

# SERO<sup>®</sup> SAILING<sup>®</sup>

## Rigging Guide & Owner's Manual



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### What's Included



**IMPORTANT!** Be careful when opening the packaging! Using a knife or other sharp object may damage the contents. Before throwing away any of the packaging, make sure that you have located all of the items listed below.

- Hull
- Mast
- Upper and lower booms connected by interlocking eyebolts. The gooseneck is installed on the lower boom.
- Daggerboard
- Rigged rudder — the rudder and rudder cheek come pre-attached.
- Tiller assembly — the tiller and tiller extension come pre-attached.
- Sail
- Delivery kit — comprised of four bags. Each bag's contents is listed below.

#### Bag 1: Sail Rings x30

Sail rings



#### Bag 2: Line Kit

- Mainsheet
- Halyard
- Outhaul x2
- Daggerboard retaining line
- Daggerboard shock cord



### What's Included

#### Bag 3: Complete Auto Bailer

- Bailer cap
- Bailer plug
- Bailer housing (with O-ring pre-installed)



#### Bag 4: Additional Parts

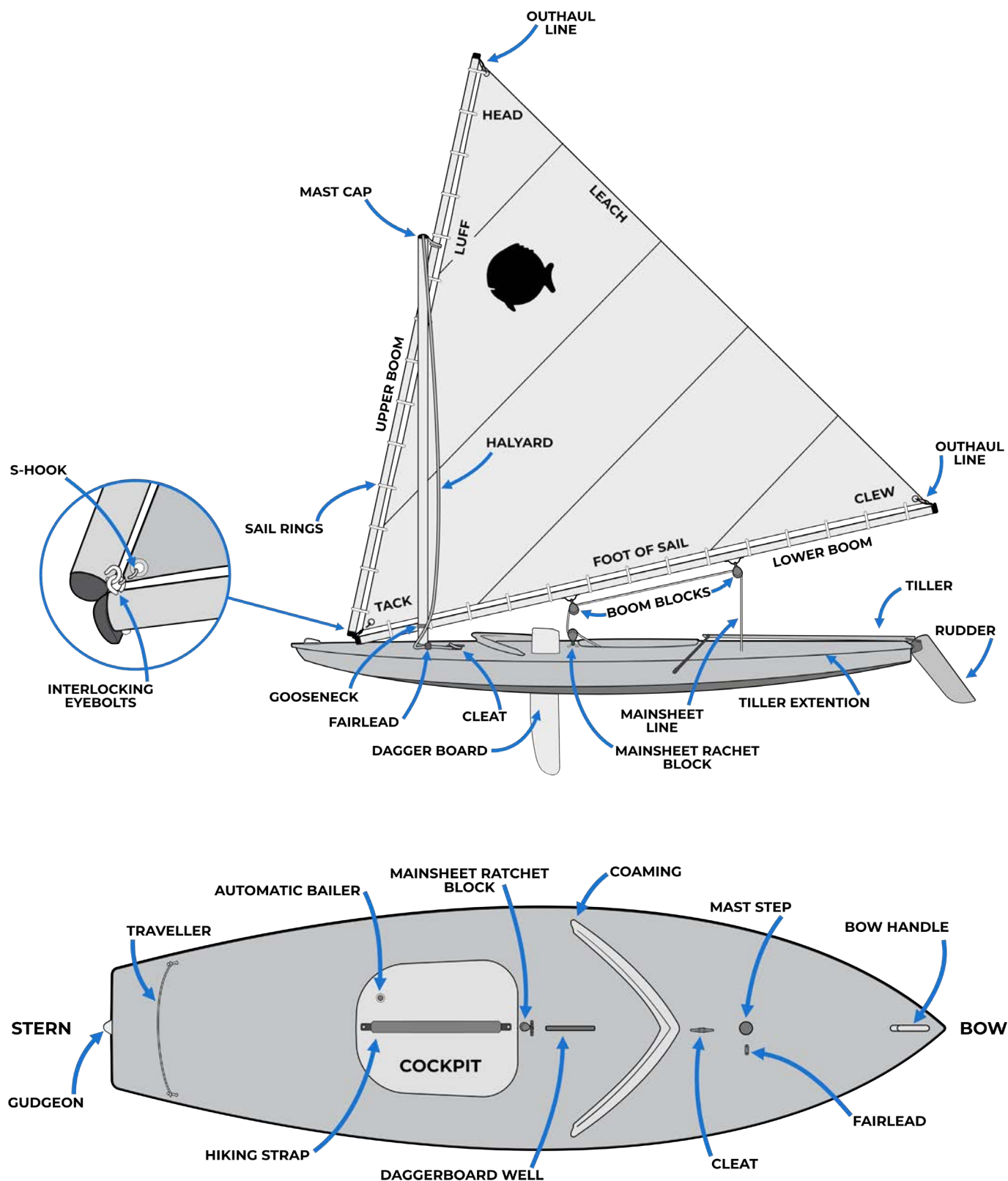
- Mainsheet ratchet block
- S-Hook
- Brummel hook x2
- Mainsheet snap shackle
- Stand up spring
- Boom block x2
- Zip tie x2



In addition to the parts provided, you will need the following tools:

- Electrical tape
- Pliers
- 7/16" socket wrench
- 7/16" combination wrench

### Sunfish Sailboat Anatomy



### Quick Start Rigging Guide



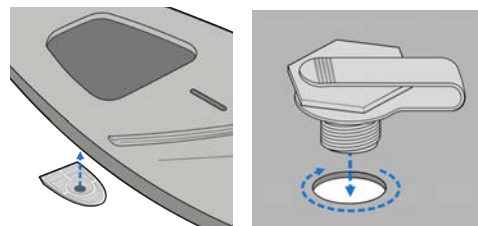
**IMPORTANT!** Before following these instructions, make sure that there are no wires overhead or leading to the launch site.

For full rigging instructions, see page 6. For an online, mobile-friendly version, scan the QR code.



#### Step 1: Install the Bailer

All bailer parts are in bag 3 of your delivery kit. Fit the bailer cap into the loop of the bailer plug and insert the plug. Hold the housing under the hull while you screw in the cap from above the cockpit hole. The flat side of the housing and ball should face the stern.

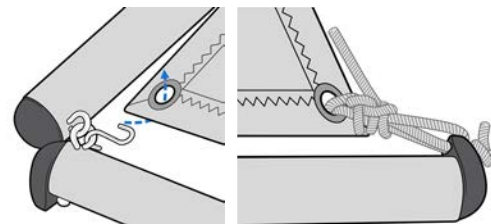


#### Step 2: Install the Mainsheet Ratchet Block

Mainsheet ratchet block and spring are in bag 4 of your delivery kit.

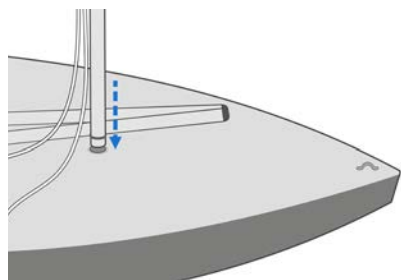
#### Step 3: Attach the Sail to the Booms

The S-hook is in bag 4, the outhaul line is in bag 2, and the sail rings are in bag 1 of your delivery kit. Use the S-hook to attach the tack of the sail to the eye bolt on the lower boom. Use the outhaul lines to attach the clew and head of the sail to the corresponding boom cap, tripling the line and securing with a couple of half hitches. Finish securing the sail using a sail ring at each grommet.



#### Step 4: Attach the Boom Blocks

The boom blocks are in bag 4 of your delivery kit.

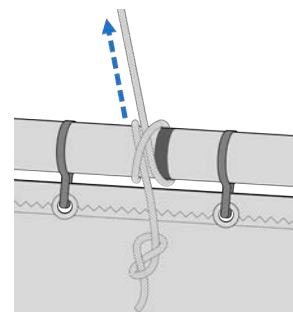


#### Step 5: Step the Mast

Thread the free end of the halyard through the hole in the top of the mast cap. Lay the booms and sail on the deck, with the booms on the port side of the mast step and the gooseneck aligned over the mast step. Make sure that the base of the mast and the mast step are free of any sand or dirt, which could damage the boat's finish. Slide the mast into the mast step while holding the free end of the halyard to ensure it does not slide back through the mast cap.

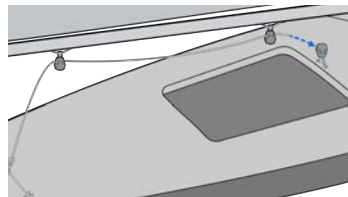
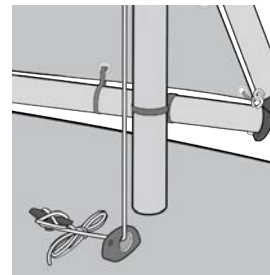
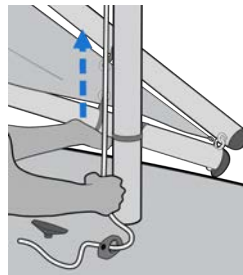
#### Step 6: Attach the Halyard

The halyard is in bag 2 of your delivery kit. Decide where on the upper boom you wish to secure the halyard—higher will result in faster speed, lower will give you more room beneath the boom. For novice sailors, it is recommended to secure the halyard between the 5th and 6th sail ring (counting down from the head of the sail). Wrapping electrical tape around the upper boom will prevent the halyard from slipping. Attach the halyard using a clove hitch and a stopper knot at the very end of the line.



