



PROTECTED TRANSFER SYSTEM (PTX) FOR SHIP-TO-SHIP OPERATIONS

PTX | PROTECTED
TRANSFER
SYSTEM

Quick and safe emergency release and shut-off coupling for cargo hoses



Gall Thomson
proven technology

COLLABORATION

The SafeSTS team have extensive practical marine experience and it is the quality and application of that experience which sets them apart and enables them to deliver services that lead worldwide standards in STS operations.

Gall Thomson Flip-Flap System Technology has many decades of protecting in-field FPSO, SPM, CBM and STS applications all over the world.

Uniting marine expertise and hands-on operational experience together with engineering excellence Gall Thomson and SafeSTS bring a world class innovative product to the Ship-to-Ship Transfer Industry.

INTRODUCING PTX

A Flip-Flap Marine Breakaway Coupling providing Safe and Rapid on-demand release within the marine hose transfer system. Reducing risk, preventing offshore spills and damage to capital equipment.

SAFETY

- Instantaneous closing and disconnection, saving significant time in an emergency.
- Activated from a safe distance using dedicated Reflex HPU.
- Delivers remote or local on-deck release.
- Removes the potential for hoses parting and damage to the manifolds in a breakaway scenario.
- Safe operation in accordance with HAZID assessment.
- Reduces the risk to crew in a rapid or emergency manifold disconnection.

OPERATIONAL

EASE OF FITTING

- The PTX Release is simply fitted between the hose and vessel manifold with no requirement for ship integration.
- Minimal downtime following activation with resetting of the unit in the bespoke resetting skid taking about 10 minutes.
- Improved control of emergency management and procedures.
- Can accommodate high flow rates during transfer.
- Optional over a wide range of cargo viscosity and temperature.

ENVIRONMENT

- Preventing rupturing of hoses and pollution from open hoses.
- Minimise the risk of spills: The Flip-Flap valve provides 100% leak-tight shut-off following closure.
- The PTX release is located directly over vessel's manifold drip tray.

COMPACT

- The advantageous Flip-Flap design provides a compact unit.
- The HPU is integrated into the transport and reset skid, enabling one single lift, minimising on-deck footprint.

ROBUST

The design ensures operational loads such as bending moments, axial stresses and cyclic applied loads created by wave and wind motion, tanker movement and pumping vibration are absorbed and have no adverse effects on function or condition.

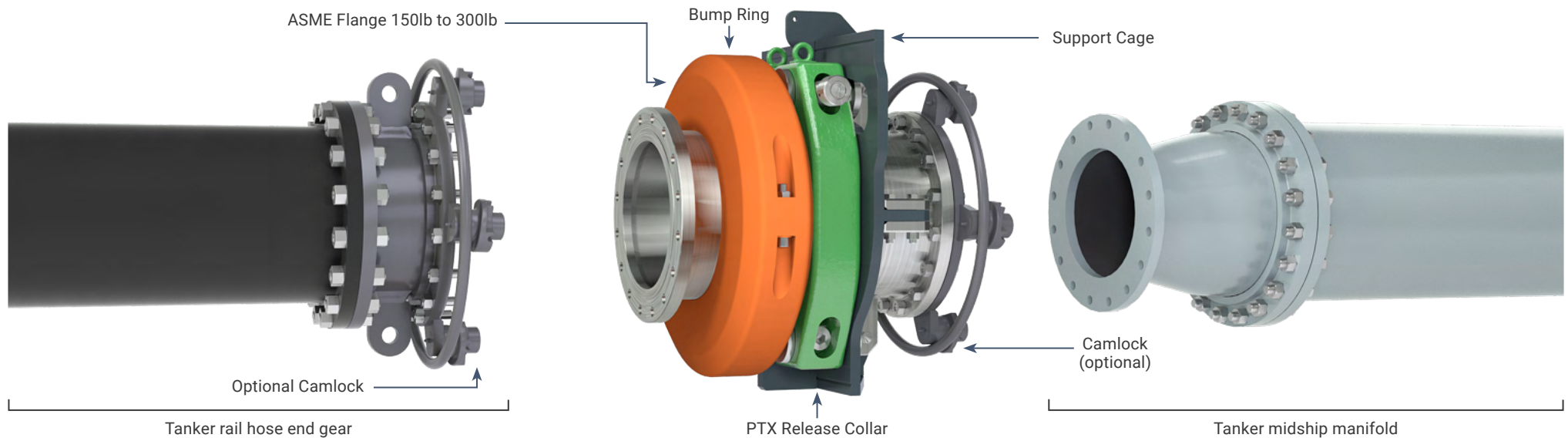
LONG LIFE

PTX uses proven components from the Gall Thomson MBC range - offering a life span of 20 years (assuming maintenance is carried out at the recommended intervals).

