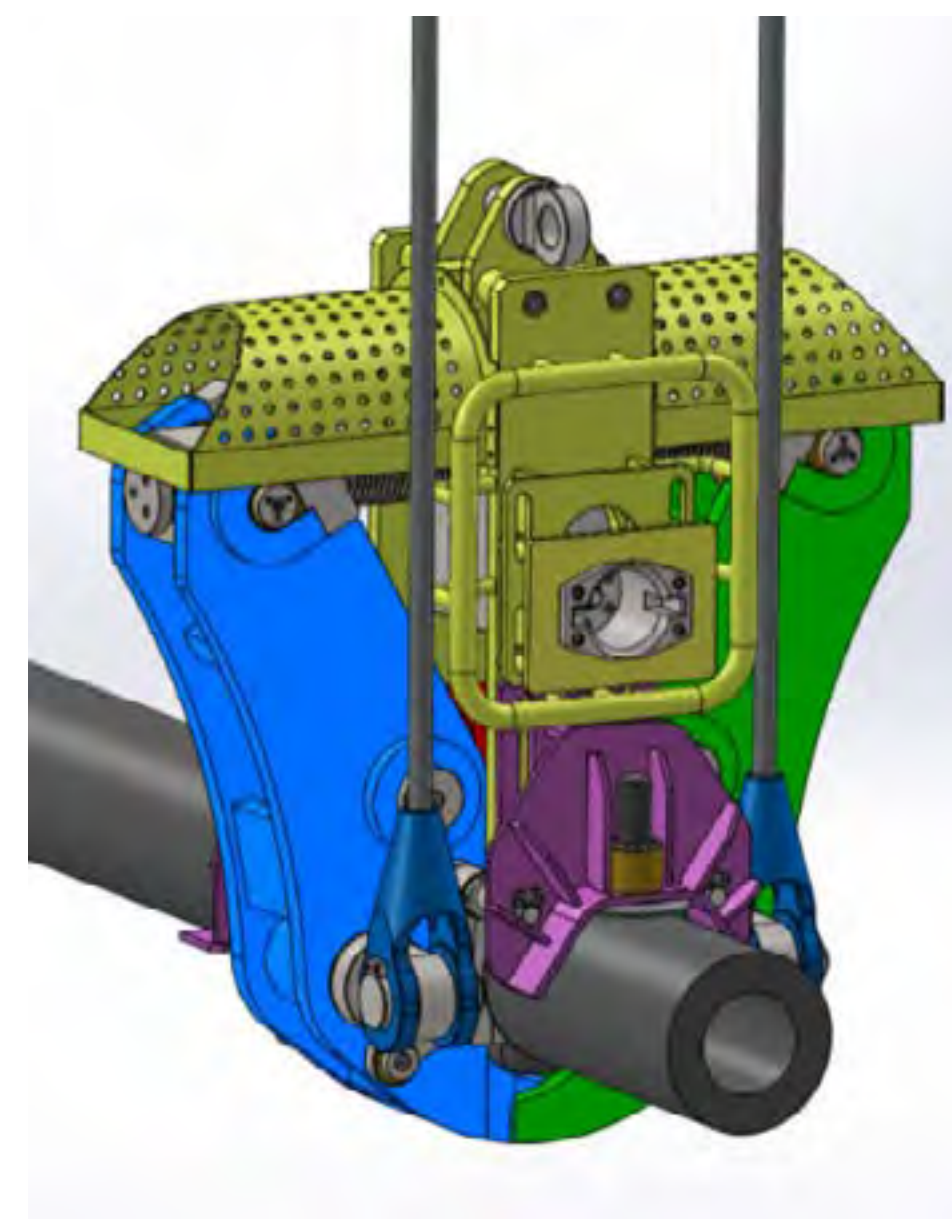
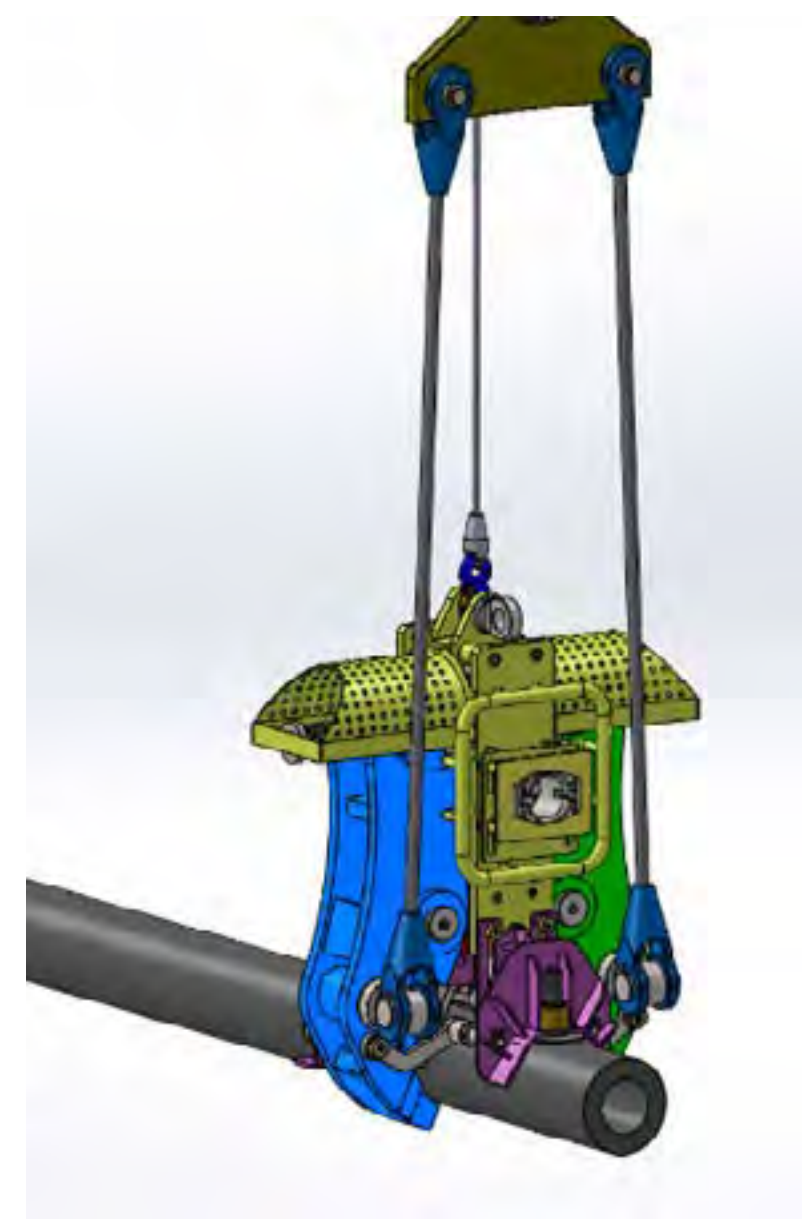
- Multiple cleaning technologies including cavitation and turbojet
- All wheel drive – climbs above surface
- 6 monitoring cameras with LED lights
- Full “ROV control system”
- Mobilisation in standard 20ft container with integrated
 - *Operation room*
 - *Workshop*
 - *ROV winch*
 - *Tool docking*
- Wide pipeline OD range of 100-380mm



