Emergency Release Couplings

Typical media applications
LPG, Fuels, Chemicals, Industrial Gases, Hydrocarbons, Crude Oil.
Typical Emergency Release System (ERS) applications

**Minimising risk**
The KLAY ERC is the breakpoint within a transfer system and is designed to minimise risk to assets, personnel, reputation and the environment.

**Typical Media**
- Hazardous media
- Non-hazardous media

**Specific examples**
- LPG
- Fuels
- Chemicals
- Industrial Gases
- Hydrocarbons
- Crude Oil

**Applications**
- Loading Arm protection
- Hose Assemblies
- Truck Loading Arms
- Ship-to-Ship transfer
- Ship-to-Shore transfer

**Typical systems**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ERS Ship-to-Shore Cable Release System</strong></td>
<td>The ERC is controlled via cable and Manual Override Hand Pump.</td>
</tr>
<tr>
<td><strong>ERS Ship-to-Ship with HPU Control</strong></td>
<td>The Emergency Release Couplings are controlled by the on-board HPU central control unit.</td>
</tr>
<tr>
<td><strong>Dual Release</strong></td>
<td>The Dual Release ERC can be activated via the central control HPU or by the cable release mechanism.</td>
</tr>
</tbody>
</table>

**Note:** for LNG applications contact KLAY LNG on +44 (0)1373 827 100
Typical Emergency Release System (ERS) applications

Dual Release with Manual Override
This ERC can be activated via a cable or by an hydraulic release mechanism that is controlled by the HPU. A Manual Override Hand Pump is also a control option.

HPU with ERS
The HPU controls the ERS system and can accommodate up to 10 ERC units.

Cable Release loading arm
This ERC can be activated via a cable release mechanism (e.g. accidental vehicle drive-away).

Loading Arm Protection
The ERC protects the loading arm from over-extension.

Cable Release System
ERS: Emergency Release System
ERC: Emergency Release Coupling
HPU: Hydraulic Power Unit
Control system options

**Cable Release System**
The high tensile Cable is shorter than the hose system and is set to activate the ERC before force is applied to the transfer system. This prevents stress to hoses and loading arms.

**Spring Retained ERC**
The Spring Retained ERC is available in sizes 4” and below and has no sheering parts on activation. This means there is less need for spares.

**Dual Release System**
A Dual system delivers the advantages of both Cable and HPU systems.

**Hydraulic Release System**
The Hydraulic Release System is operated through the HPU system and offers the operator a single point of control over the whole ERS which means the ERC can be activated for other reasons beyond stress on the hose line. There are many control variables that can be integrated into the HPU system including automated options.

The HPU can operate a single ERC or a system of up to 10 ERCs.

**Manual Override Hydraulic Pump system**
This manual override is an independent and self-reliant portable option.
Release mechanism

**Flip-Flap valve closing mechanism**

The KLAW Flip-Flap valve delivers minimum spillage and 100% shut-off

**Efficient flow transfer**

The KLAW Flip-Flap design provides minimal flow restriction and low pressure drops. The flow characteristics of the valve mechanism are the most efficient when compared to other valve options.

**Collar Release Activation system**

**Resistant to vibration and pressure spikes**

Activation is controlled by the Collar Release Mechanism. This delivers the benefit of tensile loads not being exerted upon the transfer system; including the coupling, hose assembly and flanges.

**Breaking load parameters**

Breaking load tolerances can be calibrated to suit any particular application.

**Control systems**

The ERC is controlled by Cable, Manual Hydraulic Pump or Hydraulic Power Unit (HPU). Another option is the Dual Control System which uses both Cable and HPU systems.

