

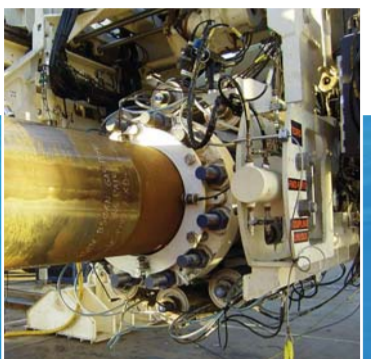
hydratight
Global Standards Local Delivery

MORGRIP[®]
MECHANICAL CONNECTORS

Who we are
One Company, Total Support, Complete Solutions

Hydratight is a dynamic innovator of engineering solutions to its customers' problems in the field of mechanical jointing and coupling and continues to set international standards in joint integrity for its customers on a global scale.

Our global network means you can rely on the right people, products and services wherever you are in the world.
Email us at: solutions@hydratight.com
Or find your local representative at: hydratight.com/contact



Morgrip is available in a variety of formats, including standard flange termination, and the unique pipe-to-pipe direct coupling connector. All formats suit specific applications, whether for use on carbon steel, stainless steel or duplex pipes.

Other standard products including swivel flanges are available.



Hydrocarbon
Hydratight is a world leader in providing joint integrity solutions to the oil & gas and petrochemical industries; offering products for sale or rent, as well as onsite services delivered through our extensive worldwide network of skilled technicians. Our services include:

- Torque and tension bolting equipment
- Portable machining equipment
- Product sales, rental and technical support
- Product service and training



Building upon the company's unique experience in bolt tensioning, torquing and on-site machining, Hydratight combines innovative management practices with a unique range of products and services to ensure minimum cost/minimum time solutions in the construction and maintenance of process plant and pipe work.

Power Generation
Hydratight's power generation division first developed products and services which are now commonplace within the industry including the hydraulic tensioning of bolts on gas and steam turbines and manway covers on nuclear steam generators.



General Engineering
Our general engineering division provides a comprehensive range of bolt and stud tightening and ultrasonic load monitoring products and services for all major capital plants including diesel engines, mining machinery, presses, pumps and steel mills.



Hydratight offers a comprehensive range of quality products and services worldwide, supported by strong, experienced engineering teams. Since developing the technology of hydraulic bolt tensioning in the early 1970's to solve the problem of leaking joints, Hydratight has continued to push back the technological frontiers with many new and innovative engineering products for bolting, joint integrity and pipe connection and repair systems.

One Company - Meets Standards
Totally committed to safety and quality, all Hydratight products and services are designed, manufactured and carried out within a management system in accordance with ISO 9001:2008 (Quality Management), ISO 14001:2004 (Environmental Management) and OHSAS 18001:2007 (Occupational Health and Safety).

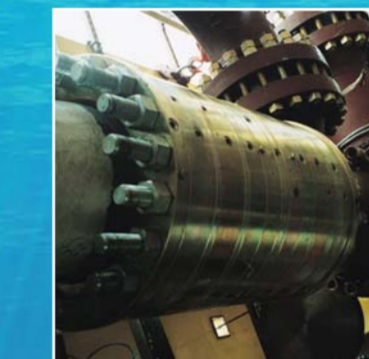
Our continuous emphasis on research and development enables us to continue to offer engineering solutions throughout the world.

Morgrip Weldless Mechanical Connectors
Morgrip is a range of mechanical pipe connectors which provide high integrity connections for all types of metal pipe work, on-shore, off-shore and subsea. Used to replace the need for the welding, they are based upon a unique and patented pipe gripping and sealing system which allows the couplings to withstand high internal pressure and load conditions.

The Morgrip product has over 20 years of proven leak-free service history for permanent usage, and can be used for all sizes up to 42" and pressure ratings of metal pipes, in critical and non-critical service.

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.

Morgrip has full-type approval of DNV and Lloyds Register and carries the API monogram.



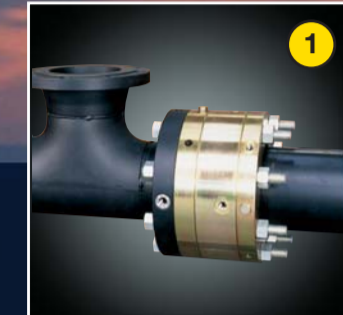
AN **Actuant** COMPANY

Material sourced from fully sustainable, managed forests using Elemental Chlorine Free fibre.

