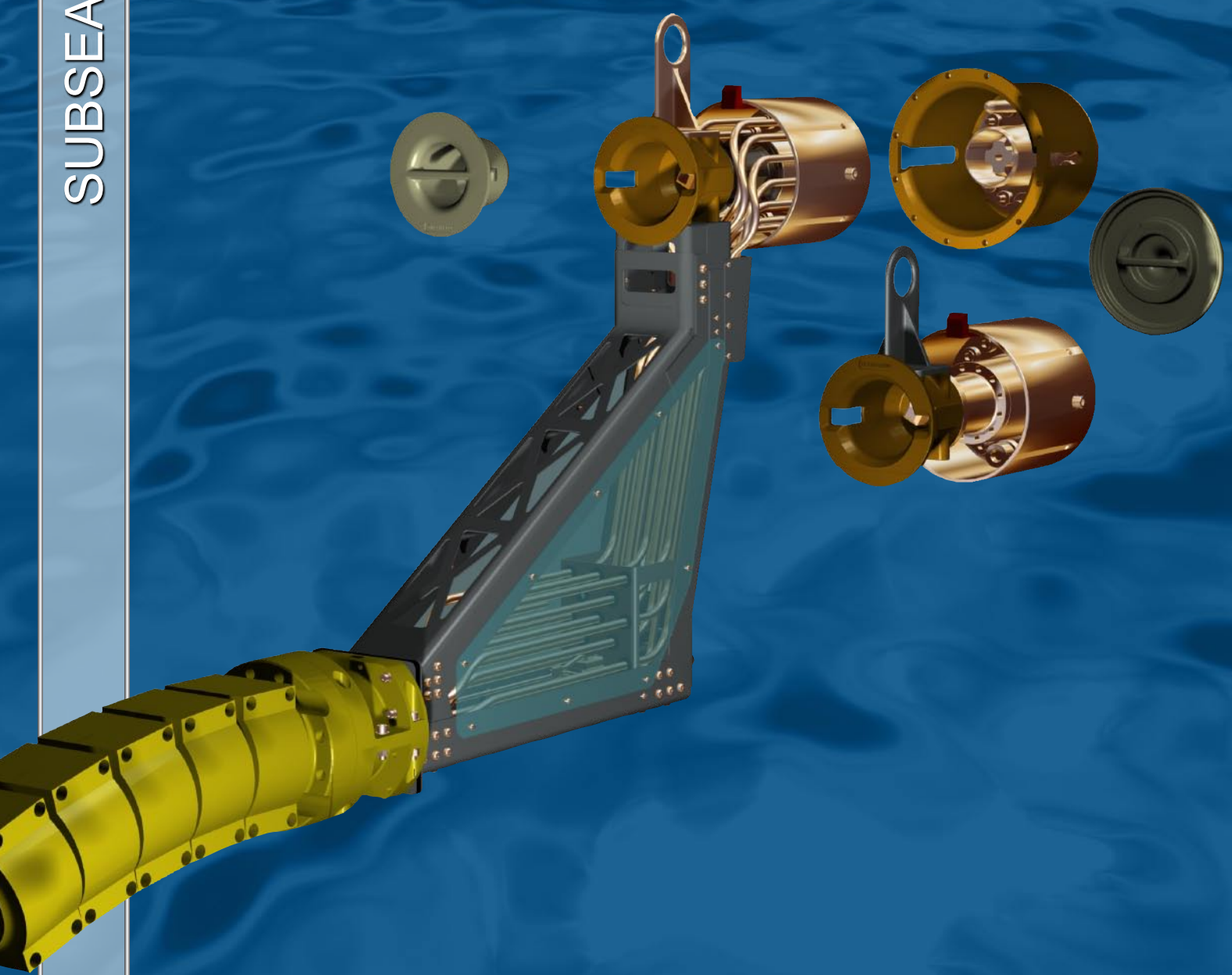


Oceaneering produces reliable and modular Umbilical Connection Systems. The company's M-Series junction plate includes patented technology. For rapid delivery of the M-Series System, available inventory of modular components can be finished to specification for any flying lead configuration.

