



# KLAW

## Marine Breakaway Couplings



### Typical offshore applications

Supply vessels to offshore platforms  
Ship-to-Ship and Ship-to-Shore transfer  
Other bulk transfer hose applications.

# KLAW

## Minimising risk during offshore transfer

### **The KLAW Marine Breakaway Coupling (Marine BAC) protects assets, personnel and the environment during offshore transfer operations.**

The KLAW Marine BAC provides an identified and safe parting point within the hose transfer system. When tensile forces exceed predetermined tolerances, the KLAW Marine BAC activates.

### **The KLAW Marine BAC therefore delivers two distinct safety features.**

- **Closure of media flow: then;**
- **Allowing separation of the hose transfer system.**

Separation relieves stress on the hose transfer system and minimises risk of damage and spillage.

### **The KLAW Marine BAC prevents damage to assets, injury to personnel, contamination of the environment and extended downtime.**

### **The KLAW Marine BAC protects against:**

- **Vessel movement or loss of dynamic positioning.**
- **Adverse weather conditions such as storms.**
- **Pressure surge within the transfer system.**

This might lead to disruption of operation, extensive clean-up costs, litigation and damaged reputation.

### **Double closure on activation**

When the KLAW Marine BAC activates, the Flip-Flap Valve mechanism closes on both the upstream and downstream flow within the hose transfer system. This minimises spill on both sides of the hose transfer separation.



### **Reliable performance in the marine environment**

The KLAW Marine Breakaway Coupling is designed specifically to resist those bending moments and torsional forces expected from floating wave motions and the rigours of the marine environment.

The design of the KLAW Marine Breakaway Coupling therefore prevents premature activation of the unit and protects the Breakstuds from fatigue.

## Dependable performance

### **Instantaneous closure**

Spill on activation is minimised by instantaneous closure of the Flip-Flap Valve mechanism.

The typical response closure time is between 0.2 and 0.5 seconds. (Dependent on pressure, flow and media density.)

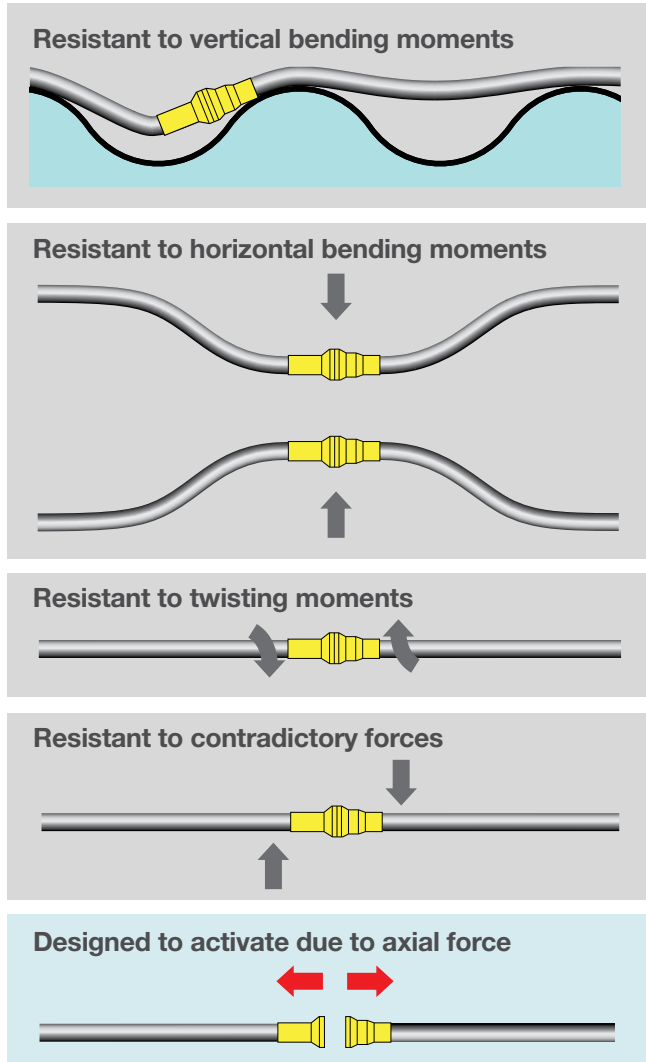
### **100% shut-off**

Delivering 100% closure and shut-off of upstream and downstream flow.