PIPELINE RETRIEVAL TOOL

For Flexibles, Umbilicals and Pipelines

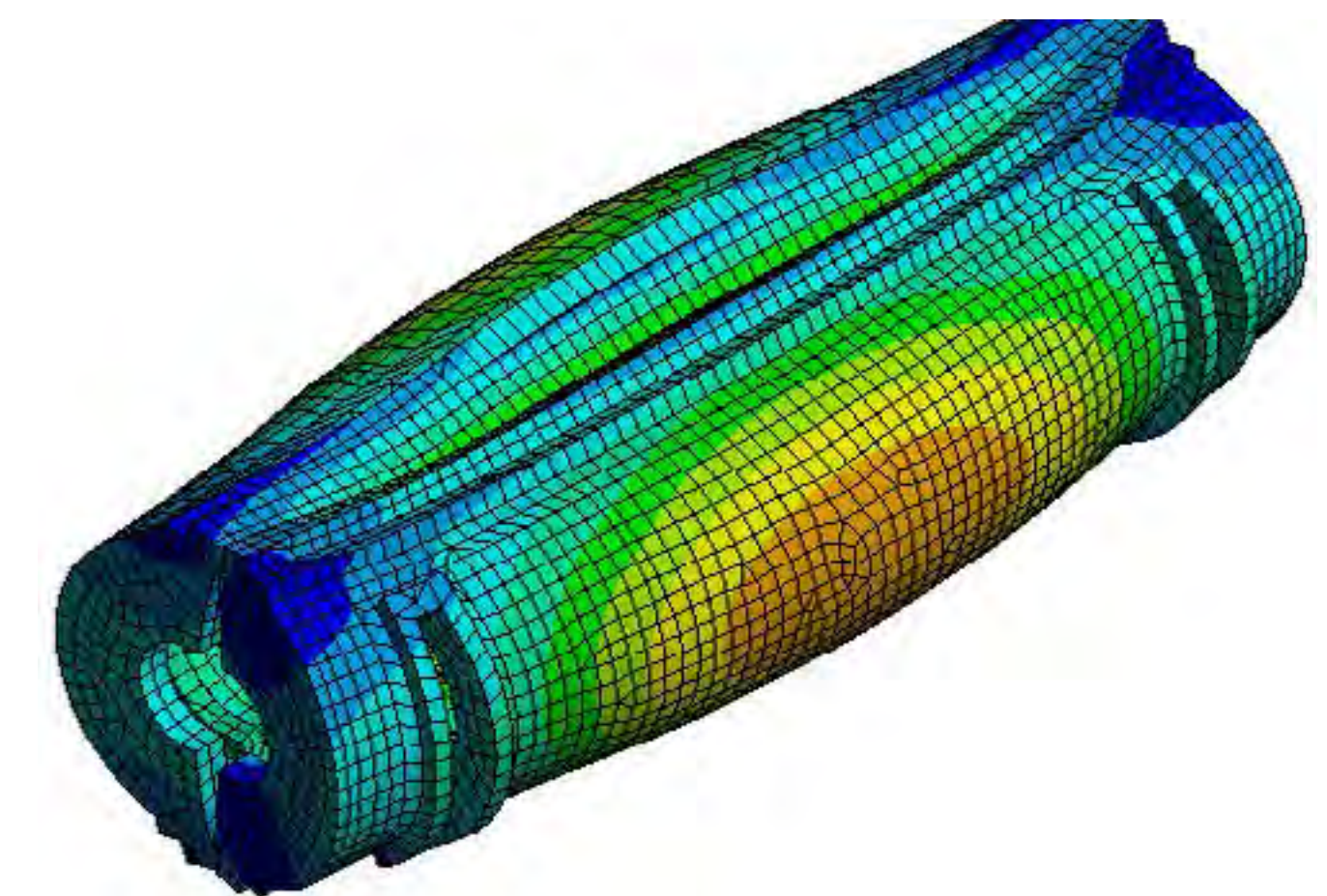
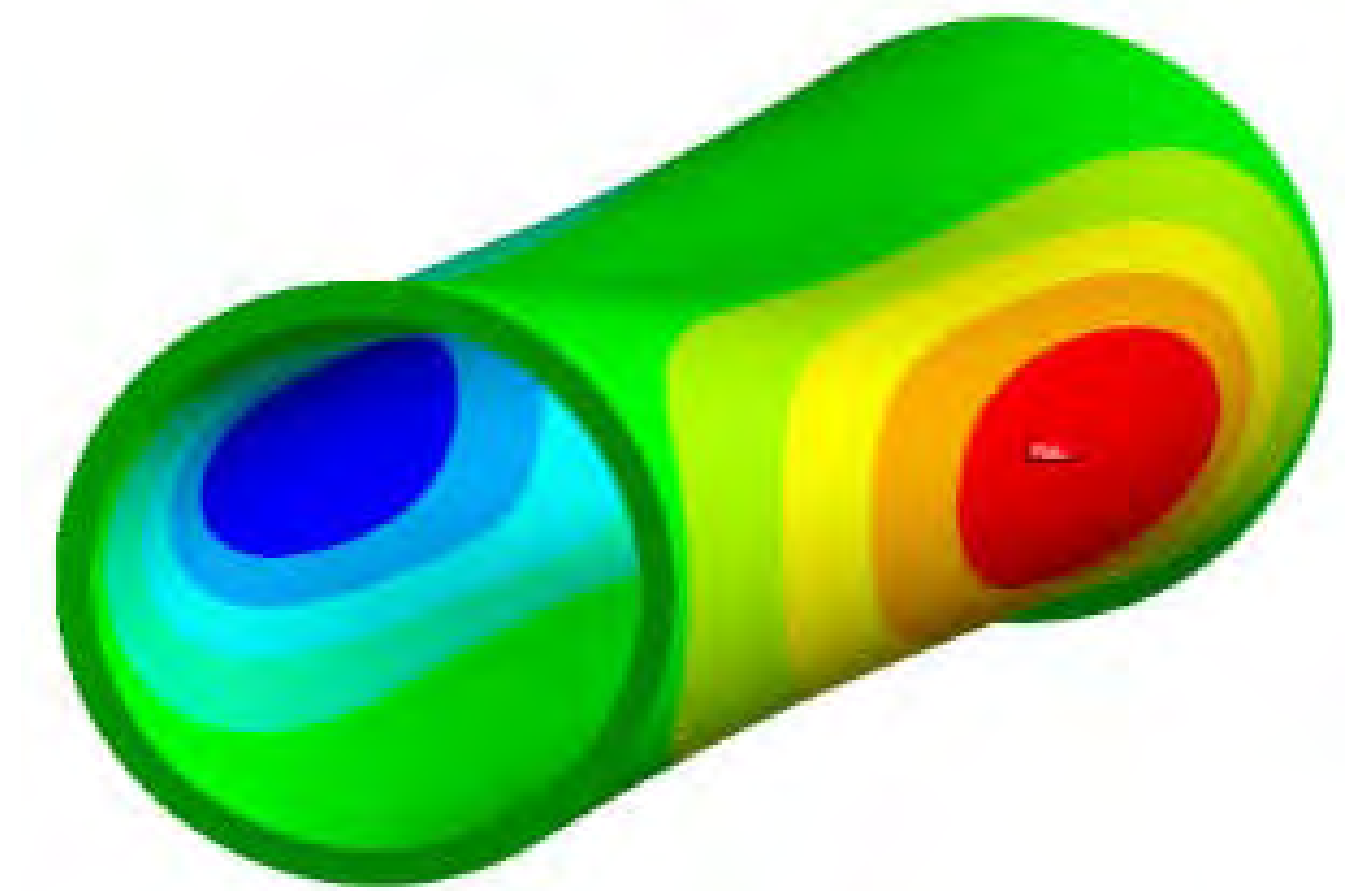
- Retrieves Pipelines & Flexible with OD range from 90mm-350mm
- Lightweight – 3t in air
- Operated with class 4 Torque Tool
- Lifts Pipelines and Flexibles; tested up to 200t