### Step 7: Raise the Sail

With your boat head-to-wind, pull on the halyard to raise the sail. You may need to lift up on the lower boom near the gooseneck to allow the gooseneck to slide freely. Once the clove hitch is tight against the mast cap, thread the halyard through the fairlead and secure it to the halyard cleat. Coil the free end of the halyard in front of the cleat or use it to create a vang.

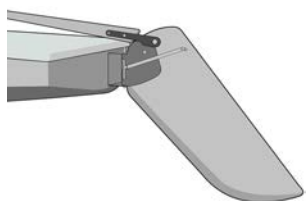
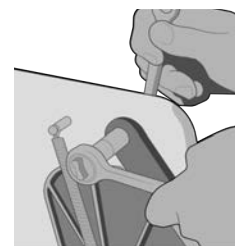


### Step 8: Rig the Mainsheet

The shackle, and the mainsheet block are all in bag 4 and the mainsheet is in bag 2 of your delivery kit. Secure the mainsheet snap shackle to one end of the mainsheet with a bowline knot. Clip the shackle to the bridle, and thread the free end, through the two lower boom blocks and the mainsheet ratchet block. Tie a stopper knot in the end of the mainsheet.

### Step 9: Attach the Tiller to the Rudder

Remove the bolt from the tiller straps. Align the notch in the tiller straps with the notch in the rudder cheeks. Attach the tiller to the rudder using the bolt and two 7/16" wrenches.

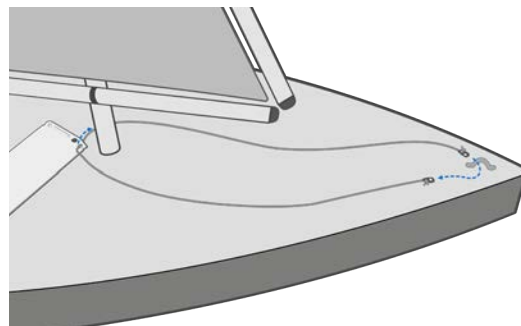


### Step 10: Attach the Rudder

Slide the tiller under the bridle. Compress the pintle pin and align the notches on the pin with the notches in the gudgeon bracket. Slide the rudder in place and release the pin. The rudder should easily swing side-to-side. Place the rudder in the kicked-up position until after you have launched.

### Step 11: Secure the Daggerboard

The brummel hooks are in bag 4 and shock cord and retaining line are in bag 2 of your delivery kit. Thread each end of the daggerboard shock cord through one of the brummel hooks and secure with a stopper knot. Thread one brummel hook through the forward hole in the daggerboard, around the mast, and through the bow handle. Connect the two brummels. Secure one end of the daggerboard retaining line to the aft hole in the daggerboard using a bowline knot. Secure the other end of the line to the mainsheet ratchet block eyestay with another bowline knot.

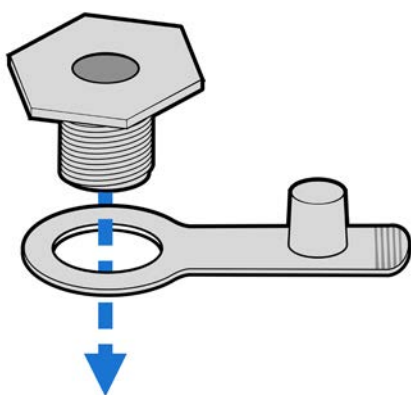


### Step 1: Install the Bailer

Gather the following parts from Bag 3 of your delivery kit:

- Bailer cap
- Bailer plug
- Bailer housing (with O-ring pre-installed)

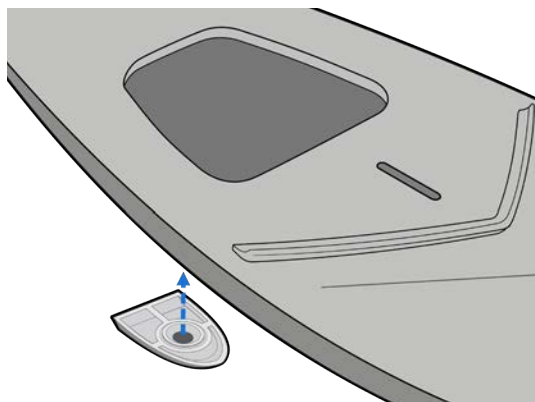
**1** Hold the bailer plug so that the plug stopper faces upward. Fit the bailer cap into the ring.



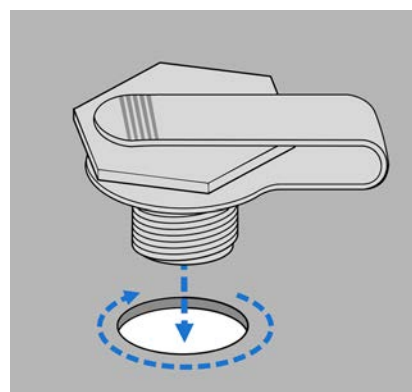
**2** Fold the bailer plug over and fit the stopper into the hole in the top of the cap.



**3** Locate the bailer opening on the underside of the hull. Place the bailer housing under the hull, with the ball and flat side facing toward the stern (back of the boat).



**4** From the top (inside the cockpit), thread the bailer cap down through the cockpit hole and into the bailer housing. Screw the cap in place until it is hand tight.



**Note:** The bailer will not sit flush with the bottom of hull.

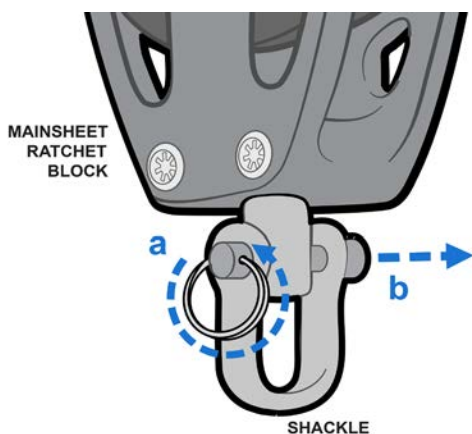
### Step 2: Install the Mainsheet Ratchet Block

A *sheet* is a line that is used to control the movable corner (clew) of a sail. A *mainsheet* is a line attached to the boom that is used to control the mainsail. A *mainsail* is a sail which is rigged to the mast.

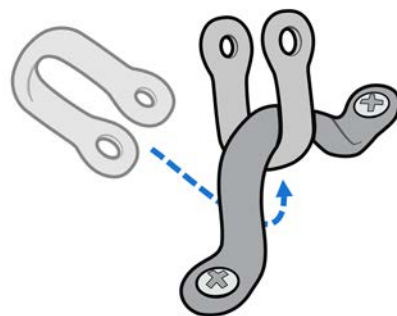
Gather the following parts from bag 4 of your delivery kit:

- Mainsheet ratchet block
- Stand up spring
- Zip ties

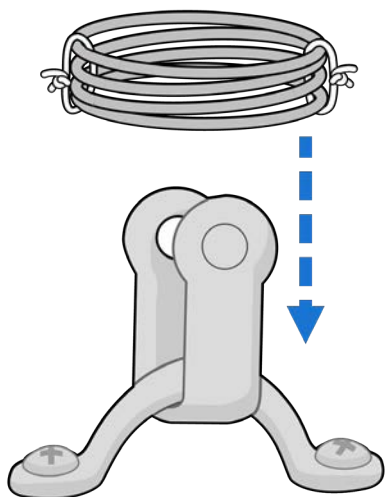
- 1 Disconnect the shackle from the mainsheet ratchet block by (a) removing the ring and (b) pulling out the pin.



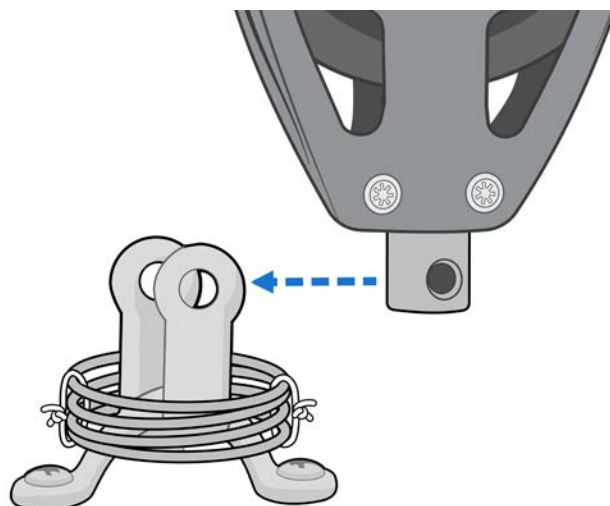
- 2 Locate the mainsheet block eyestraps (small metal loop attached to the deck, between the cockpit and daggerboard trunk) and loop the shackle through it so that the ends with the holes point up.



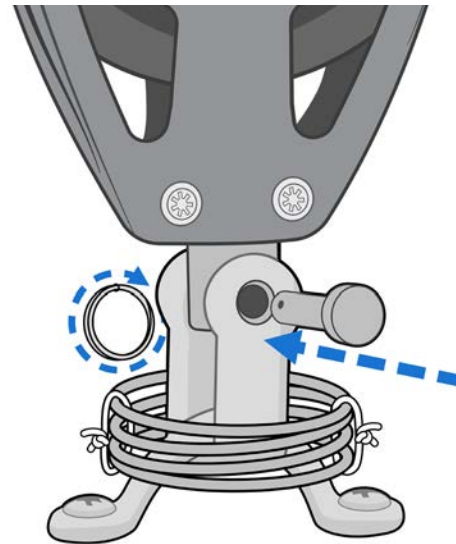
- 3 Compress the large stand up spring, attach the zip ties to keep it compressed, and place it over the shackle and eyestraps.



