

## Mooring tackle — a primer

Establishing a mooring and assembling the appropriate mooring tackle to keep your boat safe is serious business that is best done with the advice of your local harbormaster. In many harbors, the harbormaster will determine the size and type of mooring tackle — illustrated here — you'll need, so before investing in any part of the system, check the harbormaster's requirements.

Below is a general guide to the materials that comprise mooring tackle. All items need to be sized appropriately for your boat and the conditions of your anchorage.

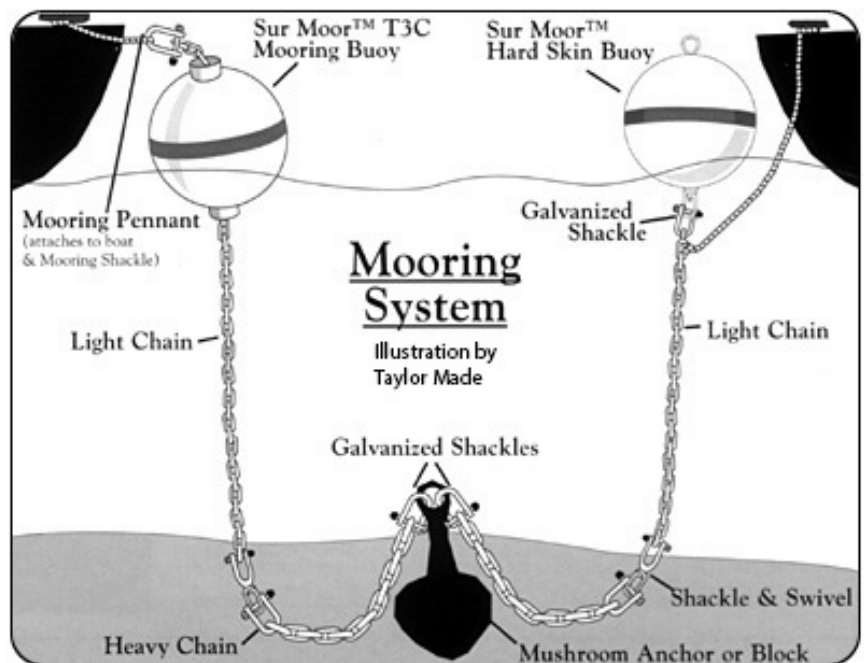
While the Defender crew has hundreds of years of boating experience, we suggest you consider this a starting point as you shop for gear — and review your plans with the harbormaster before purchasing. He or she knows the seabed and how Mother Nature treats your anchorage in severe weather. In addition to knowing the specifics of your anchorage and the most appropriate tackle for the area, the harbormaster may have other regulations you'll need to follow, such as required tackle maintenance intervals.

### THE ANCHOR

Proper mooring tackle typically consists of a [mushroom anchor](#), [pyramid anchor](#) or helix anchor. The mushroom design allows seabed material to fill the cap of the mushroom. Pyramid anchors have sharp angles for good penetration of rocky or hard seabeds and sand. Think of a helix anchor as a large screw with wide threads being driven into the seabed. In less welcoming seabeds, a large concrete block might be used if advised by your harbormaster based on conditions. The downside of a block, regardless of weight, is that it can drag in extreme conditions. And all materials weigh less underwater based on the buoyancy factor, so think twice before going the block route. The block will weigh less underwater than it does on land, and it won't dig into the seabed the way mooring anchors will for extra holding power.

### CHAIN AND SHACKLES

[Heavy gauge chain](#) is attached to the anchor with an appropriately sized [galvanized shackle](#). This length of chain should be equal to 1.5 times the maximum depth of the water — accounting for extreme high tides. A [swivel shackle](#) is used to attach lighter chain to the heavy chain. This lighter chain should be equal to the maximum depth of the water, again accounting for extreme high tides.



## MOORING BUOY

The lighter chain is attached to a [mooring buoy](#), often referred to as a mooring ball. Coast Guard regulations call for mooring buoys to be white with a horizontal blue stripe. More harbormaster are now requiring owners to mark their mooring ball with their mooring permit ID, or their name or the name of their boat. Mooring buoys serve to suspend the chain while also taking the strain off the line that eventually leads to your boat, which is called a [mooring pennant](#), or more commonly known as a mooring pendant — more on that below. Some buoys include a galvanized steel [buoy rod](#) running through the center. This rod, which is replaceable, has a swivel at the bottom and an eye at the top. The light chain attaches to the swivel at the bottom. The eye at the top can be used for your dinghy bowline, or a pick-up buoy — more on that below too — but it is not recommended for attachment of the pennant. Other buoys have only a center tube through which chain can be run and attached with appropriate shackles at bottom and top for connecting chain and pennant.



## MOORING PENNANT OR PENDANT

The mooring pennant, also referred to as a mooring pendant, is attached by shackle directly to the light chain that is attached to the bottom of the mooring ball. This line is what finally attaches your boat to the security of that anchor buried in the seabed. The length of your mooring pennant should be 2.5 times the distance between your bow cleat and the water. You should use nylon line for this part of the tackle because nylon has the ability to flex and absorb the shock of your boat jerking against the anchor in storms. The pennant should include an eye splice at the bitter end for quick attachment to a deck cleat. A second pennant can be added to prepare for storms or simply as a routine safety measure, especially if you leave your boat unattended for long periods.



## PICK-UP BUOY

You could at this point let the pennant float on the water, which would require fishing it out with a [boat hook](#) when returning to your mooring — and searching for it with a light in the dark. A [pick-up buoy](#) makes this task much easier and much safer. The pick-up buoy — similar to a lobster pot buoy and with a thin, fiberglass rod extending from the top to make retrieval easy — is attached to the pennant with a small line, giving you quick, easy access to the pennant. Pick-up buoys are sold with rods of varying heights to accommodate large boats with decks high off the water.



## CHAFE GEAR

[Chafe gear](#) is material that can be placed around your pennant. This gear is highly recommended to protect your mooring pennant — and your boat — as the pennant runs up to your boat and through chocks, if applicable.

## MOORINGCATCHER

The [MooringCatcher](#) is a specific product that makes retrieving a pennant even easier and combines the features of a mooring buoy and pick-up buoy in one. This device is a buoy with a metal rod extending from the bottom with an eye for attaching the light chain. A fiberglass rod extends from the top of the buoy with a flexible hook that holds your pennant high for easy access. Pull up to the hook, lift the pennant off and attach to your boat — done.



## MAINTENANCE

An annual maintenance check of all gear is essential. Many harbormasters responsible for large harbors require prescribed maintenance intervals of all mooring tackle so again, be sure to check with your harbormaster at the start of this project for a clear understanding of your needs and responsibilities. Chafing of pennant line and corrosion of chain and shackles are most often cited as causes of failed moorings. Defender carries a full line of [mooring accessories](#) to get you started and keep your mooring tackle well maintained for years to come.