

Rigging Guide
Hartley 15

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*Thank you for choosing the **Hartley15** sailing dinghy,
We really enjoyed designing & making it, now
we hope you thoroughly enjoy sailing it!*

To help you on your way we have put together this rigging guide. You can find additional information in the H15 owners manual, on our web site www.hartleyboats.com & on our facebook pages.

If you have any rigging difficulties or you need more help figuring it out just drop us a line or give us a call, the Hartley Boats Team are here to help.

Hartley 15

H15

Rigging

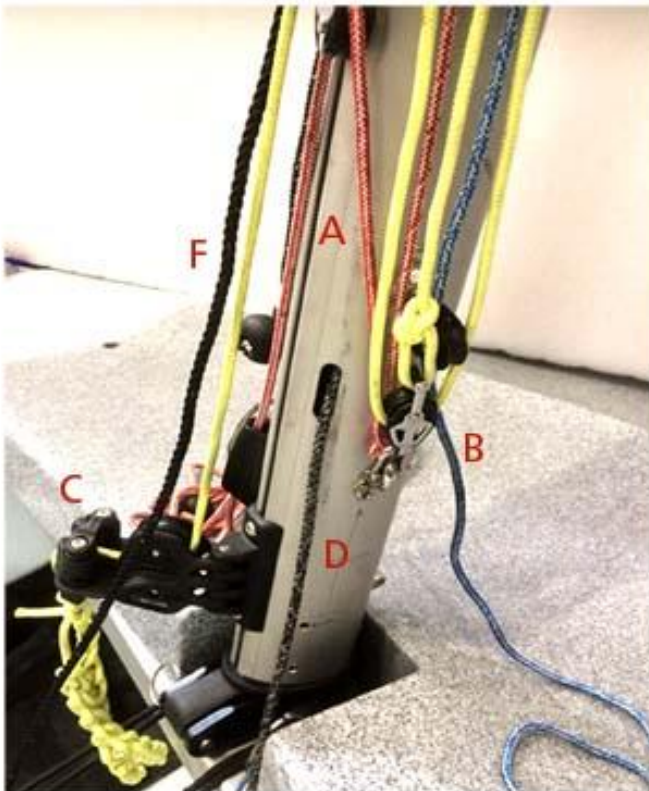
Guide



Have fun with your Hartley15, but don't forget to check for a suitable launch & recovery area before you set out & that there are no overhead lines that your mast could strike. Be sure to check the weather forecast & that the area is suitable for dinghy sailing. Always let a responsible third party know where you are sailing & when you intend to return, check that safety cover is available. Be sure your boat is in good working order every time you prepare to use it & always wear appropriate clothing & a suitable flotation device.

Hartley 15 / H15

- 1 X Mainsheet Hoop
- 2 X M5 Bolts for Mainsheet hoop fairlead (fitting required)
- 1 X Boom - part fitted
- 1 X Gnav strut
- 1 X 5mm retractable painter 2m
- 1 X Rudder assembly
- 4 X Toe straps
- 1 X Foredeck with storage locker
- 1 X Bowsprit : Gennaker pole
- 1 X Mainsail
- 4 X Mainsail battens
- 1 X Jib
- 1 X Gennaker (AKA: Asymmetric Spinnaker or Kite)
- 1 X Gennaker chute bag
- 1 X Mast - part fitted
- 3 X Mast float system (recommended optional accessory)



Hartley 15 / H15 Mast Lines

A	Jib Tension line (attach to wire strop on Jib halyard)	4mm	Red
B	Cunningham downhaul	4mm	Blue
C	Gnav line (kicker)	4mm	Yellow
D	Gennaker halyard	4mm	Black / white
E	Main halyard	5mm	Black / White
F	Jib halyard	4mm	Black 3 Strand
G	Gennaker pulleys (2)		

Hartley 15 / H15 Mast Spreaders

- 2 X Spreader Bars
- 2 X Spreader end brackets complete
- 2 X 16mm nuts & bolts
- 2 X 16mm Clevis pin & split rings



Fitting the spreaders:

Slip the spreader arm into the spreader bracket on the mast, rounded edge forward. Bolt through the bracket & the mid point hole in the spreader arm. Set the spreader angle by inserting the clevis pin through the middle hole in the inner line of holes of the bracket and through the back hole of the spreader arm. Repeat for the second spreader.



Fitting the Shrouds to the spreaders:

Locate the shrouds at the T terminals towards the top of the mast. Ensure the T terminals are sitting perpendicular to the mast openings, run the shrouds down past the spreaders to the bottom of the mast to ensure they are clear. Hook the shroud with the spreader end clasp, squeeze the spreader end clasp and insert it into the outboard end of the spreader. lock in place with the clevis pin & split ring. Tape the pin & clasp to prevent the ring catching in the sail.