### **Minimum headloss**

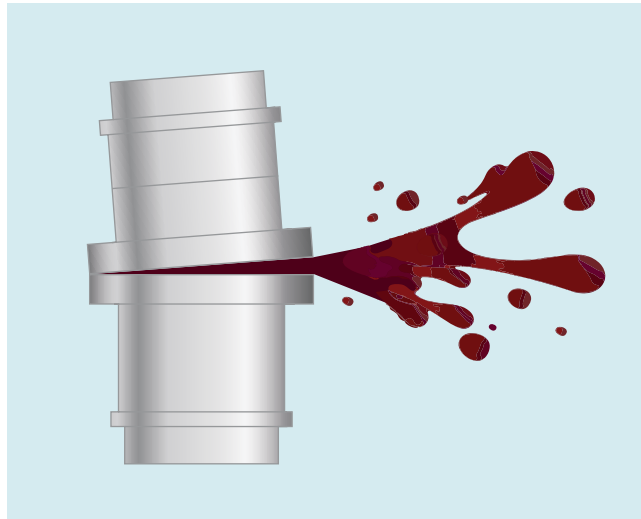
The KLAW Flip-Flap Valve design delivers minimum headloss when in the open position, compared with other valve designs.



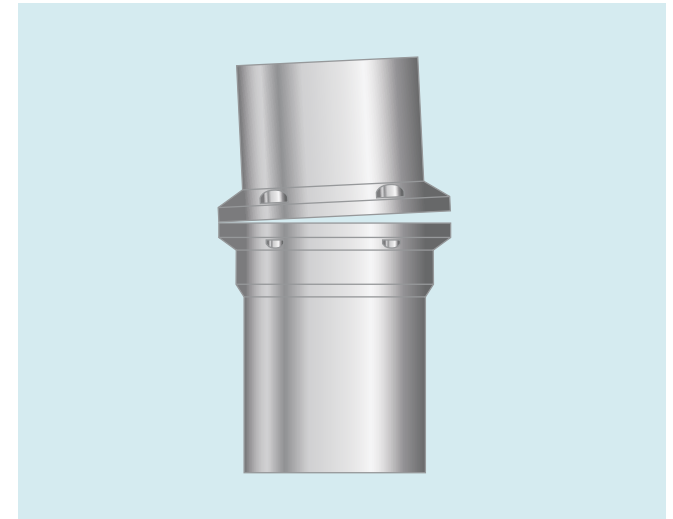


Partial Break occurs when a coupling only partially separates.

A Partial Break event provides a situation where spillage is uncontrollable.



Other Breakaway Couplings can result in uncontrolled spillage in the event of a partial separation.



KLAW Breakaway Couplings provide 100% closure even on partial separation.

Unlike other manufacturers the valve mechanism within the Klaw range is designed to avoid the risk of partial break.