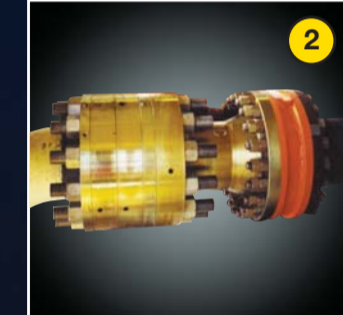
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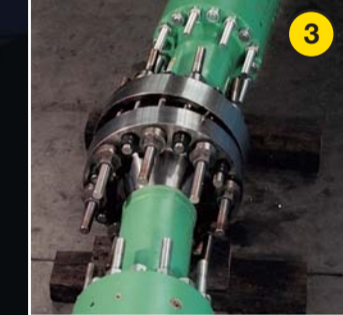
Construction



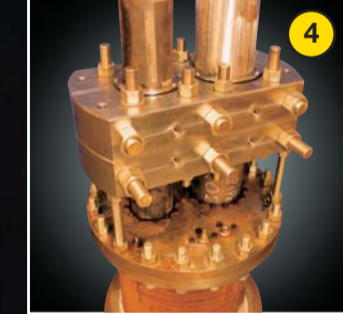
150 Series Flange Adapter



Topside Flange Adapter



Mis Alignment Flange (MAF) Connector Assembly



1 Tube Riser Hang Off



Morgrip Weldless Mechanical Connectors

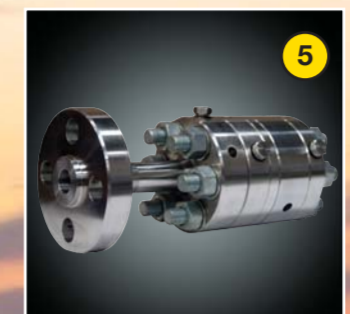
Morgrip has gained an enviable track record having been used by the majority of major energy companies for both pipeline tie-in's and emergency repairs for many thousands of critical topside and subsea applications.

The Morgrip range of connectors offers versatile solutions to the problem of bare pipe connection. Its 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 1,000 metres of water.

The system provides 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 the Morgrip technology has enabled Hydratight to expand its product range to include riser hang off systems, remote bolting systems and repair sleeve clamps.



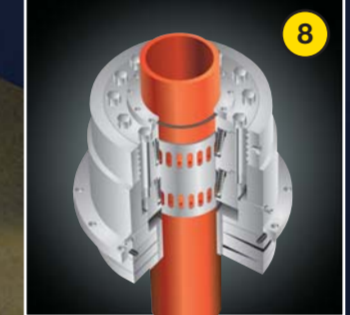
Stainless Steel Topside Connector



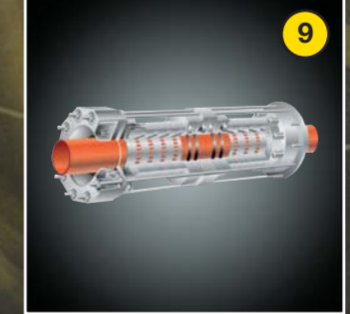
Flange Adapter & MAF



Mornut Riser Hang Off



Mornut Assembly



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 minimise 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.

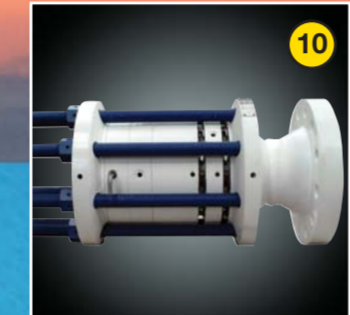
For turret based FPSOs, Hydratight offers a hang off which enables the flexible riser to be pulled into and locked in the turret before the flexible is released and pulled through to its upper connection.

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. Diverless pipeline repair connections have been performed up to 30" diameter, but the technology has approval for up to 42".

Repair



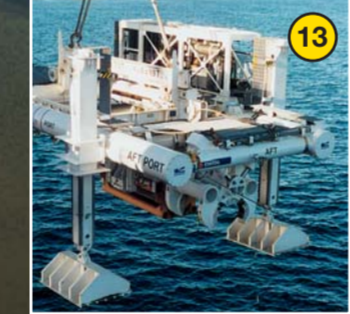
Morgrip Quick Flange



Riser Hang Off Connector



Riser Puller in System



Statool Connector Installation Flange (CIF)



Repairs

Although Morgrip is used extensively on new construction projects, the connector was initially developed for, and is still widely used for pipeline repairs.

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

As well as providing 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.

Morgrip is now the accepted and preferred repair system for many oil & gas operators world-wide. The industry's confidence in Hydratight's products and capability has led to the organisation establishing an Emergency Pipeline Repair Club initially for the North Sea, but now covering other key oil and gas locations around the world.