The RYA recommend the use of a mast head floatation system on training boats to inhibit inversion after a capsize, It is also good practice to use a float system when sailing in shallow water to prevent mast damage.

We recommend using the discreet Hartley mast-float system, It is easy to install and will not interfere with the performance of the sails or the integrity of the mast.

To install the floats simply fit them around the upper section of the mast, beginning approx 10cm above the spinnaker uphaul sheave. Slide 3 floats onto the mast, line the open edges up with the luff groove to allow the mainsail to pass through unhindered, tighten the nylon bolts with 6mm Allen key to keep the floats in place.

Raising the Mast

Raising the mast is a two person operation.

Always check for overhead obstructions before raising the mast. We recommend raising the mast before fitting the mainsheet hoop, this allows the mast to rest on the back of the boat whilst fitting the mast foot into the mast gate & securing it with the pivot pin. Where the mainsheet hoop is already installed the process of fitting the mast requires balancing the mast in position whilst the pivot pin is inserted - this can be precarious & so it is not recommended.



The foot of the mast fits into a gate located on the deck. The gate has a swivel pin to enable the mast to be secured in place as the mast is raised from a horizontal to a vertical position. Raising the mast using the swivel method is recommended.



1. Remove the mast gate pin in preparation for raising the mast.
2. Lift the mast onto the boat with the top of the mast extending over the stern.
3. Place the mast foot into the mast gate & secure with the mast gate swivel pin.
4. Before raising the mast check that all of the lines and stays are led to the bottom of the mast & that they are not twisted, check the T terminals to ensure correct fit.
5. Attach the shroud to the shroud plates & then attach the shroud plates to the location points on the side decks.
6. Lead the forestay to the bow of the boat with one person attending to it there.
7. The mast lifter gets into the boat forward of the pivot point, standing close to the mast, carefully raising the mast aided by the forestay attendant, do not allow the mast to twist or lean to one side.
8. Once the mast is erect secured the forestay by temporarily tying it around the bow bar.

In confined spaces with insufficient room to use the swivel method, it is possible to carefully lift the mast vertically into place & to insert the swivel pin retrospectively.

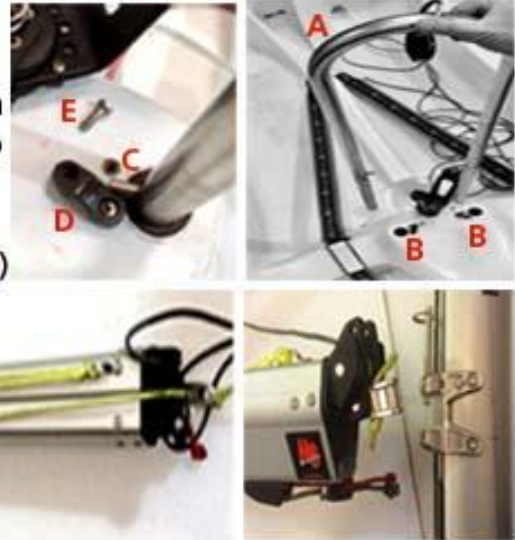
Lift the mast in stages:

1. Lift the mast into the boat.
2. Attach the shrouds plates loosely.
3. Lift the mast foot into the gate.
4. Use an assistant to maintain a firm hold on the forestay to prevent mast sway.
5. Secure the mast foot with the swivel pin.
6. Secure the forestay to the bow bar.
7. Attach shroud plates to the anchor point.



Mainsheet Hoop Assembly

Locate the mainsheet hoop (A) into the holes (B) in the centre of the thwart, push the hoop firmly into place until the location lugs (C) rest against the thwart. Swivel the fastening fairleads (D) over the lugs (C), fasten in place with the M5 20mm bolts (E) tighten all 4 bolts to secure the loop in place.



Fitting the Boom & Gnav

Unpack the Boom and the Gnav.