1. Valve mechanism is in openflow status

2. Collar Release is activated.

3. Main seal retains media until valves close.

4. Valves are now closed and the separation sequence continues.

5. Collar Release is detached and the coupling is separated.

**Efficient flow transfer**

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**Technical specifications**

**Material options**
- Stainless Steel
- Carbon Steel
- Aluminium

**End connection options**
- Flanged
- Threaded Male
- Threaded Female
- Tapered or Parallel
- Weld Prepared Ends

**Sizes and pressure ratings**

<table>
<thead>
<tr>
<th>Inch</th>
<th>DN</th>
<th>Pressure rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>DN25</td>
<td>40BAR</td>
</tr>
<tr>
<td>1½&quot;</td>
<td>DN40</td>
<td>40BAR</td>
</tr>
<tr>
<td>2&quot;</td>
<td>DN50</td>
<td>40BAR</td>
</tr>
<tr>
<td>2½&quot;</td>
<td>DN65</td>
<td>40BAR</td>
</tr>
<tr>
<td>3&quot;</td>
<td>DN80</td>
<td>40BAR</td>
</tr>
<tr>
<td>4&quot;</td>
<td>DN100</td>
<td>30BAR</td>
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<tr>
<td>5&quot;</td>
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<td>23BAR</td>
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<tr>
<td>8&quot;</td>
<td>DN200</td>
<td>17BAR</td>
</tr>
<tr>
<td>10&quot;</td>
<td>DN250</td>
<td>14BAR</td>
</tr>
<tr>
<td>12&quot;</td>
<td>DN300</td>
<td>10BAR</td>
</tr>
</tbody>
</table>

Non-standard configurations are also available.

- **Cable control option** providing the benefits of both cable and hydraulic
- **Hydraulic control option** providing additional control
- **Manual control option** providing independent manual override
- **Proven KLAW Flip-Flap technology**
- **Calibrated breaking load tolerances**
- **Efficient flow rates**
- **Resistant to vibration and pressure spikes**
- **Robust construction**
- **Compact and lightweight**
**KLAW Emergency Release Coupling**

**Flow rates**

<table>
<thead>
<tr>
<th>Pressure Drop (Bar)</th>
<th>Flow Rate M³/Hr Based on Water 20ºC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.6</td>
<td>0</td>
</tr>
<tr>
<td>0.5</td>
<td>200</td>
</tr>
<tr>
<td>0.4</td>
<td>400</td>
</tr>
<tr>
<td>0.3</td>
<td>600</td>
</tr>
<tr>
<td>0.2</td>
<td>800</td>
</tr>
<tr>
<td>0.1</td>
<td>1000</td>
</tr>
<tr>
<td>0</td>
<td>1200</td>
</tr>
<tr>
<td>0</td>
<td>1400</td>
</tr>
</tbody>
</table>

**KLAW ERC Accessories**

**Camlock**
The fast, reliable and safe way of making and breaking hose connections.

**Hose Saddle & Fall Arrest System**

**Hose Saddle**
Protects handrails and provides hose support.

**Hose**
Designed for the rigours of product transfer schedules.

**For further information contact KLAW**
Tel: +44 (0) 1373 827 100   Email: info@klawproducts.com

**Shuts off transfer flow in an emergency**
In an emergency, the valves close and the ERC separates. This shuts off the downstream and upstream flows of media within the transfer system.

**Instant closure**
The instant closure of the KLAW Flip-Flap valve mechanism within the ERC delivers the crucial advantage of minimal spillage.

**No stress to hoses or loading systems**
The release mechanism of the KLAW ERC is designed to limit stress to hoses, loading systems and other connections such as flange joints.

**Compact and lightweight**
Valuable for handling, balanced systems and post-activation control.
The KLAW range
Marine Breakaway Couplings
Industrial Breakaway Couplings
Full Bore Marine Breakaway Couplings
Emergency Release Systems
Cryogenic Emergency Release Systems
Dry Disconnect Couplings
Camlocks
Swivel Joints

The advantages of KLAW transfer safety systems
KLAW designs and supplies a range of systems designed to improve safety and efficiency during the transfer of media.

This enables you to minimise risk to assets, personnel, the environment and reputation and protect against downtime and clean-up costs, litigation, injury, increased insurance and investment costs caused by higher risk.

KLAW offers experience and a track-record for innovation and reliable solutions.

LNG Applications contact KLAW LNG.

KLAW LNG is a leading provider of safety transfer systems for the LNG sector. Applications include ship-to-ship, ship-to-shore, Mobile Response and Bunkering.