

ROYAL IHC.COM

# ROYAL IHC FLOATING PRODUCTION UNITS EQUIPMENT



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**THE TECHNOLOGY  
INNOVATOR.**



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# INTRODUCTION



RISER PULL-IN SYSTEM

At Royal IHC, we design and supply fully integrated equipment packages for floating production units, such as semi-submersibles, SPAR, FPSO, TLP, FSO, FPU and FLNG. With a proven track record in the delivery of over 30 turnkey packages, we are expertly placed to offer you reliable equipment for worldwide applications.

## COST EFFECTIVE

We design and build complete integrated systems, based on our in-house knowledge of hydraulic systems, shipbuilding, engineering, handling equipment, and electric and control systems. This results in a single point of contact for the production of a complete mooring, riser pull-in and offloading system. We are recognised by global FPU operators as a reliable partner from the very beginning of a project up to the commissioning and operational phase.

## WORLDWIDE PRESENCE AND SERVICES

Your demand for locally-sourced systems is met by our worldwide presence, with manufacturing facilities in Singapore, Brazil, Europe and China – among others. IHC Services offers worldwide support with local presence at our service centres with IHC staff, enabling us to respond quickly to any service request, from repair and conversion to upgrades and training. The services we provide mean that you can increase the uptime and improve the performance of your equipment while reducing the total cost of ownership.

By selecting IHC, you will have direct access to our:

- local manufacturing capabilities
- proven track record
- one-stop shop approach
- tailor-made solutions
- global service network.

# MOORING SYSTEMS AND FAIRLEADS

Mooring systems are typically custom made solutions. IHC's mooring systems can be designed according to client specific requirements and oil field location.

IHC delivers complete on-board mooring systems on a turnkey basis, incorporating:

- underwater fairleads
- chain stoppers
- linear and rotary chain jacks
- chain-handling systems
- subsea tension tools.

## FAIRLEADS

The underwater fairlead is a self-contained, flagging style component that absorbs the high-tension top chain of the mooring line. It is positioned on the hull-side and shell-mounted. We design fairleads for chain and wire-rope applications, with – or without – an integrated chain stopper for all water depths. Special attention is paid to the design, and selection of the materials and components to eliminate corrosion, as well as minimise the effects of tension-to-tension and out-of-plane bending and fatigue.