CONCEPT & FEED STUDIES

From supply to complex project requirements, CSS are familiar with the multiple challenges throughout the pipeline lifecycle, and specialise in providing solutions that demand:

- Competence within Integrity Management of Risers, Pipelines and Subsea Infrastructure
- Experience within ROV Tooling and Marine Operations
- Expertise within Advanced non-linear FEA including elastic perfectly plastic analysis in accordance with ASME VIII
- Life Extension Studies and Solutions





SUBSEA DISTRIBUTION PRODUCTS

We provide fully integrated solutions for subsea distribution systems

Optimised for high flow and high pressure, we have implemented a modular design philosophy that enables a higher level of component standardisation throughout our product line.

This approach reduces manufacturing cost and accelerates production while enabling increased flexibility and competitiveness in our delivery stream.



Hydraulic & Chemical Couplers



MQC ROV Stab Plates & Flying Lead Bundles



Heavy Duty (HD) ROV Connectors



Medium Duty (MD) ROV Connectors



Small-Bore Ball Valves

HYDRAULIC & CHEMICAL COUPLERS

HYDRAULIC & CHEMICAL COUPLERS

MQC ROV STAB PLATES & FLYING LEAD BUNDLES

SINGLE BORE ROV CONNECTORS

SMALL-BORE BALL VALVES



TECHNICAL FEATURES & OPERATIONAL DIFFERENTIATORS

- High internal flow and low separation forces
- Modular sealing cartridge for all relevant sealing elements and compounds
