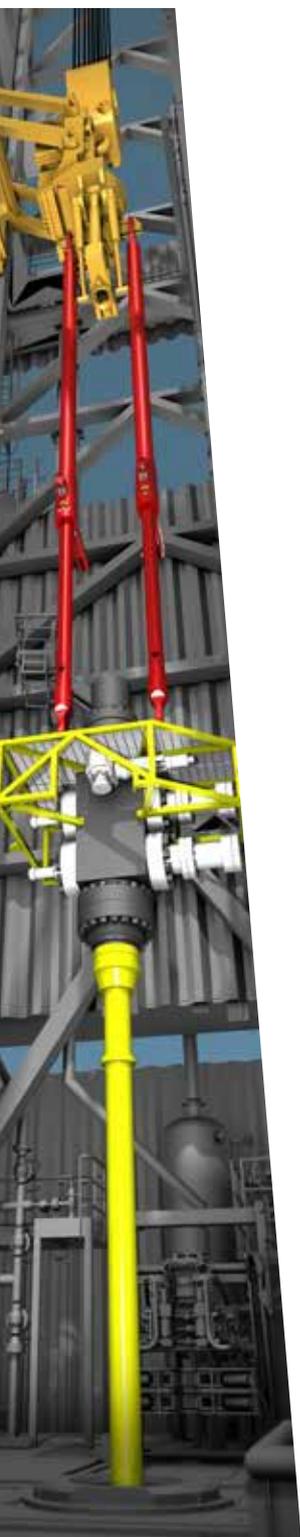


Safety Bails

Reducing risk – improving safety





The safe operation of floating drilling rigs at all times is a well-known industry challenge. The James Fisher (Scan-Tech) Safety Bails provide:

- Improved drill ship / semi-sub operational safety during completion, well testing, well intervention and workover (C/WOR) operations
- Reduced risk during accidental C/WOR overload conditions through compensator lock up
- Ensures compliance with **ISO 13628-7** through a predetermined load and known weak point
- Non-separating when activated
- Minimised down-time with rapid reset function
- Direct replacement for existing components
- Top-side location for maximum visibility & rapid reconnection
- Global product and through-life support coverage
- Proven in North Sea applications since 2005

Safety Bails

Scan Tech AS, a member of James Fisher and Sons plc, have developed the Safety Bails, an innovative weak point system that improves the safety of semi submersibles and drill ships during completion and workover (C/WOR) operations to comply with **ISO 13628-7** standards.

By working as the weakest link in the system, it provides a mechanism for a controlled break reducing the risk of permanent equipment damage. In doing so it acts to protect the and safety of the drilling installation's operatives as well as its higher value equipment, and reducing risk of hydrocarbon escape.

The development of the Safety Bails demonstrates James Fisher's continued commitment to the offshore oil and gas industry worldwide, by enhancing safe operations and reducing risk to personnel, operational and environmental concerns.

ISO 13628-7 Compliance

The safe operation of floating drilling rigs, at all times, is a well-known industry challenge; during completion, well testing, well intervention and workover (WOR) operations.

Complex offshore equipment combined with all year round operations in the harsh environments of the world have increased the probability for catastrophic events and equipment damage during completions, well testing and workover operations. The issue has been recognised by the International Standards Organisation (ISO) who have developed **ISO 13628-7** to help guide safety and reduce risk. Point 6.7.1 of this standard states:

“Measures should be taken to avoid damage to the C/WO in case of overloading due to accidental load effects. A weak link may be considered for accidental loads caused by excessive top tension (motion compensator lock-up) and excessive vessel offset (drive-off, drift-off, anchor line failure) to ensure that unacceptable escalation does not occur.”

By working as the weakest link in the system, the Safety Bails provide a mechanism for a controlled break reducing risk of damage to other equipment. In doing so it acts both to protect the safety of the drilling installation's operatives as well as reducing risk of damage to higher value equipment and lessening likelihood of hydrocarbon spillage.



Deepwater Drilling

As the demand for oil increases, and with the developments in technology, the requirement to be able to extract oil from deeper and harsher environments continues to grow.

The Safety Bails are ideally suited for use in all sea depths, giving additional protection to the riser and other expensive rig equipment. As the water depth for drilling increases, so does the risk to the environment and the potential to harm the reputation of the offshore industry.

Safety Bails help provide:

Protection to the riser

- Protection to personnel
- Protection from any unforeseen forces that may be applied to the rig

Environmental protection

- Protection from any mechanical compensator lock up - if the rig experiences increased loading, the automatic shearing of the Weak Link bolt will allow increased stroke in the bails, so little tension is transferred into the riser, well head or derrick
- Reduced risk of environmental spillage
- Reduced risk to riser or other expensive equipment damage

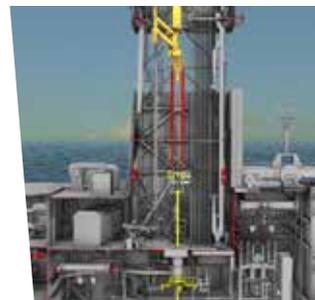
Innovation

At a set load the weak link bolt will shear, taking the stress of the lock up, allowing the stroke of the Safety Bails to increase offering tension failure protection to the components in the riser, well head and derrick.

- Safety Bails protect the rig against high waves, human error or mechanical failure causing overtension of the riser or other pressurised equipment.
- The hydraulic rescue system allows the rig operator to regain control without having to disconnect the riser and risk leakage into the environment.
- Mounted topside for simplicity of use and ease of resetting after any incident, avoiding expensive ROV's or diver.

Protection

In addition to complying with **ISO 13628-7**, the weak link system is specifically designed and manufactured to minimise potential risks from compensator failure. This helps reduce risk of damage to the derrick, work string and travelling assembly.





Potential risk without Safety Bails caused by tension overload:

- Injuries or loss of crew
- Falling objects
- Damage to the work string and other pressure controlled equipment
- Undesirable hydrocarbon spill to sea
- Non-Compliance with **ISO13628-7**

Training

Training for the crew can be provided at our land rig in Stavanger, Norway, prior to the bails being installed on the offshore rig or in situ. The Stavanger facility allows the bails to be used in all modes including the breaking of a link and the resetting of the Safety Bails. Taking advantage of this training facility will ensure that the rigs crews are able to fully utilise the safety enhancement offered by the Safety Bails during actual production operations.

Compliance

In Accordance with ISO13628-7.

Section 6.3.2.4

“The C/WO riser system shall be designed for accidental loads”

Section 6.7.1 ‘Safety joint or weak link’ stipulates:

“Measures should be taken to avoid damage to the C/WO in case of overloading due to accidental load effects. A weak link may be considered for accidental loads caused by excessive top tension (motion compensator lock-up) and excessive vessel offset (drive-off, drift-off, anchor line failure) to ensure that unacceptable escalation does not occur”

APOS.

The Statoil Control System, safety joint/weak link, specifies that a weak link shall be included in workover riser systems on underwater installation work with semi sub rigs.

Certification:

DNV approved, certification number D3952

Worldwide patent held

Installations having used the Safety Bails:

Statoil installations

- Songa Delta
- COSL Pioneer
- Bideford Dolphin
- Borgland Dolphin
- Scarabeo 5
- Polar Pioneer
- Snorre B
- Transocean Spitsbergen
- Deepsea Bergen
- Njord A

For further details on the Safety Bails, contact one of our specialist consultants at:

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