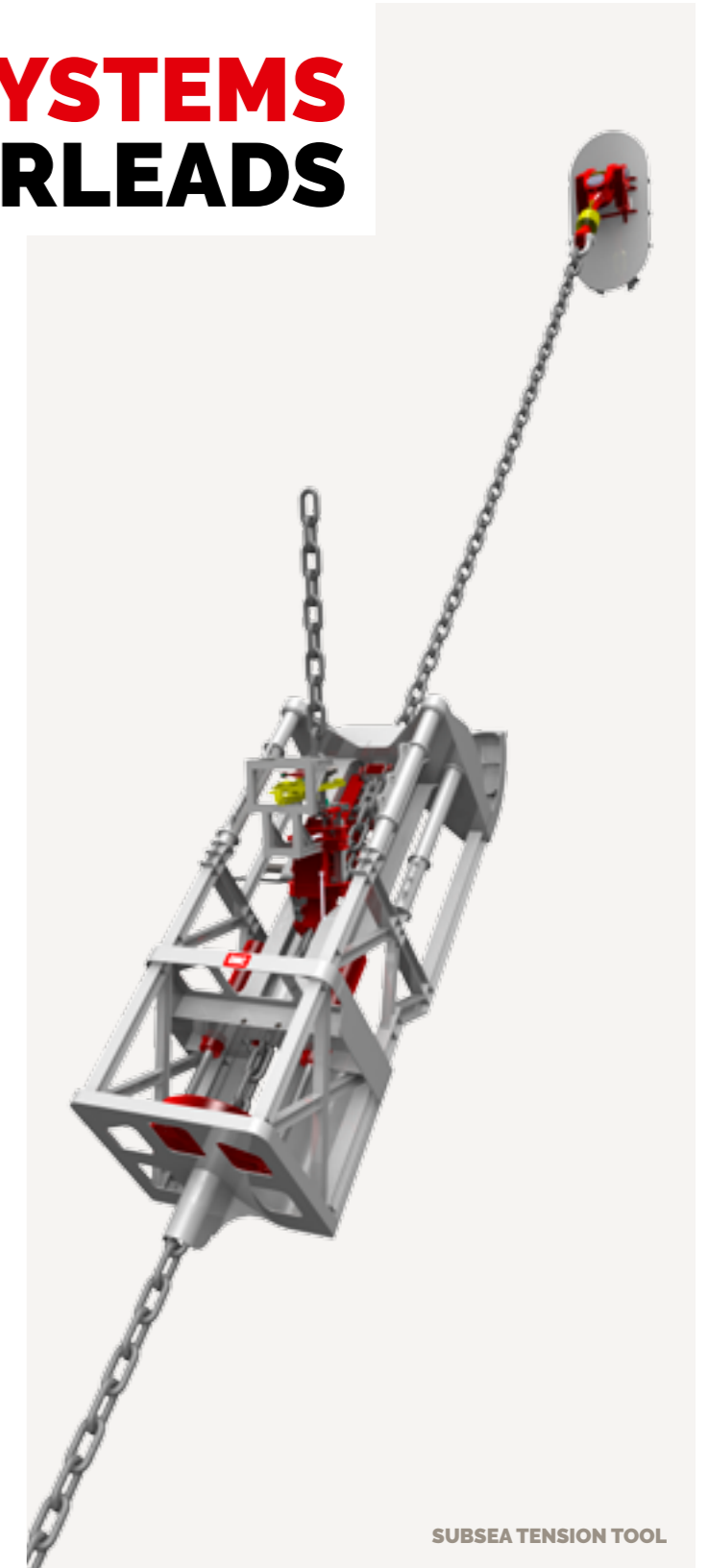
## LINEAR CHAIN JACKS

IHC has developed a compact, linear jacking solution to overcome the challenge of limited deck space. It has been designed to provide a straightforward operation, reliability, ease of installation and maximum performance. Standard chain jacks are double cylinder push- or pull-style vertical linear units with an integrated or separate primary chain stopper. The chain stoppers can be designed to withstand the minimum breaking load (MBL) of the installed mooring line. The IHC chain jacks can be configured to suit the particular requirements of various floating production units and platforms.

## SUBSEA TENSION TOOL

The subsea tension tool is used for tensioning of mooring lines of floating platforms, such as FPSOs or other floating platforms (eg floating wind turbines), without the need for tensioning equipment on board the platform. The subsea tension tool is suitable for (re)tensioning of new and existing mooring lines.

After the installation and tensioning of the mooring line is completed, the subsea tension tool is removed and placed on an AHV, leaving only a standard H-link behind. By using a subsea tension tool, the standard fairlead will be replaced by a uni-joint type hull connector.



SUBSEA TENSION TOOL

## BENEFITS

- future mooring system
- optimised mooring line integrity
- CAPEX
- floater space and weight savings
- OPEX
- available as part of the IHC Rental Fleet
- IHC patented.



# TANDEM MOORING AND OFFLOADING SYSTEMS



We design and supply complete integrated tandem mooring and offloading systems for floating production units such as FPSO, FSO and FLNG. IHC has a proven track record in the delivery of over 20 turnkey packages worldwide.

## OFFLOADING SYSTEMS

IHC can fabricate the reel to any diameter, length and type of hose (OCIMF or API 17K). We have experience of various hose reel diameters, for both single and double layer storage.

Our tailor-made spooling device reduces wear and tear on the offloading hose, and helps the hose to spool smoothly. If required, our systems can be delivered with an ESD valve, offloading hose string, MBCs, QC/DCs and OHTP (North Sea valve).

## TANDEM MOORING SYSTEMS

We deliver complete tandem mooring systems that warrant safe and efficient operations between the floating production unit and a shuttle tanker.

These comprise:

- mooring hawser reel
- mooring hawser assembly
- quick-release mooring hook
- integrated load monitoring
- hydraulic and/or electric controls.

# RISER PULL-IN SYSTEMS



We supply and engineer custom-built pull-in winches, turndown sheave trolleys, winch-skidding systems, traction-winch systems, hydraulic power units and dedicated control systems.

## RISER AND MOORING PULL-IN WINCH

Designed for the harsh conditions of the offshore industry, we can supply any winch to meet your requirements for turret moored or spread moored units, as well as any other floating production unit.

Our rotary-drum winches are available up to a line pull of 650mT in both a horizontal or vertical pulling direction. We offer various options, such as:

- single or multi-layer
- spooling device
- flat or (LEBUS) grooved drums
- control consoles
- steel wire rope or synthetic rope suitability
- electric or hydraulic driven.

Designed according to class, and all relevant rules and regulations, our systems are certified for operations in hazardous (Ex) areas.



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# BUNKER REELS



We are specialists in the design of hose reels for all types of bunker stations. These can be either hydraulic, electric or pneumatically-driven, single or multiple drum skids, suitable for transporting diesel, hydraulic oil, chemicals, and fresh and waste water.

Our bunker-loading stations are easy to operate and delivered with a reliable, self-contained electro/hydraulic power unit. The reels are designed in accordance with the highest safety standards and can be used for applications in hazardous areas. To comply with local regulations, we can supply locally-built, turnkey solutions.