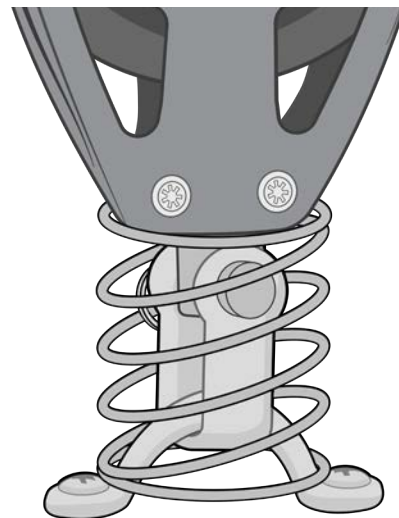
- 4 Align the hole in the bottom of the mainsheet ratchet block with the holes in the ends of the shackle.



- 5 Insert the pin through the aligned holes and secure it by threading the ring back through the small hole in the end of the pin.



- 6 Remove the zip ties so that the spring is no longer compressed and it holds the mainsheet ratchet block in an upright position.



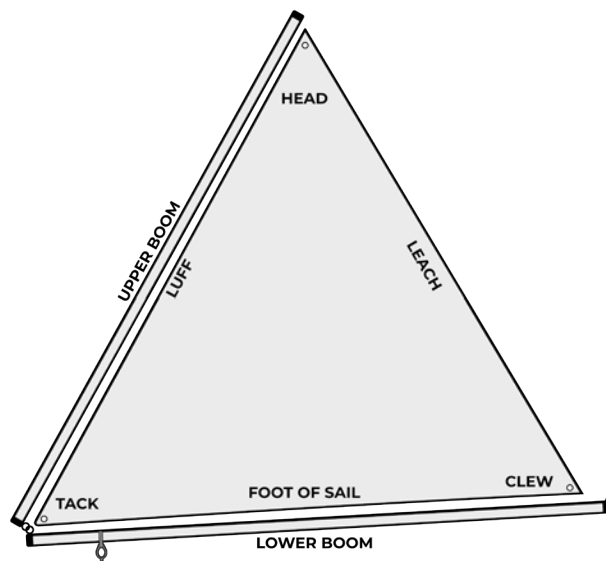
### Step 3: Attach the Sail to the Booms

Gather the following parts and tools:

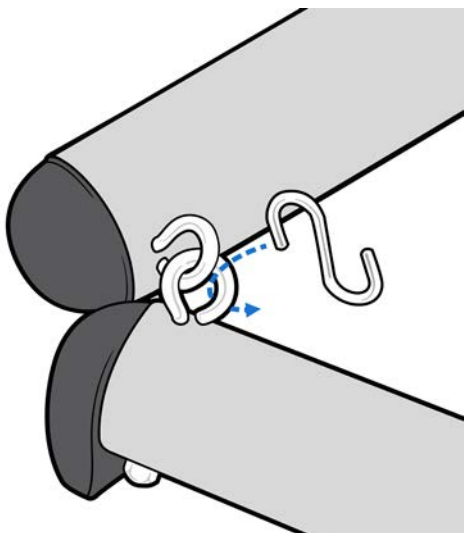
- Sail
- Boom set
- S-hook – bag 4
- Sail rings (27) – bag 1
- Outhaul lines (2) – bag 2
- Pliers

- 1 On a level surface free of sharp objects, spread out your sail so that it lays flat.

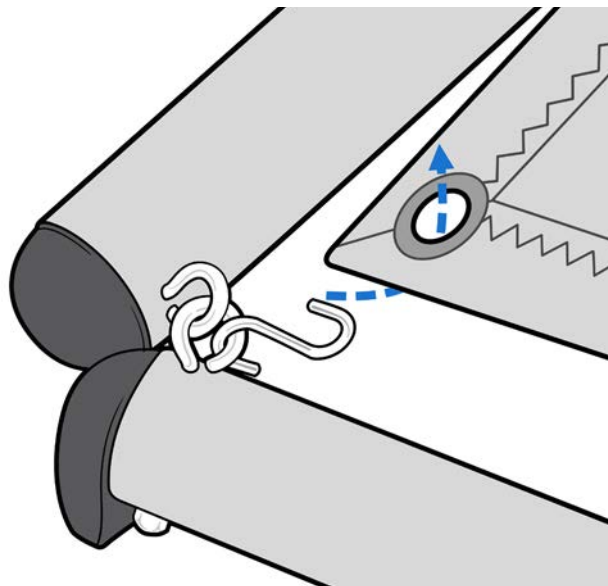
Lay the lower boom along the foot of the sail (bottom edge) and the upper boom along the luff (forward edge). Both of these edges of the sail have grommets attached. The lower boom is the one with the gooseneck attached. The (2) eyestraps on the lower boom should face away from the sail.



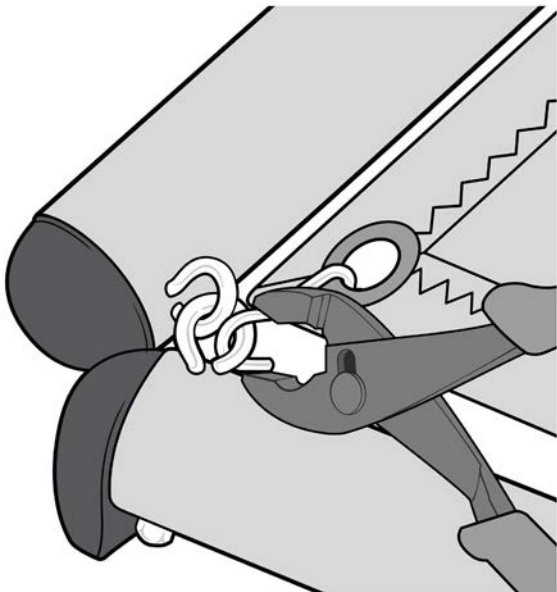
- 2 The booms are linked together by an interlocking eye bolt. Loop one end of the S-hook through the eye bolt that is attached to the lower boom.



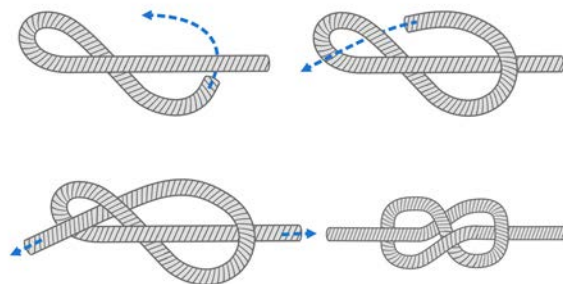
- 3 Loop the other end of the S-hook through the grommet in the tack of the sail (the corner of the sail where the two booms meet).



- 4** Using a pair of pliers, crimp both sides of the S-hook closed.



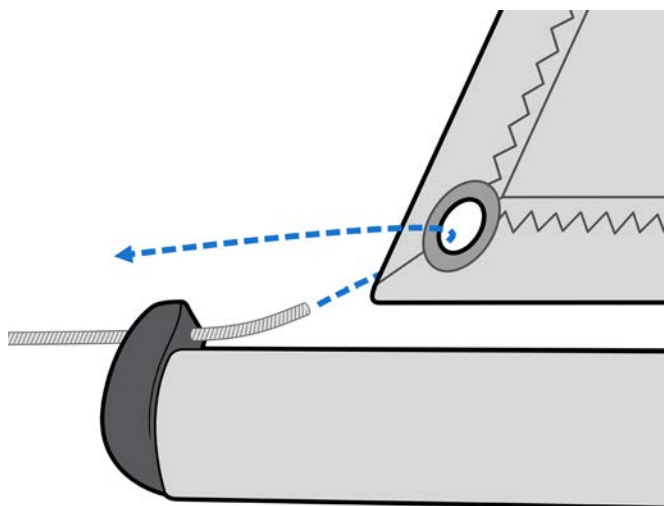
- 5** Tie a figure 8 knot in the end of one of the outhaul lines.



