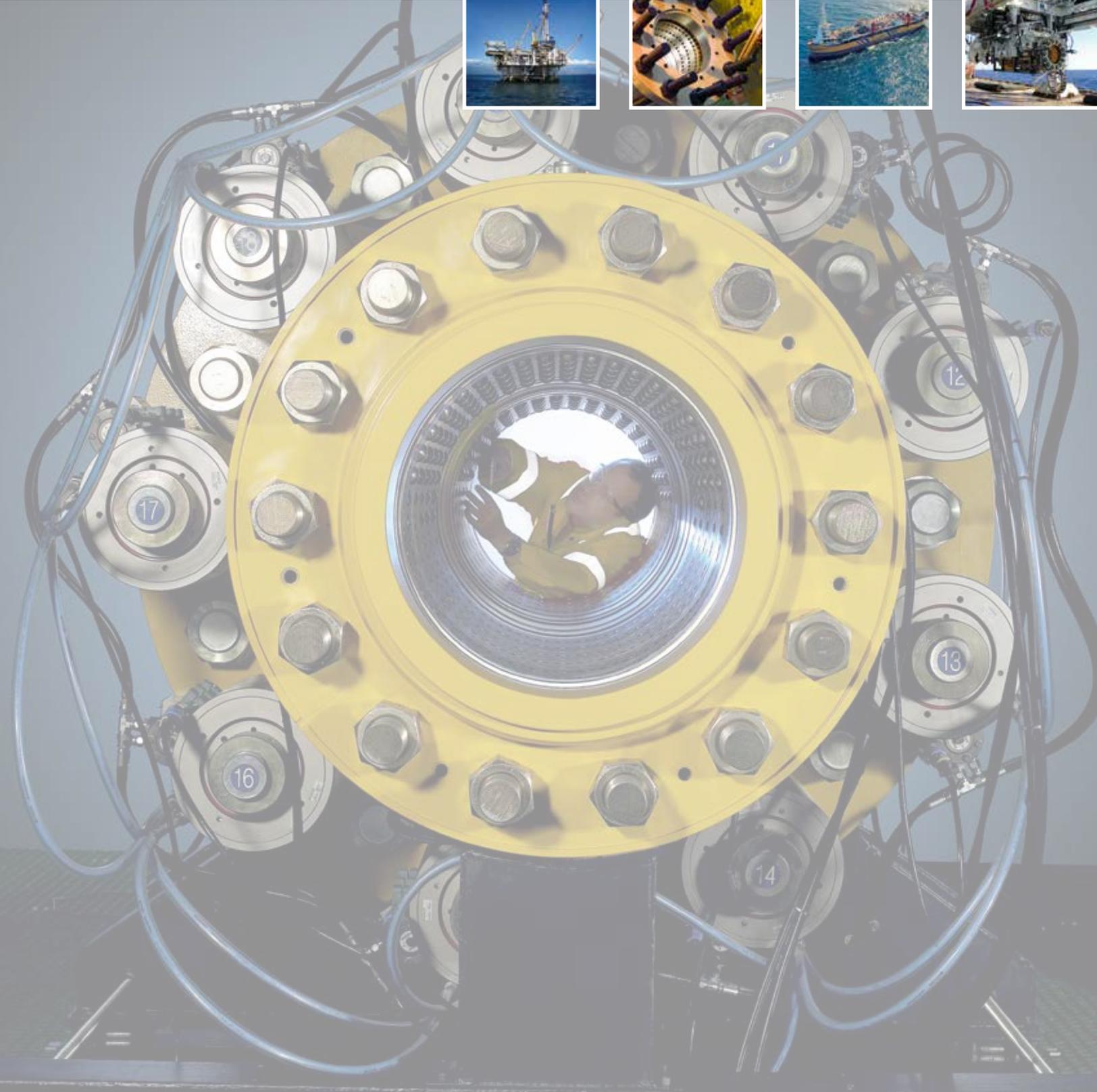


**hydratight**

MORGRIP®  
Mechanical Connectors



# Because ensuring a leak-free solution is critical. It has to be Hydratight.

For more than 100 years, Hydratight has provided world-class bolted joint solutions, assessing and managing joints to ensure leak-free start-ups. Today, we continue to set international standards in joint integrity—but we're so much more than just a bolting and on-site machining company.