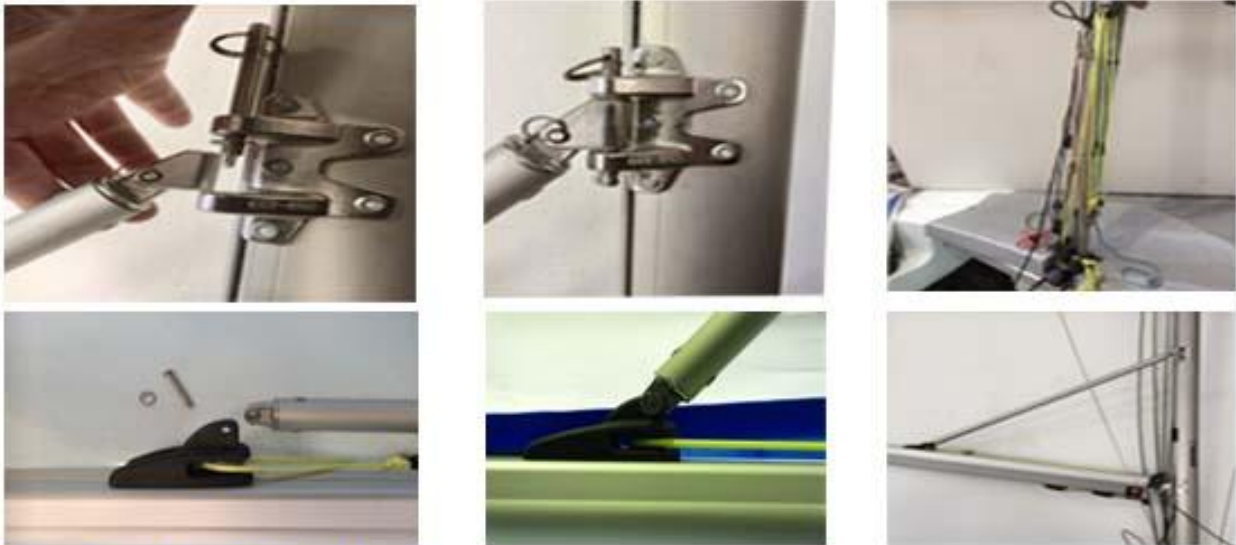
Check the orientation & fit the Gnav on the boom using the clevis pin

Attach the boom to the mast at the gooseneck with the drop nose pin

Attach the top end of the Gnav to the mast with pin through the swivel

Tie the Yellow Gnav line to the Yellow Cascade pulley system

Attach the mainsheet to the Hoop & to the boom.



Reeving the Mainsheet

Attach the mainsheet to the larger block on the top of the hoop with a stopper knot through the middle of the block, then feed the sheet through the aft boom block, then through: the larger loop block, the forward boom block, the smaller loop block, the ratchet block & finally through the cleat as shown. Tie a stopper knot in end of sheet.



Centreboard & Rudder

The centreboard comes pre-installed, it has a down-haul strap (a) & a retaining hook (b). The hook is helpful for keeping the centreboard in the down position when sailing off the wind. In a planing boat the centreboard is inclined to pop up when you are accelerating under the gennaker which can make the boat less stable & more difficult to handle. We recommend using the hook to keep the centreboard down in medium & heavy winds.



The tiller and rudder stock come as one piece (A). The rudder blade (B) is fitted into the rudder stock with the rounded edge forward & held in place with the wing nut & bolt (C). There are uphaul (D) & a downhaul (E) lines attached to the blade which need to be led around the cross bars (F) at the back of the stock & then tied to the small turning blocks on the corresponding uphaul (D1) & downhaul (E1) lines on the tiller (F). The complete Rudder assembly fits on the transom where it is held securely in place with a large clevis pin (G) & split ring (H). The uphaul can be used to keep the blade raised during launch & recovery, it is also very helpful to aid shallow water entries and exits. The downhaul is employed to keep the rudder blade fully down whilst sailing.



The Hartley 15 comes ready to accommodate an outboard engine mounting pad to facilitate the addition of an outboard engine should you wish to add this accessory to your H15 kit from new or at any time in the future.