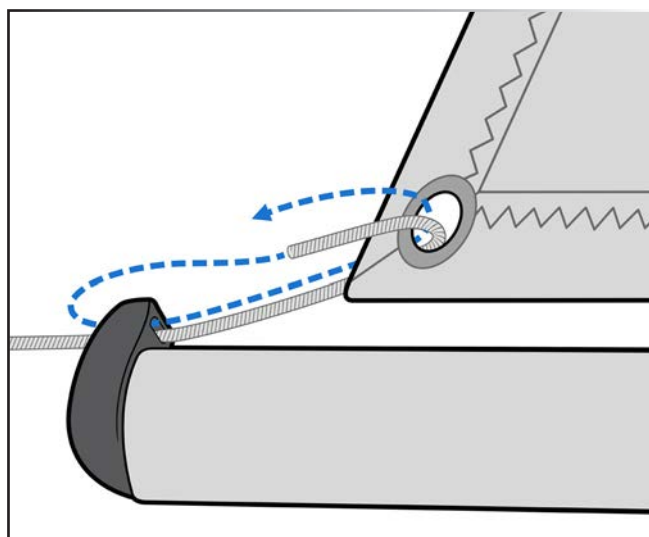
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[FIGURE 8 KNOT.](#)



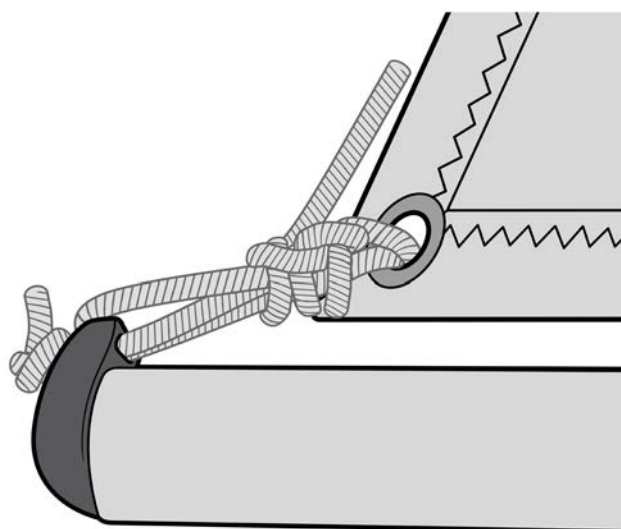
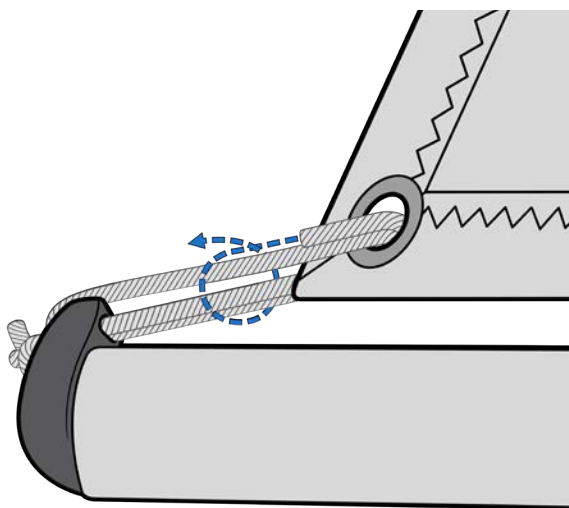
- 6** Feed the free end of the outhaul line through the aft end of the lower boom end cap, from the outside end toward the sail, then through the grommet in the clew (aft lower) corner of the sail.



- 7** Feed the line back through the boom end cap and through the grommet again, so that the line is tripled.



- 8** Tighten the line to ensure the sail is as taught as possible and secure by tying two half hitches around the lines.

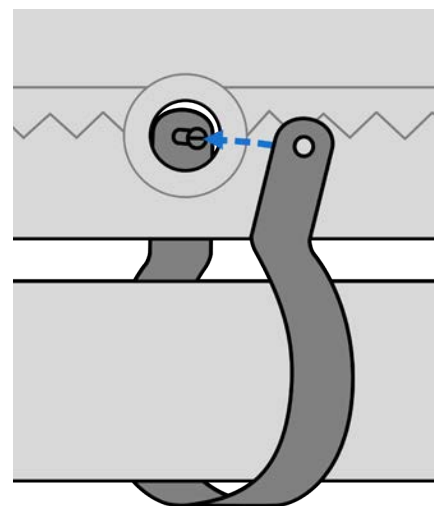


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[HALF HITCH.](#)



- 9** Repeat steps 6-8 using the second outhaul line to secure the last free corner of the sail (head) to the upper boom end cap.

- 10** Using the sail rings, secure the remainder of the sail to the booms. At each grommet, place the sail ring around the boom. Insert the post of the sail ring through the grommet and into the hole on the other side, pressing firmly to close.



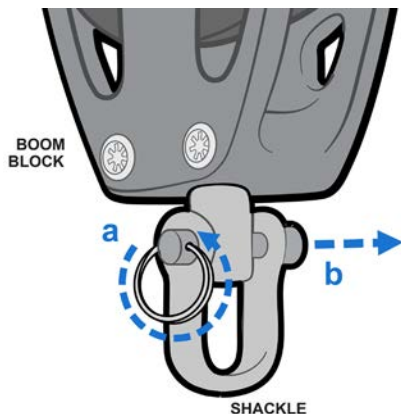
**Note:** The sail rings will be difficult to close. Pliers can be used to close the sail rings; however, be careful not to scratch the boom.

### Step 4: Attach the Boom Blocks

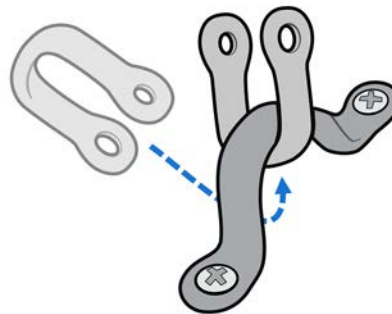
Gather the following parts:

- Boom block (2) – bag 4

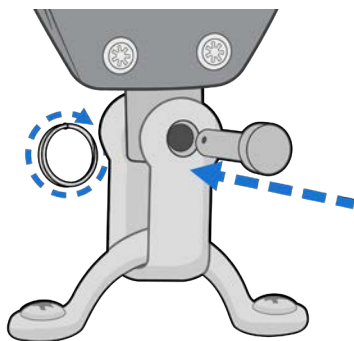
- 1 Disconnect the shackle from the boom block by (a) removing the ring and (b) pulling out the pin.



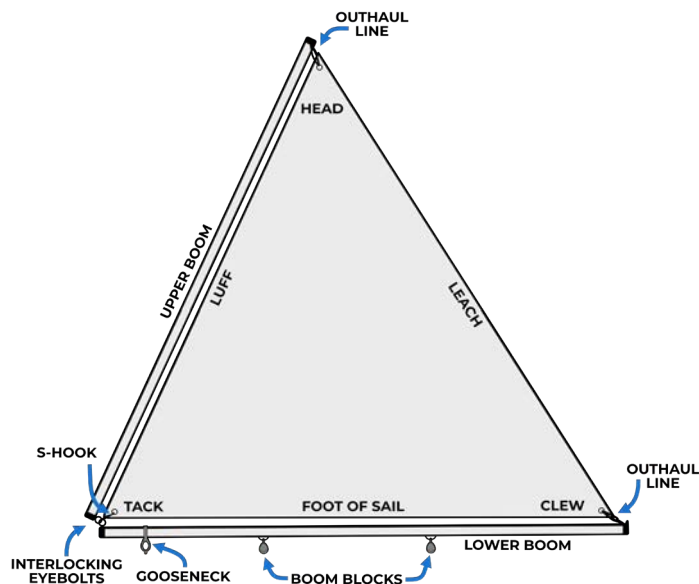
- 2 Locate the forward-most eyestay attached to the lower boom and loop the shackle through it so that the ends with the holes are pointed away from the boom.



- 3 Align the hole in the bottom of the boom block with the holes in the ends of the shackle. Insert the pin through all the aligned holes and secure it by threading the ring back through the small hole in the end of the pin.



- 4 Repeat 1-3 to attach the other boom block to the aft-most eyestay on the lower boom.



### Step 5: Step the Mast



#### IMPORTANT!

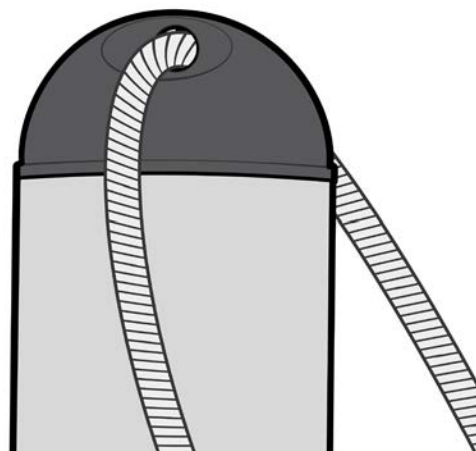
Before stepping the mast, make sure that there are **NO WIRES ABOVE** the boat or leading to the launch site. Also, make sure that the mast step (the hole you will insert the mast into) and the base of the mast are perfectly clean. Any sand or dirt in this area will damage the boat's finish.

Gather the following parts:

- Mast
- Halyard – bag 2

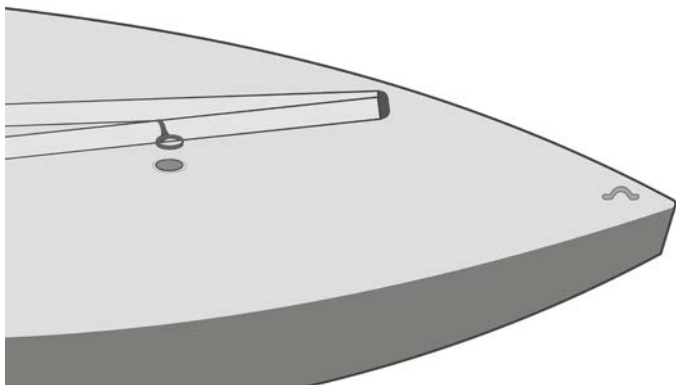
1

Thread the halyard through the hole in the top of the mast.