Because even the tiniest leak can be costly and time consuming to repair, we manage every joint on a project for leak-free start-ups and production, which in turn removes the threat of environmental impact caused by unsafe joints. Safety continues to be the most important aspect of our business. We are a global organization making a real difference to the industries and communities we work in, committed to improving safety, operational efficiency and uptime.

Because you require the support of an innovative partner committed to your success, we not only offer unrivalled service on a global scale, including customer training and software development; but also design and manufacture quality tools and equipment for bolted joint solutions to the highest standards. Our certified teams are dedicated to working closely with you, assessing and managing every joint on your project to prevent leaks from ever occurring, year in, year out.

Because you value safety and reliability, we work to ISO 9001, ISO 14001 and OHSAS 18001 standards in everything we produce, from manufacturing torque and tension bolting equipment to mechanical connectors, from on-site service to creating custom solutions in line with client specifications.

It means that whenever you need a complete joint integrity solution, whichever industry sector you're in, you can rely on us to get it 100% right first time, every time. **This is why it has to be Hydratight.**



## Engineering Driven Safety Focused Solutions



# MORGRIP® Mechanical Connectors

MORGRIP® Connectors are weldless mechanical connectors which provide a high integrity connection for all types of metal pipework, onshore and offshore, topside and subsea. They are designed to be used as a fire-safe weldless replacement for a permanent pipeline repair, blanking redundant lines or for tie-ins.

Since the late 1980s MORGRIP® Mechanical Connectors have provided proven leak-free service history for permanent usage, and can be used for all sizes and pressure ratings of carbon steel, stainless steel, duplex and super duplex pipes, in critical and non-critical service. They have a 100% leak-free in-service record.

## Connector Configurations

### Flange Adaptor

The Flange Adaptor terminates a bare-pipe with an ASME/ANSI Class flange forming a lightweight, compact and low-cost connection. This configuration is used in flange replacement, pipe re-routing/tie-in, capping pipe that may require later intervention, and spool repair; and applicable topside or subsea.

### Coupling

The Coupling joins one bare-end pipe direct to another. The Coupling provides a lightweight, compact and low cost option ideal for use in re-routing/tie-in, and spool repair applications; and can be used topside or subsea.

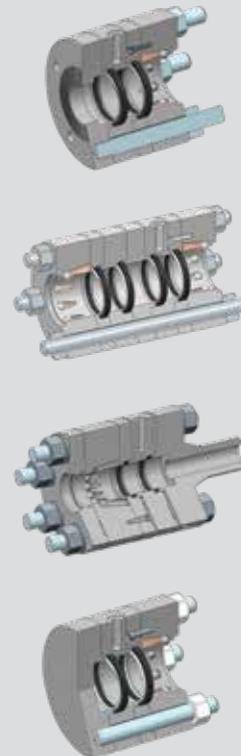
### Pipe Adaptor

The Pipe Adaptor is pre-welded to the bare-end pipe as part of the fabrication process. It is then used to connect to existing pipework without the need for hot work. The Pipe Adaptor provides a flexible engineered solution to overcome specific piping repair requirements and installation demands.

### End Cap

The End Cap provides a simple and effective way of capping-off redundant pipe as a permanent repair or on a temporary basis as part of a shutdown or larger repair procedure. The End Cap can also be used as part of a pressure test and can be provided with integrated porting for spool testing.

All formats suit specific applications, whether for use on carbon steel, stainless steel or duplex pipes. Other Connector configurations are available such as Tee Connectors and Reducer Connectors on an engineered project-by-project basis through our dedicated engineering team.



# Pipe-to-pipe Installation

Hydratight MORGRIP® Connectors are equal in strength and performance to that of a welded connection. They are suitable for any application where a weld would be a traditional solution, providing the same safety, strength and reliability.

## MORGRIP® Connector Installation

The following illustrates the steps to follow for a pipe-to-pipe installation.

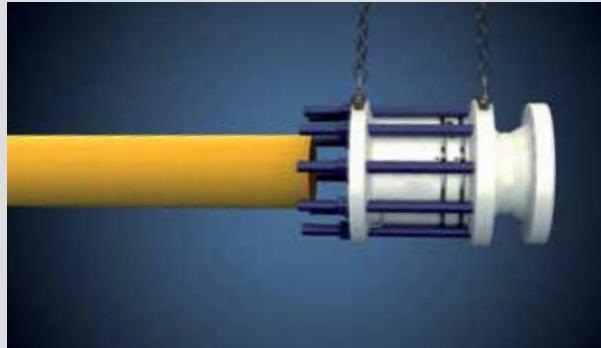
### Step 1

Leak located and isolated, damaged section of pipeline is cut and removed.