- Electron beam welded body reduces leak paths and allows high quality volume production

COMMERCIAL BENEFITS

- Easy to integrate with a wide variety of market MQC Stab Plate designs
- Male / female internally identical, enabling stocking capabilities, reducing cost and lead times
- All project parameters taken care of in standard sealing systems and cartridge

DESIGN BASIS

- Working Pressure: 5,000-15,000 PSI
- Operating Temperature: -18°C to +121°C
- Maximum Water Depth: 3,000 m
- Design Codes: API 6A (ISO 10423), API 17D (ISO 13628-4)
- Product Specification Level: PSL 3 / PSL 3G



MQC ROV STAB PLATES & FLYING LEAD BUNDLES

HYDRAULIC & CHEMICAL COUPLERS

MQC ROV STAB PLATES & FLYING LEAD BUNDLES

SINGLE BORE ROV CONNECTORS

SMALL-BORE BALL VALVES



TECHNICAL FEATURES & OPERATIONAL DIFFERENTIATORS

- Compact locking mechanism simplifies tubing routing
- Simple secondary locking mechanism
- + / - 30 deg misalignment capacity

COMMERCIAL BENEFITS

- Reduced vessel time through easy, safe and reliable operation
- We offer turn-key flying leads which reduces risk and 3rd party integration cost
- Standardised components reduce cost and lead time

DESIGN BASIS

- Working Pressure: 5,000-15,000 PSI
- Operating Temperature: -18°C to +121°C
- Maximum Water Depth: 3,000 m
- Design Codes: API 6A (ISO 10423), API 17D (ISO 13628-4)
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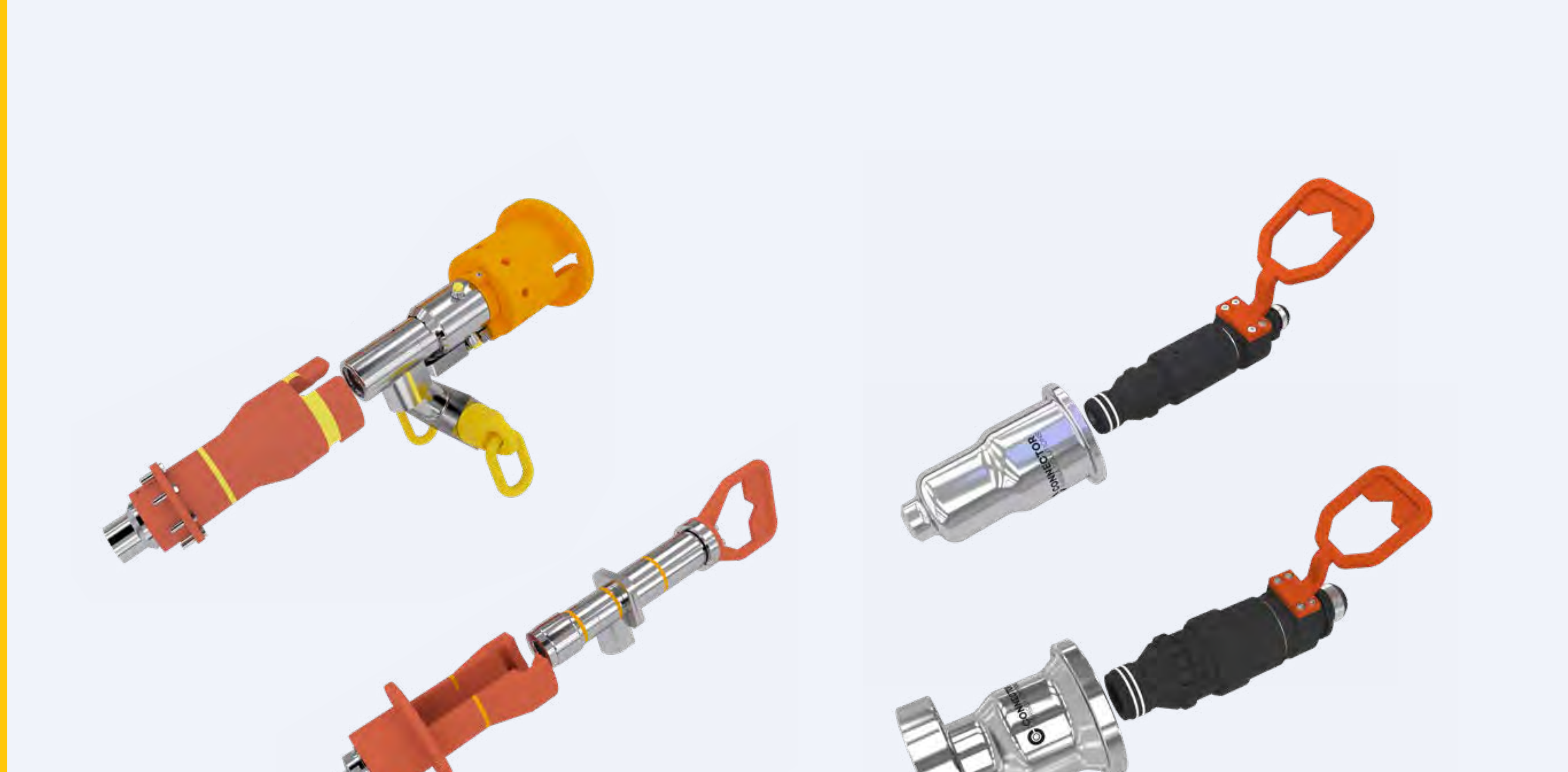
SINGLE BORE ROV CONNECTORS