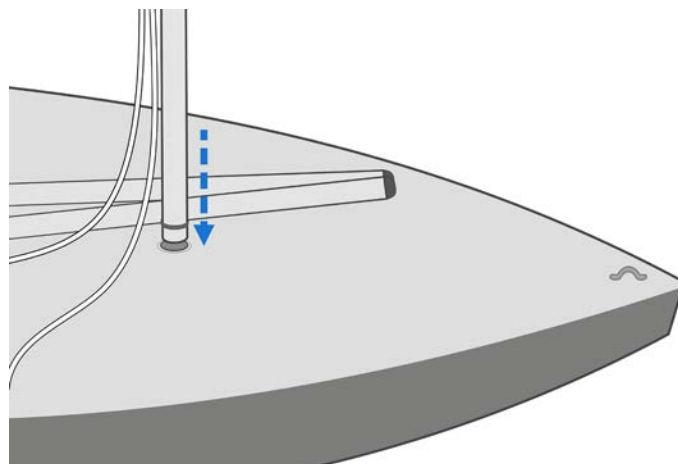
2

Lay the booms and sail on the deck. The booms should lay on the port side (left side when facing the bow) of the mast step (the hole in the bow of the boat). Align the gooseneck, attached to the lower boom, over the mast step.



3

Hold the free ends of the halyard, lift up the mast, and slide the base down through the gooseneck ring and into the mast step. Do not drop the mast into the tube to avoid damaging the mast step.



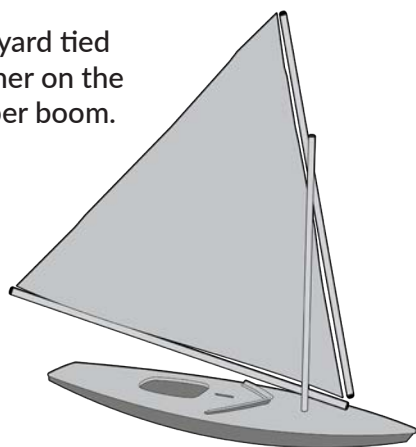
### Step 6: Attach the Halyard

Gather the following tool:

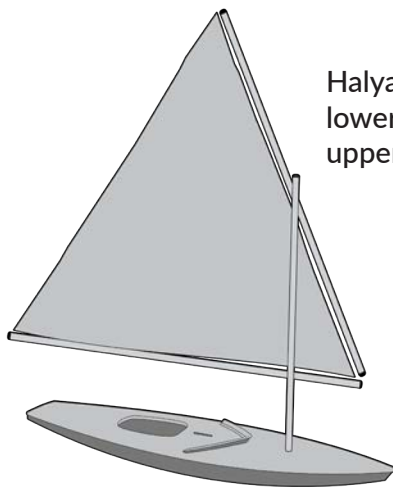
- Electrical tape

- 1 Decide where on the **upper boom** you wish to secure the halyard. If the halyard is tied higher, it will leave less room between the lower boom and the deck once the sail is raised, but the boat will also sail faster. Tying lower will result in the opposite. For novice sailors, it is recommended to secure the halyard between the 5th and 6th sail ring counting **down from the head of the sail**.

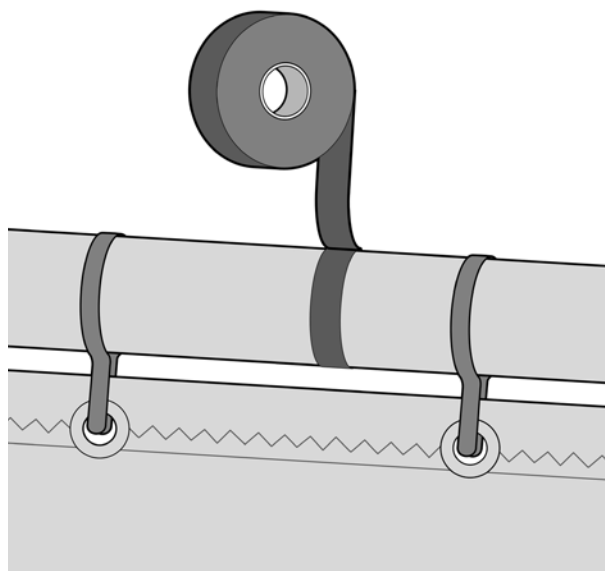
Halyard tied higher on the upper boom.



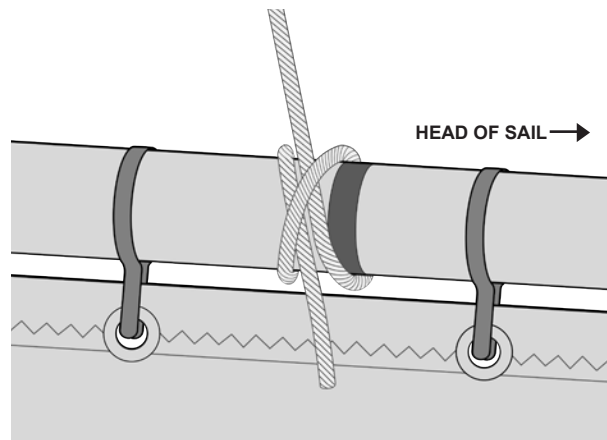
Halyard tied lower on the upper boom.



- 2 Place three wraps of electrical tape around the upper boom in the location where you will secure the halyard. This will prevent the halyard from slipping up to the next sail ring.



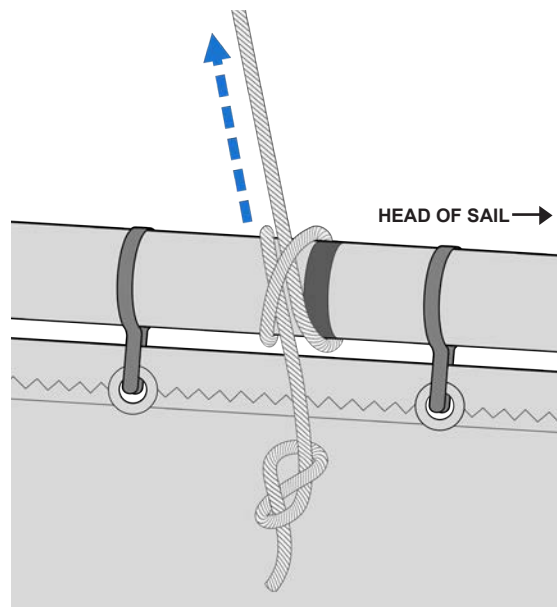
- 3 Just **below** the electrical tape, tie the halyard to the upper boom with a clove hitch.



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- 4 Tie a figure 8 knot in the end of the tail to act as a stopper and prevent the clove hitch from coming undone.



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[FIGURE 8 KNOT](#).



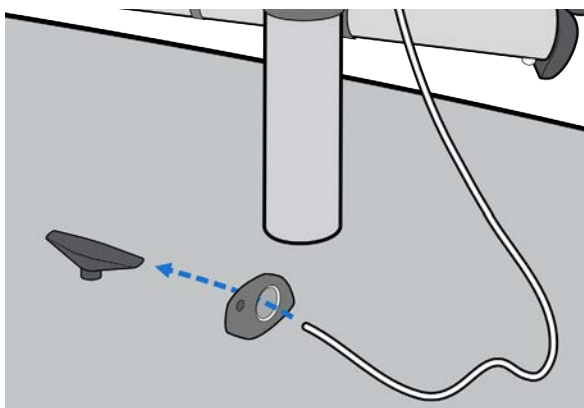
## Step 7: Raise the Sail



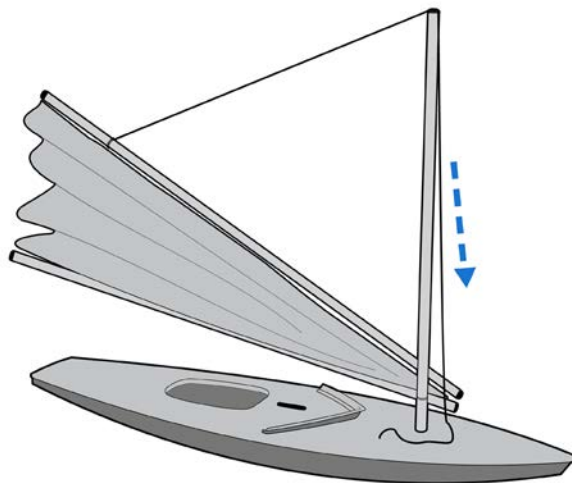
### IMPORTANT!

Make sure that your boat is head to wind (the bow is pointing into the wind) and that the area is free from any obstacles that the rig might hit in case the wind changes and the sail swings unexpectedly.

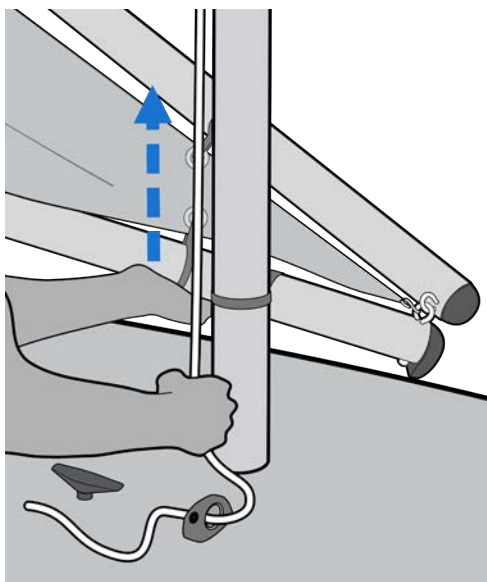
- 1 Lead the tail end of the halyard through the halyard fairlead on the deck, in the direction of the stern.