## Benefits of the KLAW Marine Breakaway Coupling

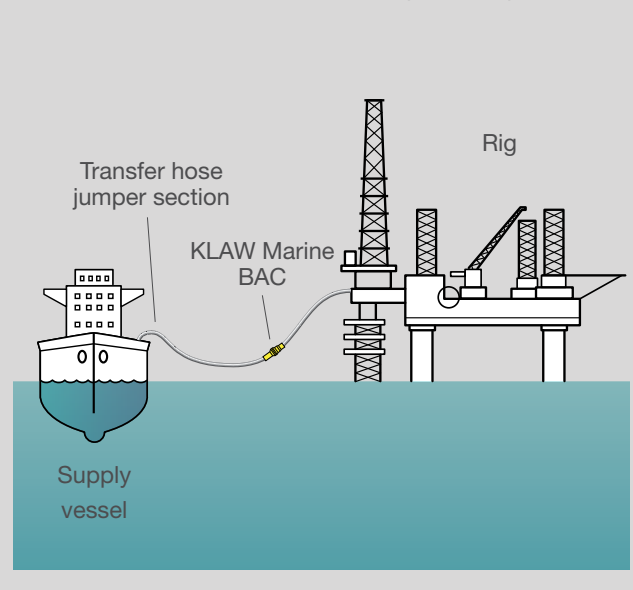


# Applications and assembly

## Typical applications

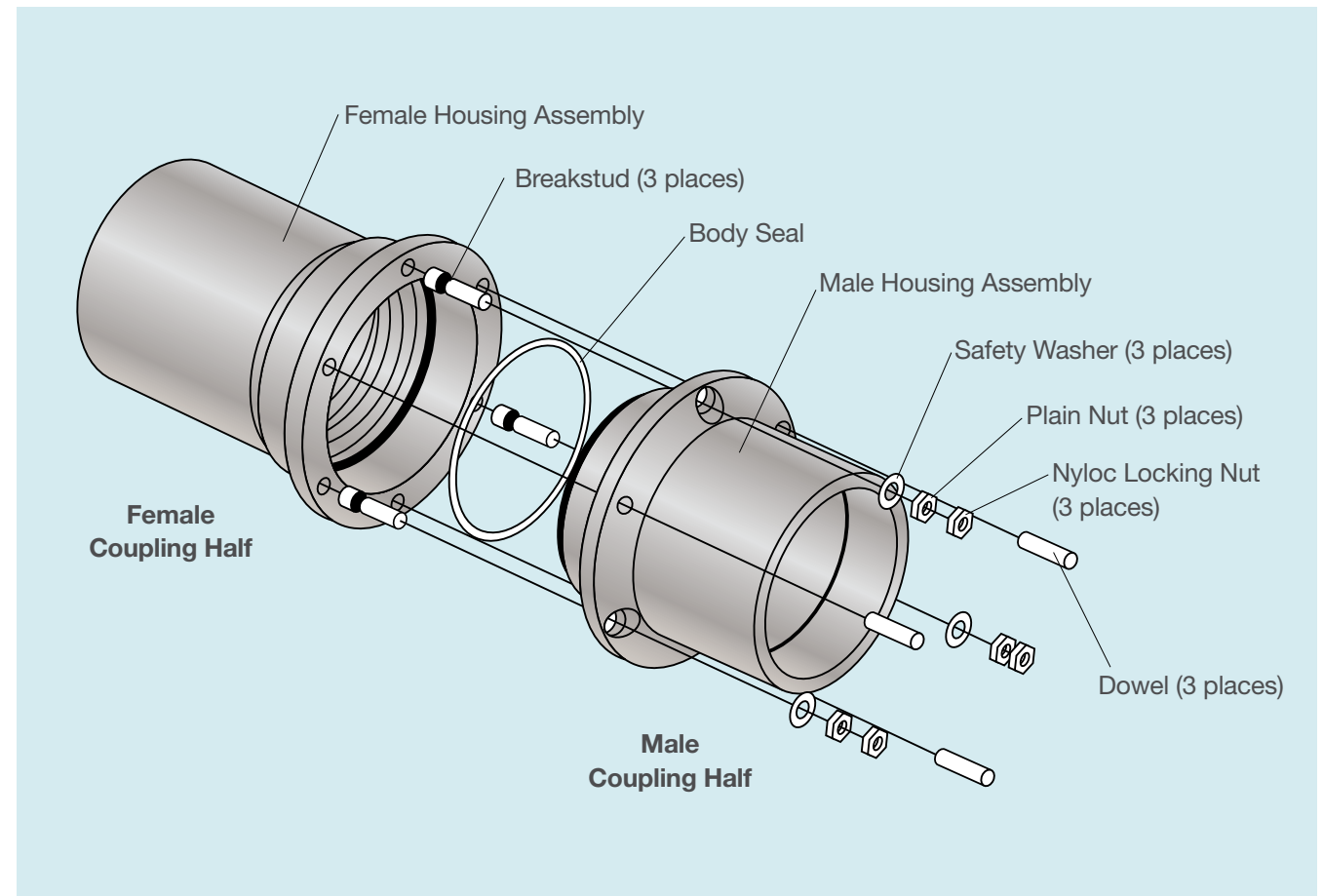
- Ship-to-Ship
- Ship-to-Shore
- Supply Vessel to Rig
- Bunkering

### Typical Supply Vessel to Rig configuration



## Exploded Assembly (typical)

Simple illustration demonstrating the interface components.





## Technical specifications

## Sequential Closure KLAW Marine Flip-Flap Valve

### Materials of Construction

Standard coupling housings are stainless steel 316.  
Other materials are available on request.