Features

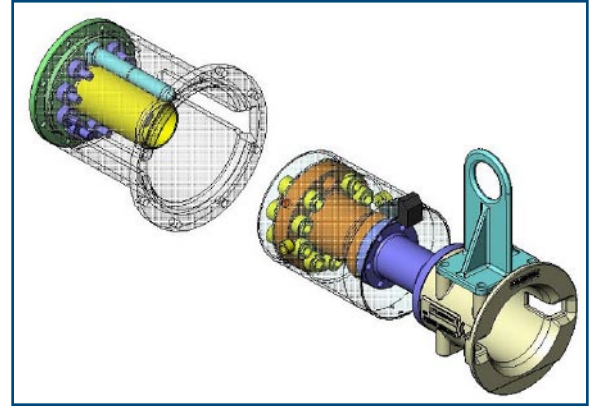
- ROV-friendly with a Standard API 17D/ISO 13628-8 ROV Torque Tool installation interface
- Non-screw thread Toggle Latch interconnects J-Plate, locking in a single series of actions
- Suitable for thermoplastic hose or steel tube umbilicals
- Modular configurations in standard sizes for a wide range of applications
- J-Plates mate and de-mate under full system pressure with a full or eccentric coupler configuration



Mini Series J-Plate

Designed for Electro/Hydraulic tree connections, PLET/PLEM and other small coupler count configurations

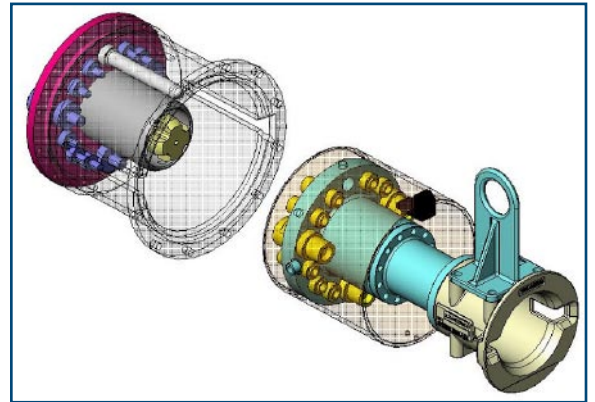
- Maximum 9 functions using 1/2 in National Couplers®
- API 17D Class 3 Torque Tool Interface
- J-Plates mate and de-mate at full system pressure
- Qualified using high side and axial loads, applied to simulate stiffness of attached Hydraulic Flying Lead



M1 Series J-Plate

Designed for Direct Hydraulic XT connections, IWOCs and other mid-coupler count configurations

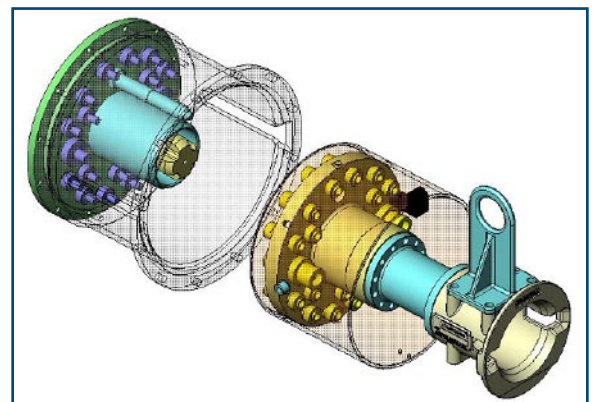
- Maximum 14 functions using 1/2 in National Couplers®
- Other configurations of 1/2 in and 1 in couplers available
- API 17D Class 4 Torque Tool Interface
- J-Plates mate and de-mate at full system pressure
- Qualified using high side and axial loads applied to simulate stiffness of attached Hydraulic Flying Lead