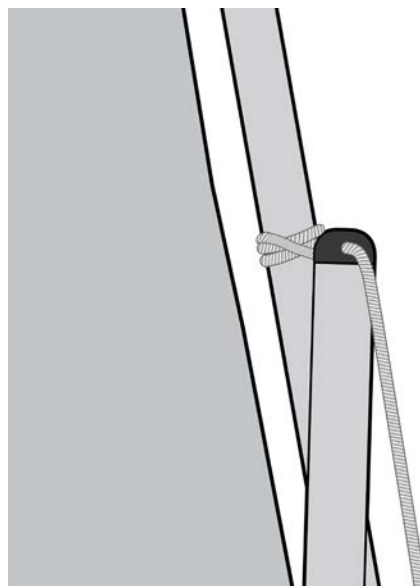
- 2 Pull down on the halyard to start raising the sail.



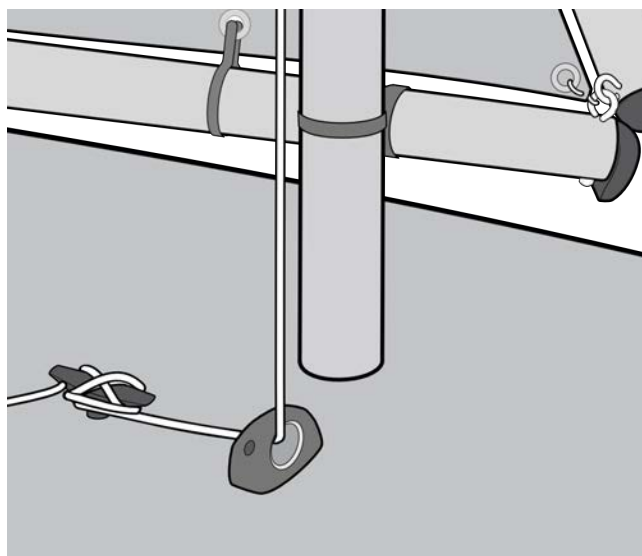
- 3 If the sail is not going up, you may need to lift the lower boom near the gooseneck with one hand while pulling on the halyard.



- 4 Continue pulling on the halyard until the clove hitch used to secure the halyard to the upper boom is right against the top of the mast.



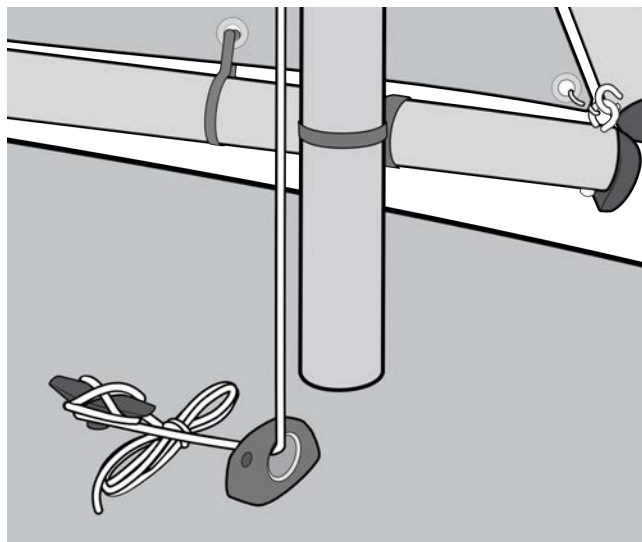
- 5 Tie off the halyard to the halyard cleat (on the deck behind the halyard fairlead) using a cleat hitch.



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[CLEAT HITCH.](#)



- 6 Coil the remaining tail of the halyard and place it under the taught section of the halyard on the deck just in front of the halyard cleat. This is to prevent it from dragging in the water.

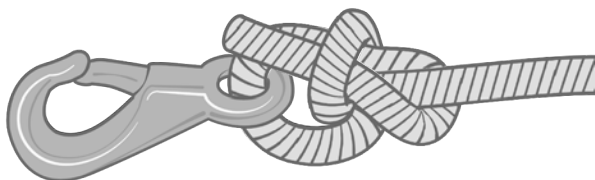


## Step 8: Rig the Mainsheet

Gather the following parts:

- Mainsheet – bag 2
- Mainsheet snap shackle – bag 4

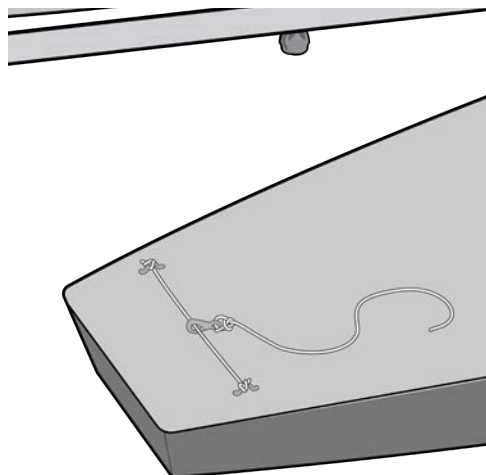
- 1** Secure the mainsheet snap shackle to one end of the mainsheet with a bowline knot.



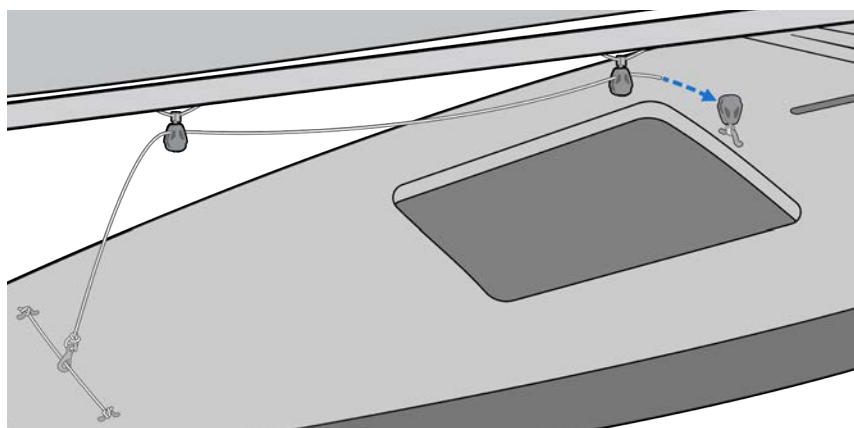
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- 2** Snap the mainsheet snap shackle onto the bridge.

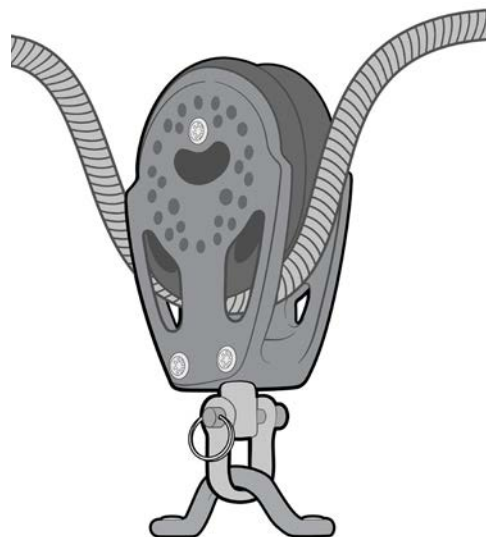


- 3** Feed the free end of the mainsheet through the two boom blocks, starting with the one closest to the stern (back of the boat), and bring the line down toward the mainsheet ratchet block.

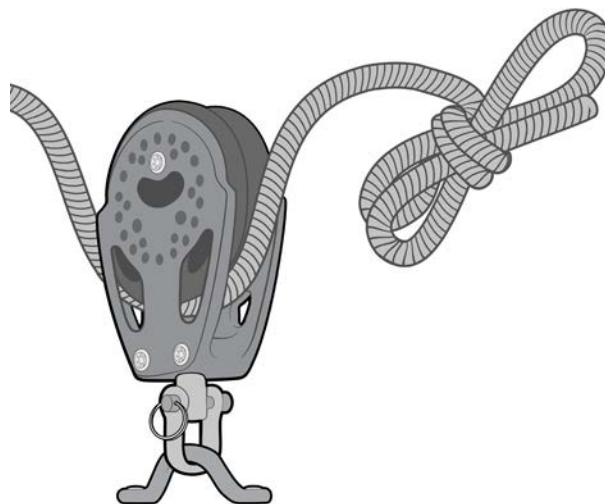


Note: The mainsheet ratchet block should only turn in one direction and make a ratchet or clicking sound. If turning the wheel does not make a sound, locate the lever and switch it to the ratchet position.

- 4 Feed the mainsheet through the mainsheet ratchet block in the direction that makes a ratchet sound.



- 5 Tie a figure 8 knot at the end of the mainsheet.