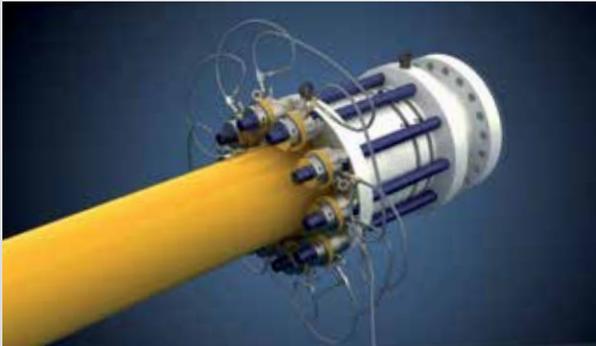
### Step 2

Connectors deployed and stabbed onto pipeline(s).



### Step 3

Connectors activated.



### Step 4

New spool piece positioned.



### Step 5

Spool piece connected to Mechanical Connectors.



Scan to view demo video.

# Construction

MORGRIP® Mechanical Connectors have gained an enviable track record having been used by the majority of major energy companies for both pipeline tie-ins and emergency repairs for thousands of critical topside and subsea applications.



Topside Flange Adaptor



Topside Flange Adaptor



Retrofit Riser Hang-off Clamp



Topside Flange Adaptor

Hydratight's range of MORGRIP Connectors offer versatile solutions to the problem of bare pipe connections. Their design is adapted to suit applications ranging from high temperature, high pressure hydrocarbon service lines fitted on the topside of offshore platforms, through to the supply of connectors capable of being remotely installed in over 3,280 ft (1,000 m) of water. They provide a connection that is equal in strength to a weld and has DNV and Lloyds Type approvals, stating that the Couplings may be used as a permanent or temporary substitute for welded connections.

# Capability

The continued development of MORGRIP® technology has enabled Hydratight to expand its product range to include Riser Hang-off Systems, Remote Bolting Systems and Repair Sleeve Clamps.