### Sizes

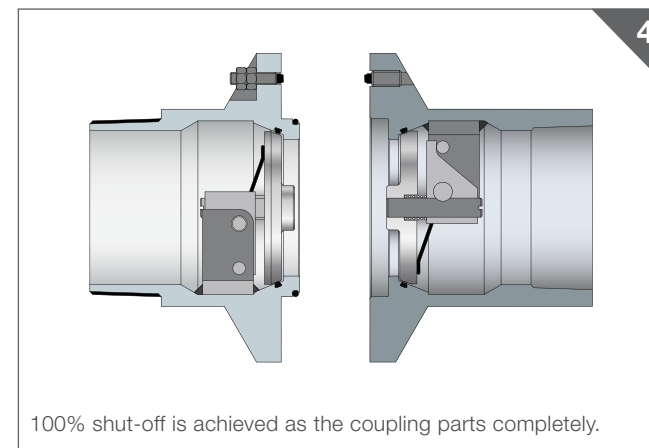
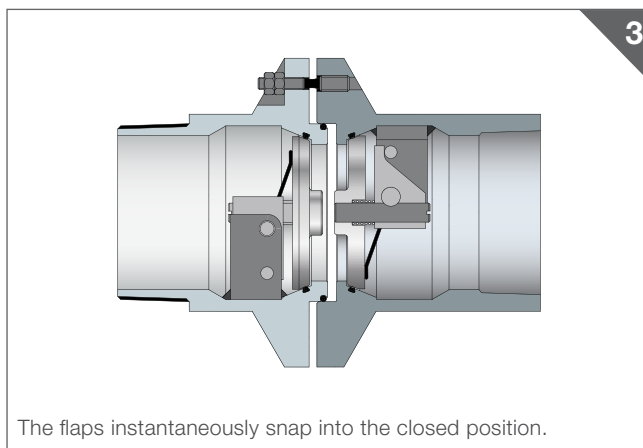
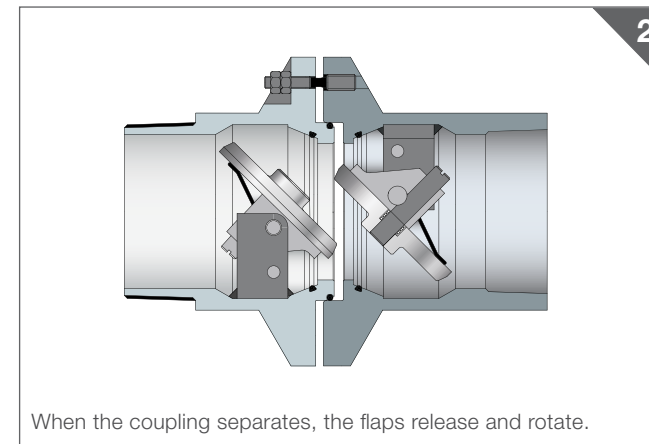
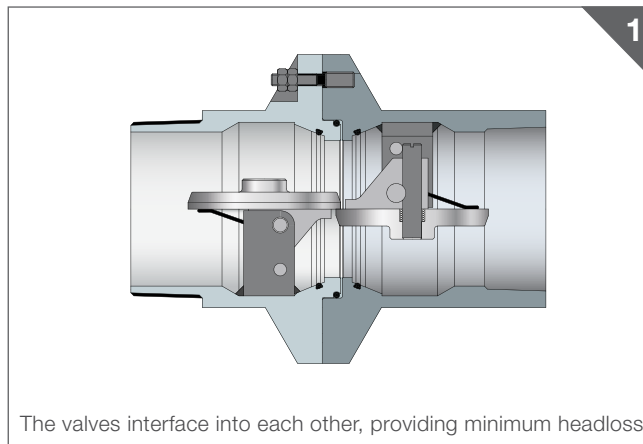
Standard nominal bores available:  
**2", 3", 4", 5", 6", 8"**

### Hose compatibility

The KLAW Marine Breakaway Coupling is suitable for Rubber, Hard Walled and Composite hoses.

### End Connections

- NPT Threaded male or female
- BSP Threaded tapered or parallel
- Flanged Connections (ANSI 150/PN16 / ANSI 300/PN40)
- Hammer Union Fittings (Fig 100)
- Other End Connection configurations are also available on request.



**The KLAW Flip-Flap is the most reliable and efficient offshore Breakaway Coupling Valve design in the world.**

Conceptual illustrations only. Contact KLAW for technical representations.