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[FIGURE 8 KNOT.](#)

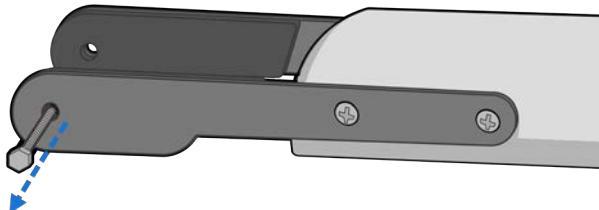


### Step 9: Attach the Tiller to the Rudder

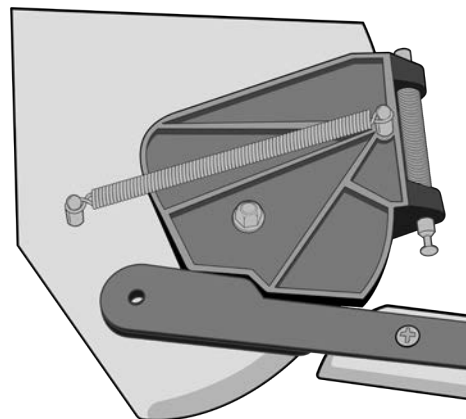
Gather the following parts and tools:

- Tiller assembly
- Rigged rudder
- 7/16" socket wrench
- 7/16" combination wrench

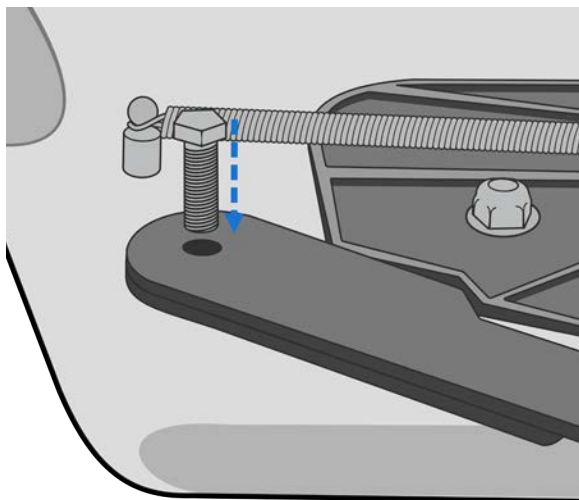
- 1 Remove the tiller bolt from the end of the black tiller straps at the end of the tiller.



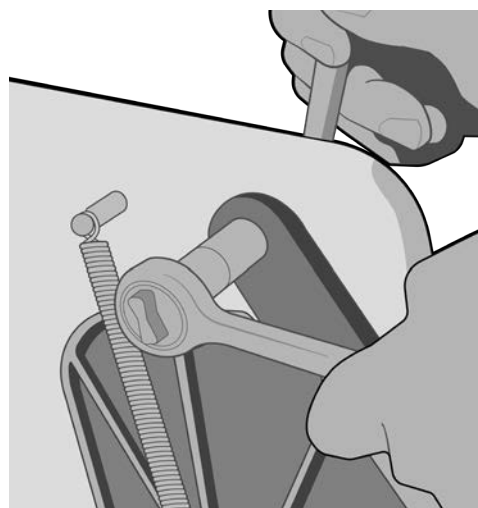
- 2 Slide the rudder between the tiller straps on the end of the tiller, placing the spacers in between on each side to protect the rudder. Align the notches on the tiller straps with the notches on the rudder cheek and the holes in the tiller straps and spacers with the hole in the rudder.



- 3 Insert the bolt through the aligned holes in the tiller straps and rudder.



- 4 Screw the lock nut in place using a 7/16" socket wrench and a 7/16" combination wrench.



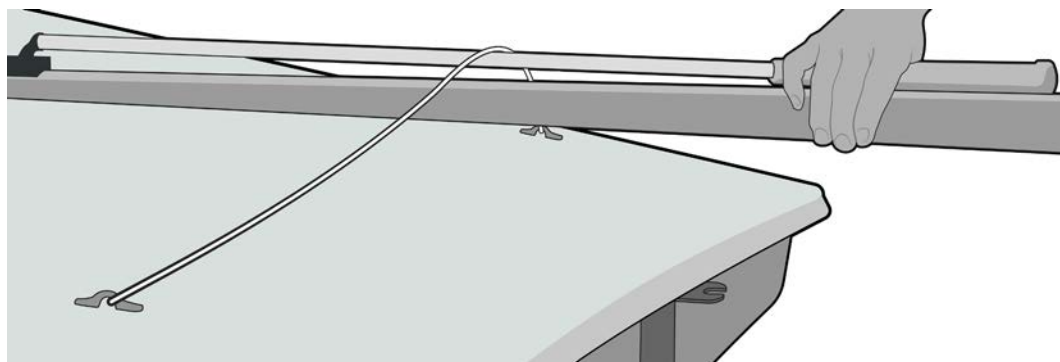
**Note:** The nut should be screwed on far enough for at least one thread to travel completely through the lock, but not so tight that you can not rotate the tiller up and down on the rudder.

### Step 10: Attach the Rudder

Gather the following parts:

- Rudder and tiller (connected in the previous step)

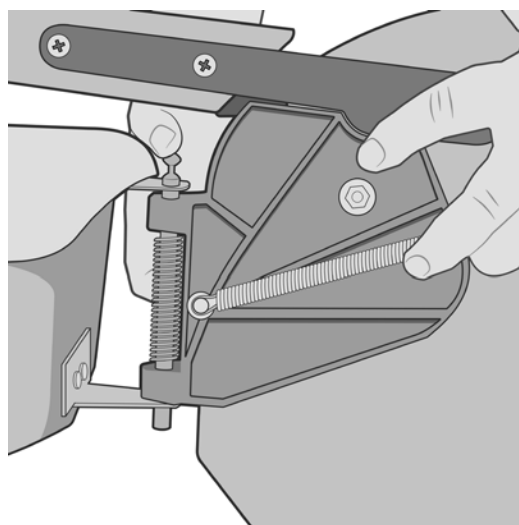
- 1 Slide the tiller and extension underneath the bridle



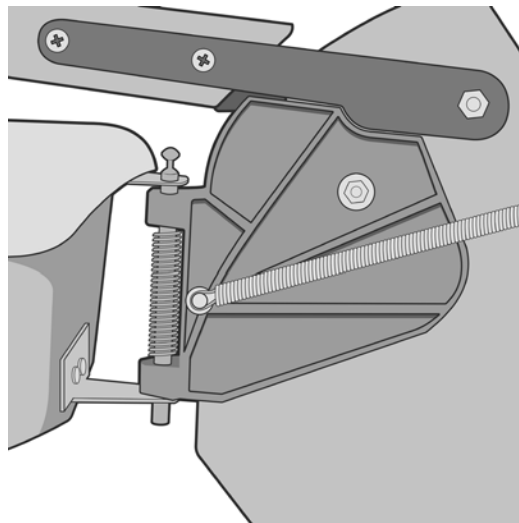
**Note:** The tiller extension will need to be extended at some point so that it can be easily reached from the cockpit. This is possible to do even after the rudder is attached, although it is easiest to do so before the next step.

- 2 Press down on the top of the pintle pin to compress the spring and expose the lower notch. Keeping the pin compressed, align the two notches of the pintle pin with the two notches in the gudgeon (metal bracket fitting attached to the stern of the boat).

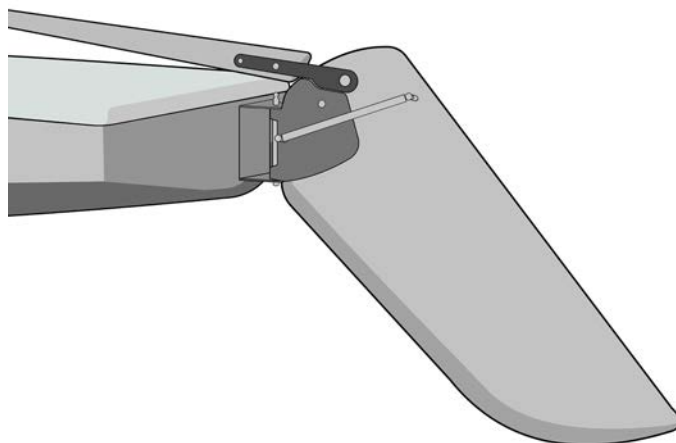
Slide the pintle pin into the gudgeon. The two tabs that the pintle pin is installed through on the rudder cheek will fit inside the gudgeon bracket.



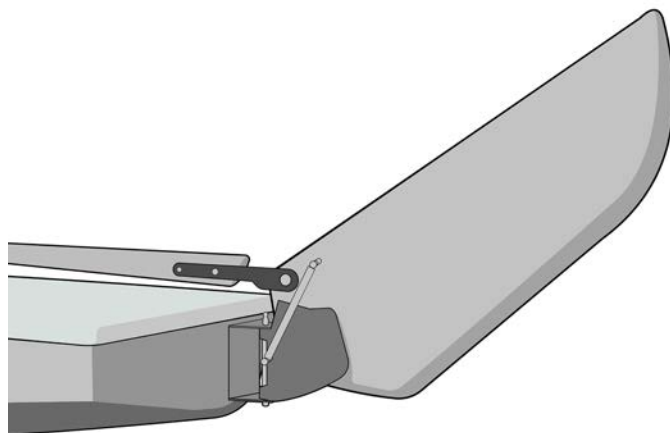
- 3** Release the pin, and the rudder should now be securely attached to the boat.



- 4** Make sure the rudder can easily pivot from side to side.



- 5** Leave the rudder in the kicked up (raised) position before launching.