M2 Series J-Plate

Designed for Subsea Field Development UTA connections and Infield Distribution Umbilical connections

- Maximum 27 functions using 1/2 in National Couplers®
- Other configurations of 1/2 in & 1 in couplers available
- Electrical connections can be incorporated into design
- API 17D Class 4 Torque Tool Interface
- J-Plates mate and de-mate at full system pressure
- Qualified using high side and axial loads applied to simulate stiffness of attached Hydraulic Flying Lead



Design Considerations

Conditions

- Maximum Design Pressure >15,000 psi
- Test Pressure 22,500 psi
- Maximum Water Depth >10,000 ft
- Design Life 20 years
- Compatible with Electrical Flying Leads

Fluid Cleanliness

- Hydraulic Lines AS 4059 class 6
- Chemical Lines AS 4059 class 6

Standards

- ISO 13682-5
- ISO 13682-6
- ISO 13682-8
- ISO 13682-9
- API 17D
- API 17F
- API 17H

Fluid Compatibility

National Couplers® available in metal or elastometric seals for a fluid range including:

- Hydraulic Control Fluid Water Based, Glycol Mix
- Injected Chemicals Ethanol, Scale Inhibitor, Demulsifier, Corrosion Inhibitor
- Other Fluids Completion Fluids, Process Fluids

Installation / Interface

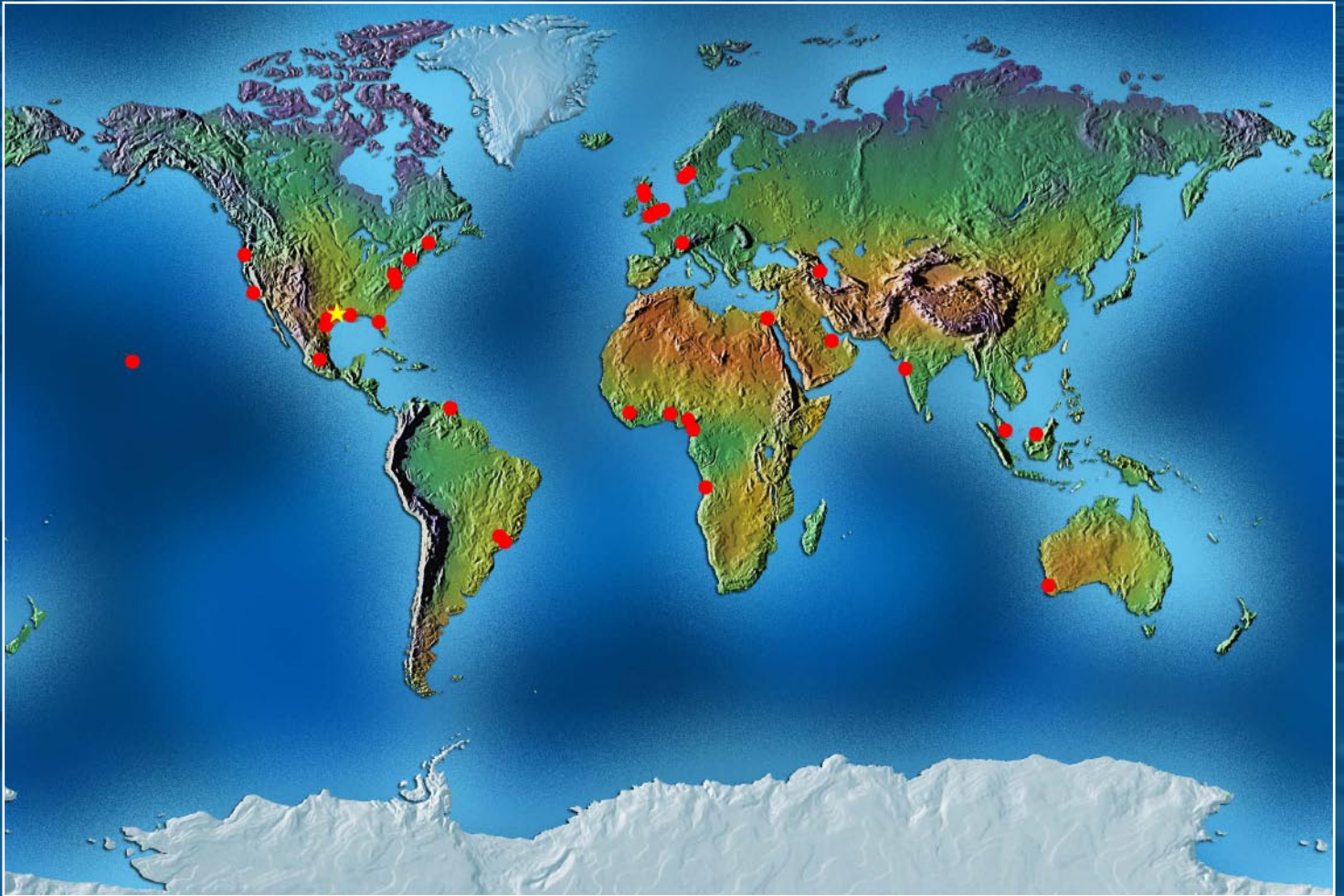
- Patented Toggle Latch provides primary and secondary mating and de-mating
- Standard API 17D Rotary Torque Tool Interface
- Gross, fine, clock and standoff alignments prevent damage to plates and couplers
- Robust design allows ROV “Fly to Place” installation
- National Couplers® interface to subsea structure tubing via weld prep steel tube stubs