Subsea Flange Adaptor



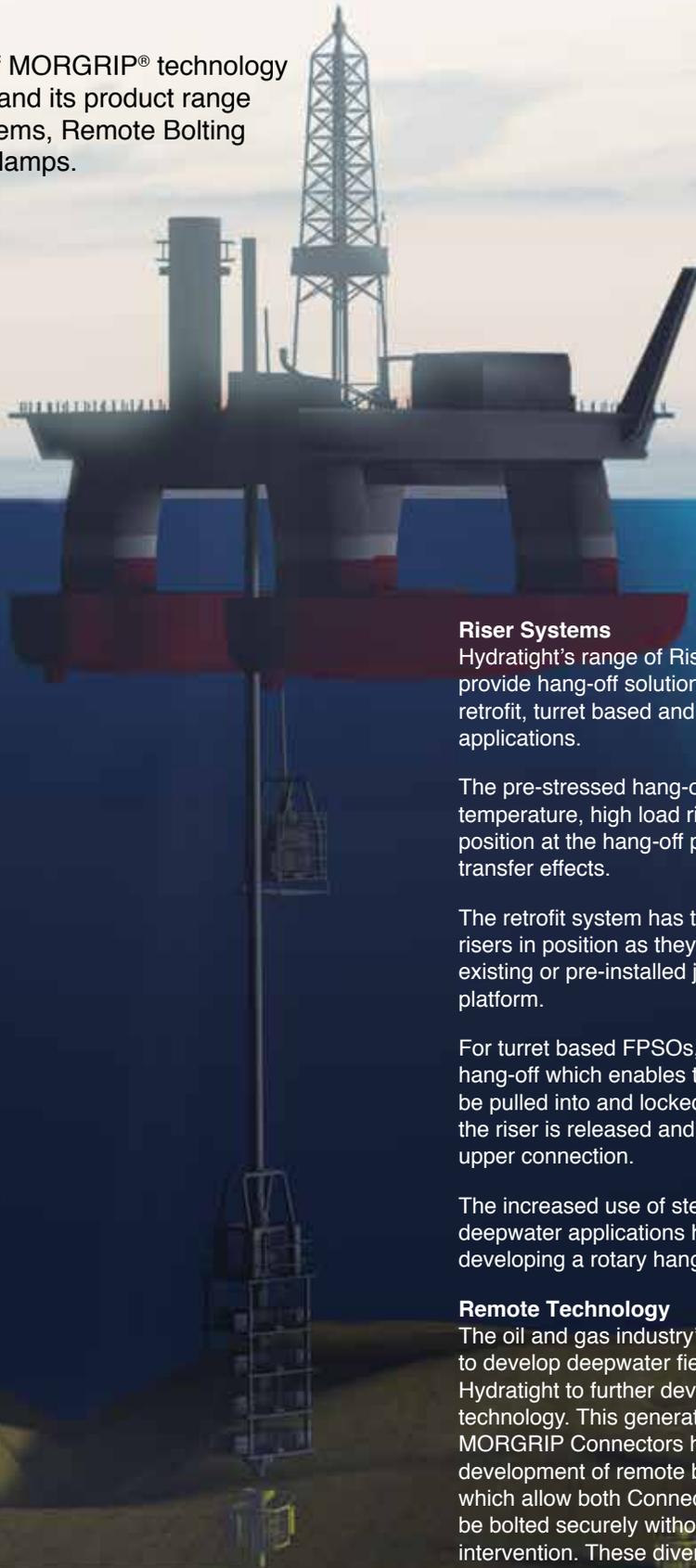
Steel Catenary Riser Clamp



Steel Catenary Riser Clamp



Subsea Coupling



## Riser Systems

Hydratight's range of Riser Hang-off Systems provide hang-off solutions for pre-stressed, retrofit, turret based and steel catenary applications.

The pre-stressed hang-off allows high temperature, high load risers to be locked in position at the hang-off point to minimize load transfer effects.

The retrofit system has the ability to lock rigid risers in position as they are pulled through existing or pre-installed j-tubes on a fixed platform.

For turret based FPSOs, Hydratight offers a hang-off which enables the flexible riser to be pulled into and locked in the turret before the riser is released and pulled through to its upper connection.

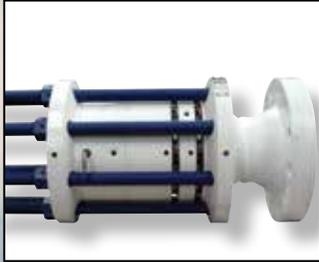
The increased use of steel catenary risers for deepwater applications has led to Hydratight developing a rotary hang-off system.

## Remote Technology

The oil and gas industry's requirement to develop deepwater fields has enabled Hydratight to further develop its remote technology. This generation of remote MORGRIP Connectors has led to the development of remote bolting systems, which allow both Connectors and Clamps to be bolted securely without the need for diver intervention. These diverless repairs have been performed on pipelines with a diameter of up to 30", however the technology has full approval for up to 44" diameter.

# Repair

Hydratight's innovative designs have produced a pipe connection which is equivalent in strength and sealing performance to that of a welded joint. This can be reliably achieved without hot work and far more safely, simply and quickly than a welded joint.



Subsea Flange Adaptor



Turret Based Riser Hang-off Clamp



Misalignment Flange



Riser Pull-in Head



Remove Connector Installation Frame



## Pipeline Repairs

Although Hydratight's MORGRIP® Connectors are used extensively on new construction projects, the connector was initially developed, and is still widely used, for pipeline repairs.

The versatility of the MORGRIP design enables it to be used in many different scenarios, whether making a bare pipe repair or inserting flanged spools.

As well as providing MORGRIP Connectors for permanent pipeline repairs, Hydratight has also supplied temporary repair clamps, capable of sealing minor pipeline leaks or restoring the structural integrity of damaged or corroded pipes. Hydratight is now the accepted and preferred repair system for many oil & gas operators worldwide. The industry's confidence in Hydratight's products and capabilities has led to the organization establishing an Emergency Pipeline Repair System (EPRS) Club covering oil and gas locations around the world.

If you'd like to discuss your application in more detail, or want more information about any of these products, please contact your local Hydratight representative today, email us at [solutions@hydratight.com](mailto:solutions@hydratight.com), or visit [hydratight.com](http://hydratight.com) for more information.

# hydratight®

Our global network means that you can rely on the right people, products, and services wherever you are in the world.

Email us at: [solutions@hydratight.com](mailto:solutions@hydratight.com)  
Or find your local representative at:  
[hydratight.com/contact](http://hydratight.com/contact)

Hydratight provides support through strategic service centers, and in additional locations worldwide through channel partners.