## Step 11: Secure the Daggerboard

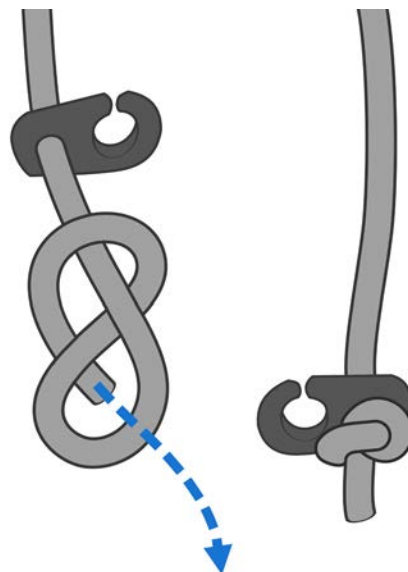
Gather the following parts:

- Daggerboard
- Daggerboard shock cord – bag 2
- Brummel hooks (2) – bag 4

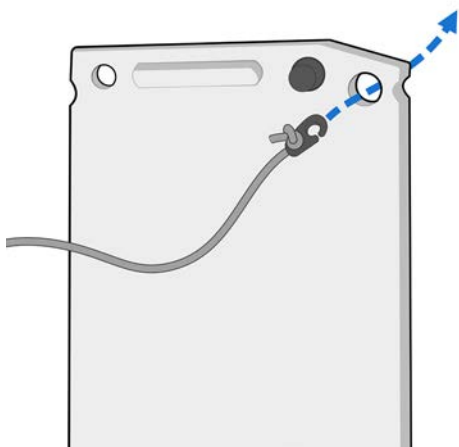
- 1** Thread the brummel hooks onto each end of the daggerboard shock cord and secure with a stopper knot.



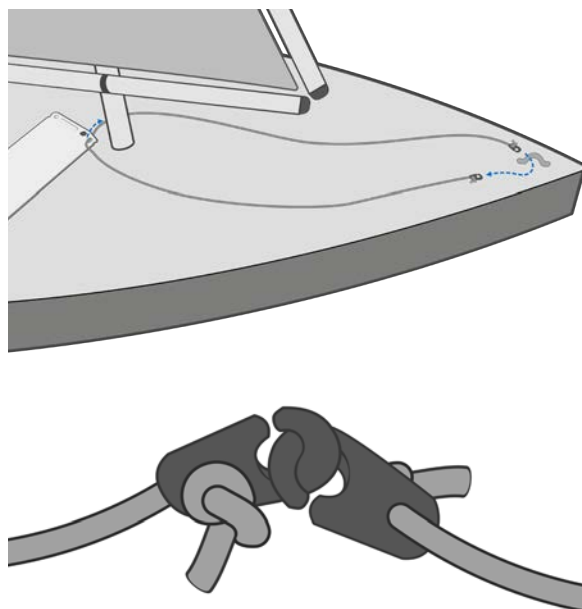
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- 2** Thread one of the brummel hooks through the largest hole in the daggerboard.

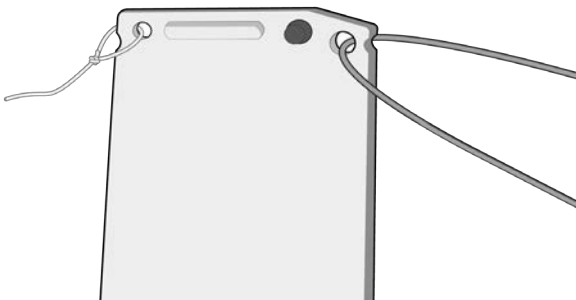


- 3** Lead one end of the shock cord around the mast and through the bow handle and back until you connect the two brummel hooks.

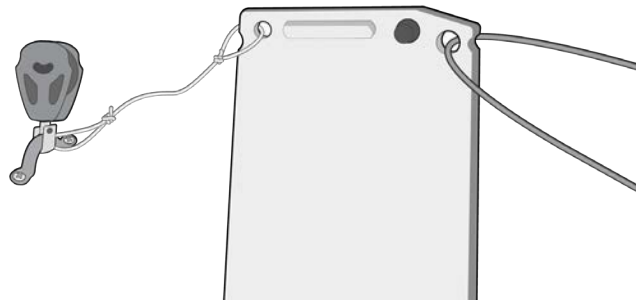


Optional: In the event that you capsize, if the daggerboard falls out and the brummel hooks come undone, the retaining line will keep the daggerboard from floating away.

- 4 Thread the daggerboard retaining line through the rear hole of the daggerboard and tie a bowline knot.



- 5 Thread the free end of the daggerboard retaining line through the mainsheet block eyestraps and tie another bowline.



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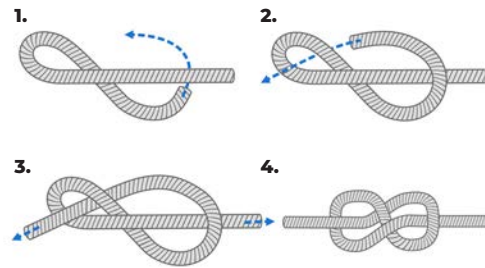


### Knot Guide

#### Figure 8 Knot



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#### Half Hitch



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SINGLE HALF HITCH



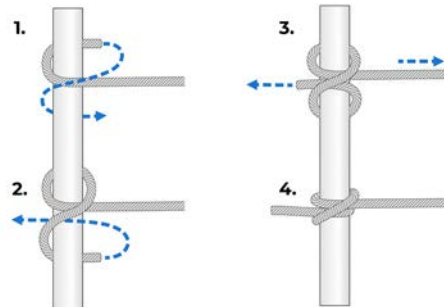
TWO HALF HITCHES



#### Clove Hitch



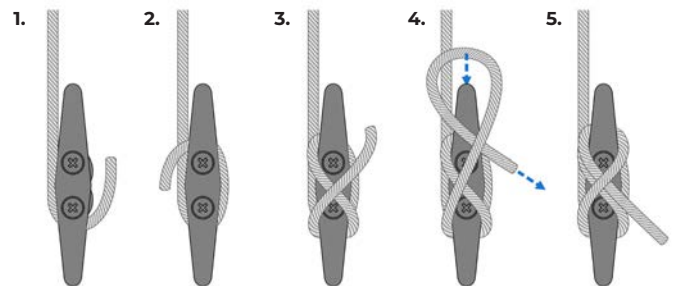
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[CLOVE HITCH](#).



#### Cleat Hitch



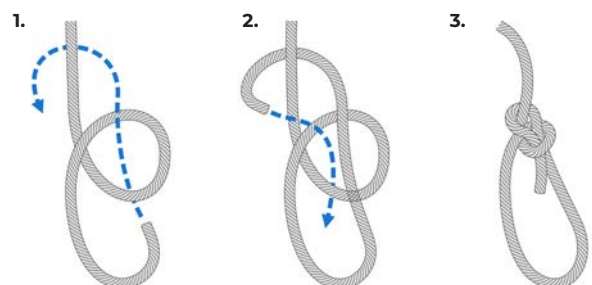
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[CLEAT HITCH](#).



#### Bowline Knot



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[BOWLINE KNOT](#).



## Glossary of Terms

**Aft** – at or towards the stern of the boat.

**Bailer** – a vessel or device used to remove water from the boat.

**Block** – a pulley used for lines that control the sail.

**Boom** – a spar that supports the foot of the sail.

**Bow** – the front of the boat.

**Bridle** – a line, aft of the cockpit, to which the main-sheet is attached.

**Cleat** – a fitting with two horns that is used to secure a line.

**Clew** – the bottom back corner of the sail (furthest from the mast).

**Cockpit** – a lower area of the deck where the crew can sit or stand.

**Deck** – the mostly flat area on top of the boat's hull.

**Fairlead** – a fitting that is used to guide a line so that there is minimal friction and chafing.

**Foot** – the bottom edge of the sail.

**Gooseneck** – a fitting which connects the boom to the mast.

**Gudgeon** – a fitting attached to the stern into which the pintles of a rudder are inserted.

**Halyard** – a line used to raise and lower a sail.

**Head** – the top corner of the sail.

**'Head to wind'** – when the bow of the boat is pointed in the direction the wind is blowing from.

**Hull** – the body of the boat, excluding the mast, sail, rigging and rudder.

**'Into the wind'** – when the bow of the boat is pointed in the direction the wind is blowing from.

**Leech** – the back edge of the sail.

**Leeward** – in the direction to which wind is blowing.

**Luff** – the front edge of the sail.

**Mast** – the vertical spar that supports the sail.

**Mast Step** – the fitting or hole into which the foot of the mast is set.

**Mainsail** – a sail which is rigged to the mast.

**Mainsheet** – a line attached to the boom, which is used to control the mainsail.

**Outhaul** – a line attaching the corner of the sail to the boom.

**Port** – the left-hand side of the boat, when facing the bow.

**Rigging** – lines used to support and control the sail.

**Rudder** – a vertical blade attached to the stern which is used to steer the boat.

**Rudder Cheek** – a piece which envelops the rudder blade and allows it to hinge into a kicked-up position.

**Rudder Pintle** – a metal extension on the rudder that incorporates a pin, which slides into the gudgeon.

**Sheet** – a line that is used to control the clew(s) of a sail.

**Starboard** – the right-hand side of the boat, when facing the bow.

**Stern** – the back of the boat.

**Stopper knot** – a knot that is used to prevent a line from sliding through a fitting or loosening.

**Tack** – the bottom, forward corner of the sail.

**Tiller** – a handle attached to the rudder, which is used to pivot the rudder from side to side.

**Tiller extension** – a pole attached to the tiller that extends it's reach.

**Windward** – in the direction from which the wind is blowing.