HYDRAULIC & CHEMICAL COUPLERS

MQC ROV STAB PLATES & FLYING LEAD BUNDLES

SINGLE BORE ROV CONNECTORS

SMALL-BORE BALL VALVES



TECHNICAL FEATURES & OPERATIONAL DIFFERENTIATORS

- High internal flow due to full bore sizes
- Modular design for interchangeability of size (MD) and lifting arrangements (HD)
- Compact connectors for easy deck handling and hook-up

COMMERCIAL BENEFITS

- Low component count and machining enables significant cost savings
- Increased operational reliability compared to competition
- Inboard isolation valve can be integrated to deliver a cost and space optimised solution

DESIGN BASIS

- Working Pressure: 5,000-15,000 PSI
- Bore Sizes:
HD: 1.5-3 in
MD: ¼-1 in
Soft Seal: 1-3 in
- Operating Temperature: -18°C to +121°C
- Maximum Water Depth: 3,000 m
- Design Codes: API 6A (ISO 10423), API 17D (ISO 13628-4)
- Product Specification Level: PSL 3 / PSL 3G



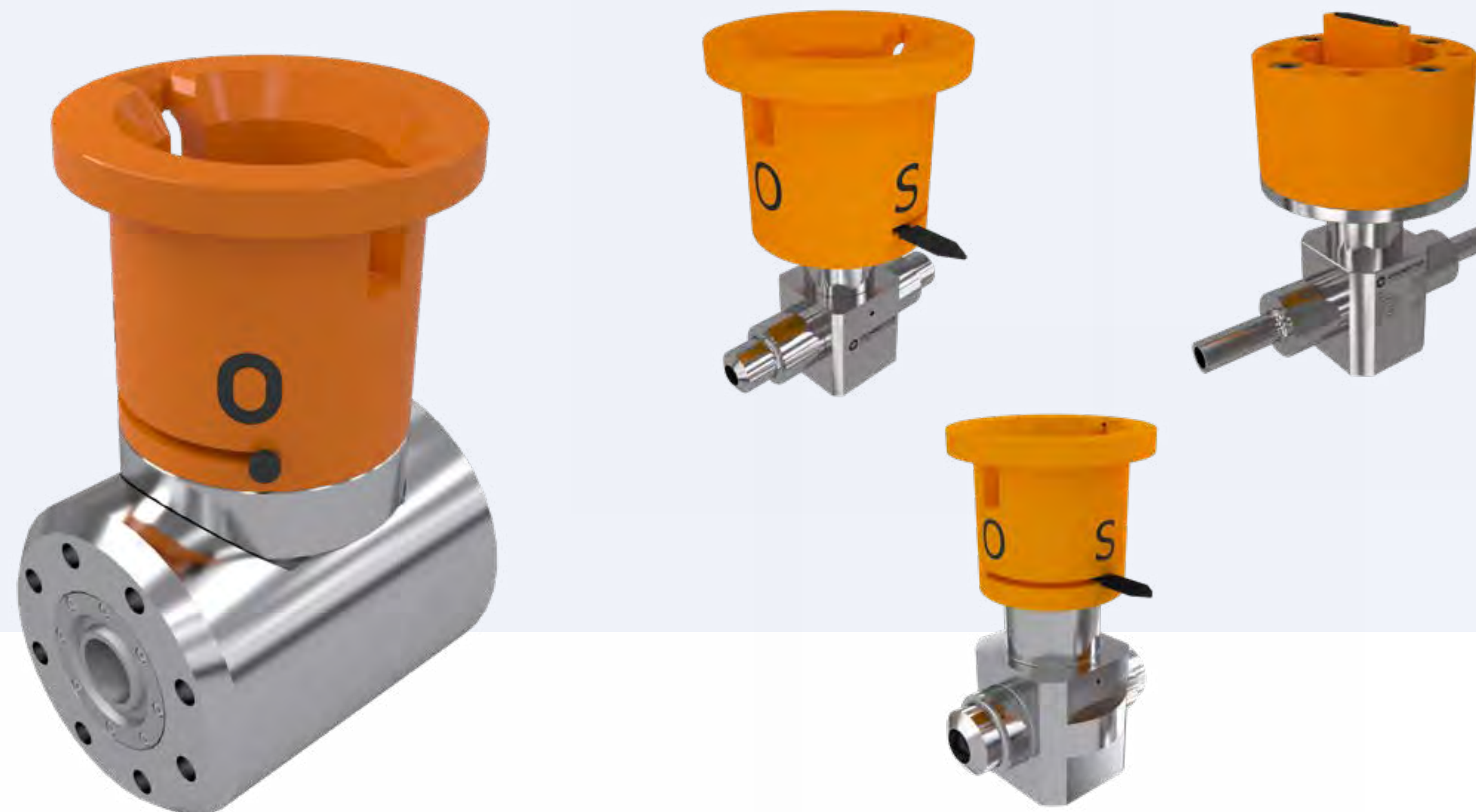
SMALL-BORE BALL VALVES

HYDRAULIC & CHEMICAL COUPLERS

MQC ROV STAB PLATES & FLYING LEAD BUNDLES

SINGLE BORE ROV CONNECTORS

SMALL-BORE BALL VALVES



TECHNICAL FEATURES & OPERATIONAL DIFFERENTIATORS

- Entire portfolio qualified to highest of industry standards and requirements
- Both MTM and soft seal available for ½ in, 1 in and 2 in, for various pressure classes
- Electron beam welded body for high volume production and quality control

COMMERCIAL BENEFITS

- Interchangeable ball and seats for MTM and soft seat valves
- Reduced material use and machining time due to compact design
- Reduced size and standardisation of components gives market leading prices

DESIGN BASIS

- Working Pressure: 5,000-15,000 PSI
- Operating Temperature: -29°C to +145°C
- Maximum Water Depth: 3,030 m
- Design Codes: API 6A (ISO 10423), API 17D (ISO 13628-4) TR 1234
- Product Specification Level: PSL 3 / PSL 3G
- Qualification Level: API 6A (ISO 10423) / API 17D (ISO 13628-4)





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