

As exposed on previous articles the basic components used to conform a chain mooring set are the following:



1. **Chain, including bridle if necessary.**
2. **Shackles, at least three of them** (tail, swivel, and sinker shackles).
3. **Swivels** (usually one).
4. **Sinker or anchor** (usually one).

In the present article we list and try to explain all the accessories needed in addition to a chain:



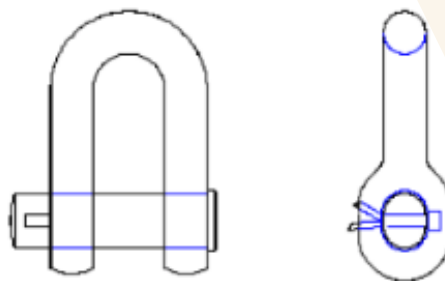
1. BRIDLES

The bridle consists of two equal lengths of chain, usually designed of sufficient length to pass beneath the skirt of the buoy.

The 'legs' of the bridle can be joined together by a circular ring, triangular steel plate or even a single shackle. A swivel should be included in between the bridle and the first chain length.



2. SHACKLES



The shackle is device used for attaching the mooring to the buoy, and joining the other components of the mooring together.

As exposed on previous articles, the strength of the shackle should be at least equal that of the chain which it is joining. Thus, the diameter of the shackle bow will likely be greater than the size of chain which it is joining together.

For this reason, sometimes enlarged final links are necessary. When defining a shackle diameter, sometimes the specification refers to the diameter of the chain where the shackle is to be used, and sometimes it refers to the diameter of the shackle itself. Especial attention should be put into this specification.

The types of shackles/connectors are as follows:

Forelock shackles: with a forelock that secures the closing pin.

Clenching shackles: with a hammer forged permanent pin.

Bolt shackles: with a round pin secured by nuts.

Screw Pin shackles: with a screwed-in-place pin.

Kenter shackle: with a complex, 3-piece, mounted shackle composition.

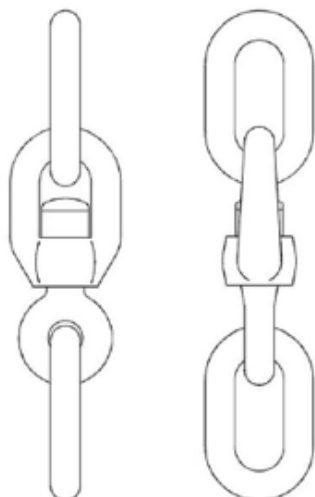
Quick Release Link: presented in many types and that allows a quick release of the mooring set if needed.



3. SWIVELS

A swivel permits two lengths of chain to be joined without transmitting a twisting motion (torque) from one length to the other.

This is key on buoy moorings, because due to the rotation of a buoy around its axis, a twisting action is applied to the chain. This may result in the chain failure or the performance of the mooring set to be reduced drastically. A swivel is placed between the Tail Chain or Bridle and the Riding Chain.





SINKERS

Experience has shown that sinkers are an adequate solution to keep buoys in their assigned positions. They do not provide the resistance or holding power of anchors of the same weight but have the great advantage that they will provide the same resistance irrespective of the direction that the mooring load is applied.

Sinkers usually are made of concrete or cast iron.

The effective sinker weight will be equal to the weight of the sinker in air minus the weight of the water displacement.