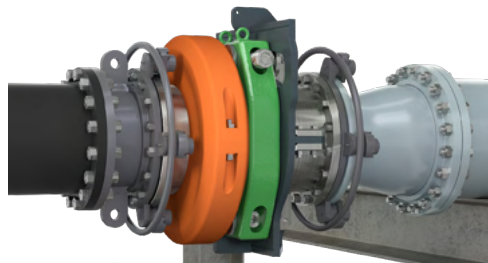
Maintenance efficiency: No moving parts during normal operating service cycles ensure longer maintenance-free periods.

QUICK TO CONNECT AND DISCONNECT

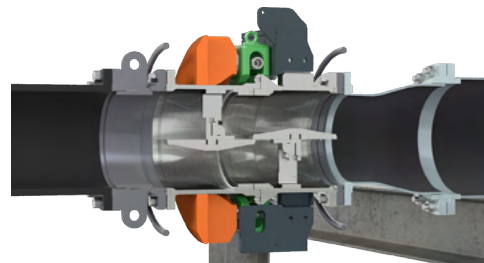
PTX allows for quick and simple integration with the existing system.



OPERATIONAL

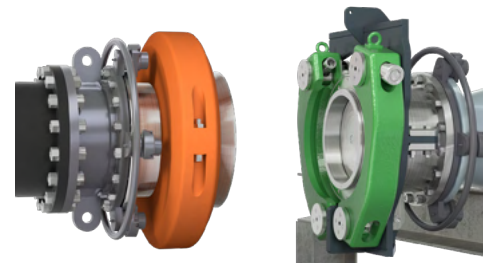


The PTX Release Coupling is quickly secured with Ratchet Camlock couplings. The portable HPU is then connected to the PTX Release Collar.

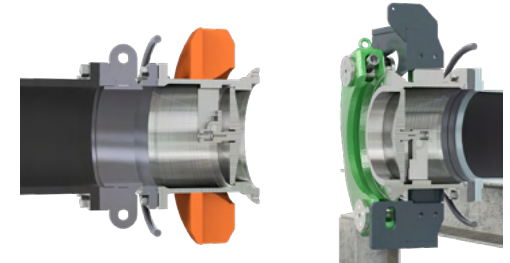


Flip-Flap valve discs are locked open and positioned in line with the flow – offering minimum headloss.

ACTIVATED



The HPU signals to the PTX Release Collar and the coupling parts. The energy of the bias springs flip the discs through a controlled arc.

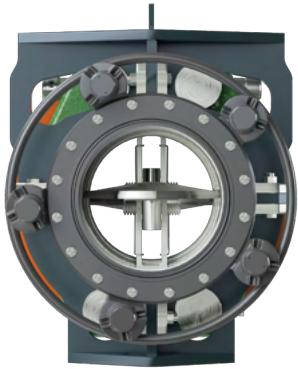


The activated discs are seated and sealed – providing 100% leak-free shut-off.

MEETING THE EXPECTATIONS OF SAFE AND EFFICIENT OFFSHORE TRANSFER OPERATIONS

PERFORMANCE

PROVEN - Gall Thomson PTX technology has 20 years of successful field experience using the Flip-Flap design: supplied on more than 350 MBCs on SPM, FPSO and CBM terminals.



RELIABLE

The proven Flip-Flap valve design consists of two valves rotated through 90 degrees and mechanically locked open by overlapping discs.

MINIMUM HEADLOSS

The bespoke Flip-Flap Valve arrangement and design minimises headloss and can accommodate high STS flow rate applications.

PROTECTED AGAINST CORROSION

PTX high spec corrosion protection system enhances product longevity and is proven with more than three decades in some of the world's harshest environments.

BUMP RING PROTECTION

A Bump Ring is incorporated to protect the PTX post-activation.

SAFE

The PTX disc valves are physically unable to close until the Release Collar activates following the R-HPU switch operation. PTX must be activated under 'no flow' condition.

RE-USABLE

Transit and resetting Skid is supplied with the system to enable ease of resetting, transport and storage.