Fixed Junction Plate (Fixed Plate, Inboard Plate)

- Fixed J-Plate is rigidly attached to the subsea structure
- Heavy duty constructed carbon steel housing with corrosion and chip resistant coating (Xylan® or other)
- Corrosion resistant alloy internal components
- All couplers are mounted internal to the housing for damage prevention

Removable Junction Plate (Free Plate, Outboard Plate)

- Standardized interface terminates the Removable J-Plate to the flying lead termination head
- Completely constructed of corrosion resistant alloy internal components
- Available with lightweight Thermoplastic, Steel Tube & Direct Umbilical Terminations



United States

Huntsville, Alabama
 San Diego, California
 Groton, Connecticut
 Orlando, Florida
 Panama City, Florida
 Pearl Harbor, Hawaii
 Bayou Vista, Louisiana
 Houma, Louisiana
 Lafayette, Louisiana
 Morgan City, Louisiana
 New Orleans, Louisiana
 Hanover, Maryland
 Portsmouth, New Hampshire
 Middletown, Rhode Island
 Clear Lake, Texas
 Corpus Christi, Texas
 Friendswood, Texas
 Houston, Texas ★
 Chesapeake, Virginia
 Silverdale, Washington

International

Cabinda, Angola
 Lobito, Angola
 Luanda, Angola
 Baku, Azerbaijan
 Perth, Western Australia
 Macaé, Brazil
 Niteroi - RJ, Brazil
 St. John's, Newfoundland, Canada
 Halifax, Nova Scotia, Canada
 Cairo, Egypt
 Gloucester, England
 Immingham, England
 London, England
 Stockton, England
 Thurrock, England
 Whitley Bridge, England
 Malabo, Equatorial Guinea
 Mumbai, India
 Kuala Lumpur, Malaysia
 Miri, Sarawak, Malaysia

Mexico D.F., Mexico
 Cd. del Carmen, Mexico
 Eket, Nigeria
 Ikeja, Lagos, Nigeria
 Port Harcourt, Nigeria
 Warri, Nigeria
 Nodeland, Norway
 Stavanger, Norway
 Johannesburg, Republic of South Africa
 Aberdeen, Scotland
 Rosyth, Scotland
 Jurong, Singapore
 Zug, Switzerland
 Abu Dhabi, U.A.E.
 Dubai, U.A.E.
 Swansea, Wales

★ Denotes Corporate Office



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