# KLAW Marine Breakaway Coupling Specification Data

## Minimum spillage

Minimum spillage on separation is a key benefit of the KLAW Marine Breakaway Coupling

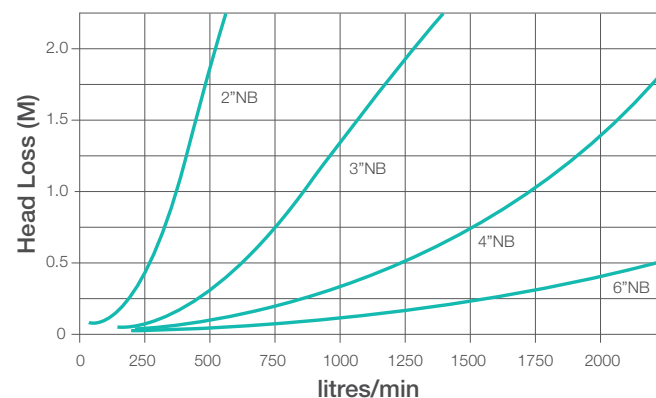
Example spillage by sizes		
DN	NB	Cubic Centimetres
50	2.0"	15cc
80	3.0"	65cc
100	4.0"	205cc
125	5.0"	433cc
150	6.0"	583cc
200	8.0"	2210cc

Maximum Design Flow Rates at Activation			
DN	NB	M3/h	L/min
50	2"	50	833
80	3"	100	1667
100	4"	150	2500
125	5"	225	3750
150	6"	300	5000
200	8"	450	7502

Flow rates are based on water at ambient temperature

Maximum Design Pressure (PS)			
DN	NB	Barg	Psig
50	2"	40	580
80	3"	40	580
100	4"	30	435
125	5"	27	392
150	6"	23	334
200	8"	17	247

## Flow Rate Characteristics



## Breaking loads

The break-loads on the KLAW Marine BAC can be varied to suit any particular application.

## MARINE NON-CLOSURE OPTION

The KLAW Marine Non-closure contains no valve mechanism but retains the advantage of separation via Breakstud pre-calibrated loading tolerances. This is the ideal solution where spillage can be managed or controlled. The KLAW Marine Non-closure is full bore and is fully pigable unless the specification dictates reduced bore.

**Typical media** - Cement, Muds, Barite and other high viscous media.

## In-field servicing and Spares Kits

The KLAW Marine BAC is field serviceable. KLAW Marine BAC Spares Kits are also available.

These Kits contain the spares required for a typical service and re-setting after activation. An Installation, Operations and Maintenance Manual (IOM) is also included along with unlimited advice and technical backup.

**For further information**  
**+44 1373 827 100**  
**support@klawproducts.com**

## 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.

## The KLAW range

Marine Breakaway Couplings  
Industrial Breakaway Couplings  
Full Bore Marine Breakaway Couplings  
Emergency Release Couplings  
Emergency Release Systems  
Cryogenic Emergency Release Systems  
Dry Disconnect Couplings  
Camlocks  
Swivel Joints

### IMPORTANT:

**Specification:** KLAW recommends that all information and data are confirmed with the KLAW Technical Department before specifying, ordering or commissioning.

**Usage:** Please refer to the correct Installation and Maintenance Manual for information or instruction regarding the installation, handling, operation, maintenance and servicing of any product mentioned in this literature. Further advice is available from the KLAW Technical Department.

# KLAW

KLAW Products Ltd  
Commerce Business Centre  
West Wilts Trading Estate  
Westbury, Wiltshire, BA13 4LS  
United Kingdom



Tel: +44 (0) 1373 827 100



[www.klawproducts.com](http://www.klawproducts.com)

Fax: +44 (0) 1373 858 877



[info@klawproducts.com](mailto:info@klawproducts.com)

Product descriptions and specifications are subject to change without prior notice. Copyright © All information provided is subject to international copyright, trademark and patent laws and cannot be reproduced without the expressed and written permission of KLAW Products Ltd. Trademark protected: KLAW™. Protected by Worldwide Patents.



KME1511D

**A Signum Technology company**

**Tel: +44 (0) 1373 827 100**



[info@klawproducts.com](mailto:info@klawproducts.com)



[www.klawproducts.com](http://www.klawproducts.com)