SUPPORT RIGGING AND CHAIN RELEASE

PTX can include PODx systems to support rigging and chain release.

PTX STANDARD SUPPLY INCLUDES:

- PTX Release coupling.
- PTX Reflex HPU.
- Self-contained transport and resetting skid (TS).

PTX OPTIONAL EXTRAS:

- Camlock coupling.
- PODx (Powered Offshore Disconnect).
- Saddle and Fall Arrest.



PTX REFLEX HYDRAULIC POWER UNIT

The R-HPU is a compact, pre-charged, low maintenance HPU; offering a safe and rapid hydraulic signal to the PTX Release Coupling or other Gall Thomson hydraulic devices such as PODx.

The HPU is operated via pneumatic or electrical push button controls, with mechanical interlocks to prevent accidental activations.

The integral control valve self-relieves the control lines compensating for temperature fluctuations, whilst retaining hydraulic pressure stored within accumulators when in the dormant state.

PTX RELEASE TECHNOLOGY

There are two release options within the Release Fastener range: the choice of which depends on the application.

RELEASABLE BOLTS AND NUTS

The two options of Release Bolt (R-Bolt) and Nut (R-Nut) are both hydraulic release fasteners based on traditional load carrying geometry.

This standardisation allows for high performance and integration in existing architecture and technology.

Both systems can be assembled and reset quickly with standard wrenches/spanners.

In the normal state, loads can be introduced and retained. When a hydraulic signal is introduced, the thread engagement is removed allowing the connection to be detached.

Disengagement is achieved with minimum displacement and movement.

PROVEN TECHNOLOGY

The Gall Thomson R-Bolt and R-Nut have been developed over 23 years within the defence and energy sectors. Initially developed for the replacement of the exploding bolt in the French Ariane rocket motor development programme.

Since then this technology has been used in a wide range of applications and industries: from a variety of chain release systems, flange and structure release systems, mining, subsea oil and gas, military and civil water treatment.

HOW IT WORKS

The R-Bolt changes its internal threads from parallel to tapered in order to release. All moving parts are contained internally.

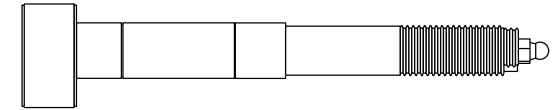
The R-Nut repels its thread sections radially with the use of an external sliding collar.

Systems have been deployed using M10 to M125 nuts.

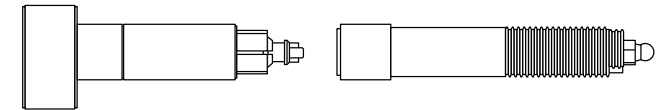
A range of activation methods are available: including hydraulic, electrical and pneumatic.

This technology has been deployed in a range of industries: including oil & gas, nuclear and defence.

R-BOLT

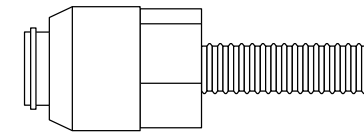


Release Bolt: assembled

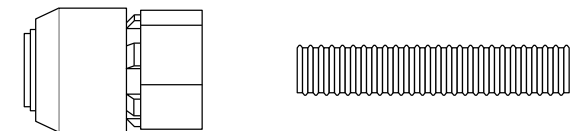


Release Bolt: activated state

R-NUT



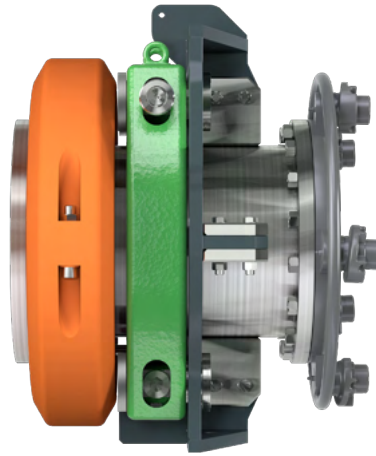
Release Nut: assembled



Release Nut: activated state

The SafeSTS Range:-

- STS operations:
 - Commercial
 - Floating Storage
 - Emergency & Contingency
- Floating pneumatic fenders.
- Ship-to-ship transfer hoses.
- Enhanced mooring systems for STS including snapback protection technology.
- Virtual Reality systems for remote learning, accident re-enactment and base audits.
- Specialist Marine Consultancy.
- Global support and aftersales care.



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Queen's Award for Technological Achievement

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FM 588505



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