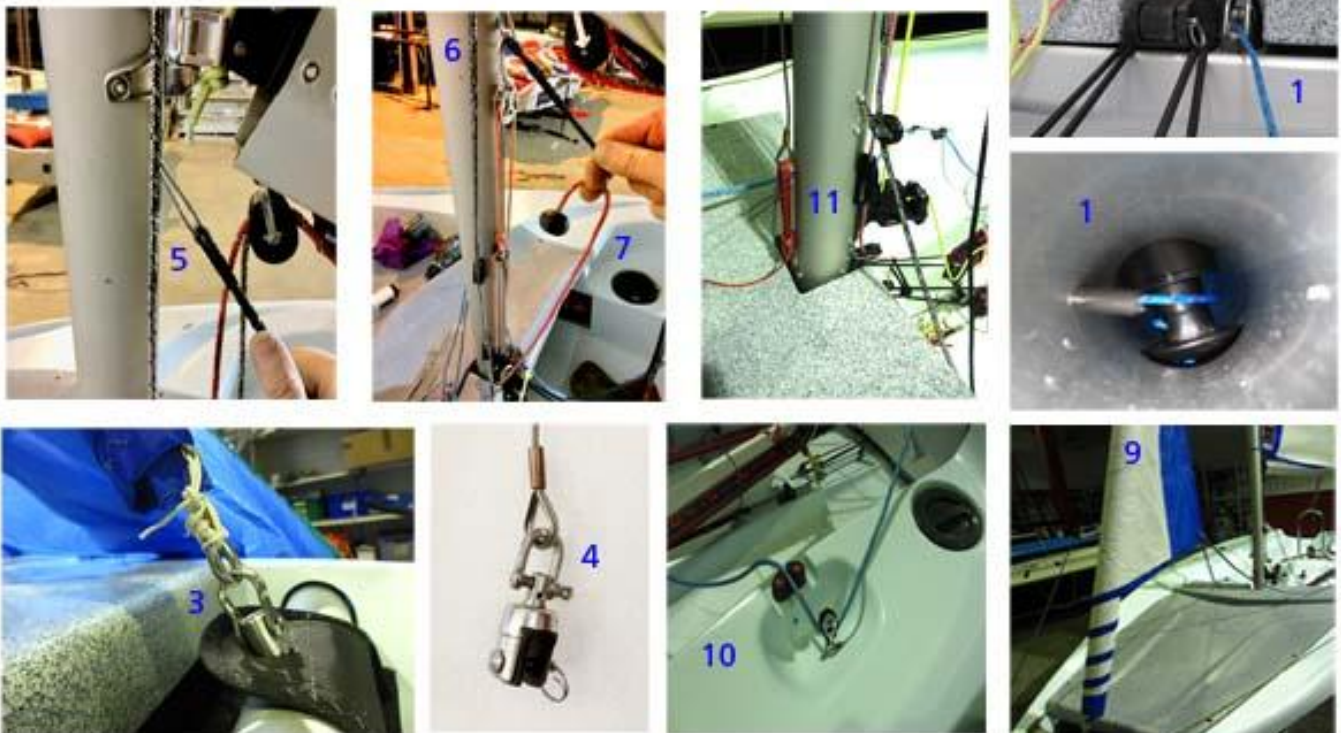
Rigging & Hoisting the Sails

Fore ease & safety turn the boat "head to Wind" before rigging & hoisting the sails.

Attaching the Jib

1. Before attaching the Jib check that the furling line is fully wound onto the furling drum located within the bow bar. Check the drum inside the bow bar. To rewind the furling drum simply release the line from the cleat beside the mast foot, then turn the swivel in the centre of the bow bar. Once the Furler is fully loaded, recleat the line.
2. Remove the Jib from its bag and unroll it fully. Locate & unhook the Jib Sheets.
3. Attach the Jib foot to the swivel on the bow bar using a shackle.
4. Attach the head of the jib to the swivel on the end of the wire jib halyard.
5. Raise the jib by pulling the 3 strand black halyard found coming out of the mast just below the boom, keep pulling until the wire strop appears,
6. Hook the jib tension pulley hook (on red rope) into the strop, check that the black rope is not caught under the hook. Tidy the Black line & store in the net pocket.
7. Tension the Jib halyard using the Red rope rig tensioning system.
8. Find the mid point of the Jib sheets attach to Jib with a loop fastening.
9. Furl the jib keeping slight tension on the sheets, cleat the furling line.
10. Pass the jib sheets through the jib fairleads and join the ends together
11. When the Jib halyard is tensioned the forestay can be un-tied from the bow bar & re-tied to the "P" clip on the front of the mast, this prevents it from getting tangled with the jib when the furling system is used.

Remember you must re-attach the forestay before dropping the jib when de-rigging.



Attaching the Mainsail

The Hartley 15 mainsail has 4 battens which need to be inserted before the first rig. The top batten has an adjustable tension strap, thread the top batten into the top pocket, tension lightly & secure with the Velcro strap. Insert the other battens into the remaining standard pockets, push at end to force the outer closing to flip over to secure the battens in place.



Hoisting the Mainsail

Holst the mainsail from the port side of the boat as the Gnav is attached to the Starboard side of the boom. Check again that the boat is head to wind before you hoist. Locate the top end of the black halyard, check aloft to ensure it is not twisted or wrapped around any other lines. Attach to the sail head using a loop over bobble (A). Insert the boltrope at the head of the sail into the luff groove on the mast track (B). Pull the lower end of the main halyard through the pulley block (C) to raise the sail up the mast track, keep an eye to ensure it doesn't snag on the gnav or spreaders, it helps if a second person guides the luff rope into the luff groove. When the sail is fully up cleat the halyard (D), tidy the halyard & stow it in the Genneker net pocket.



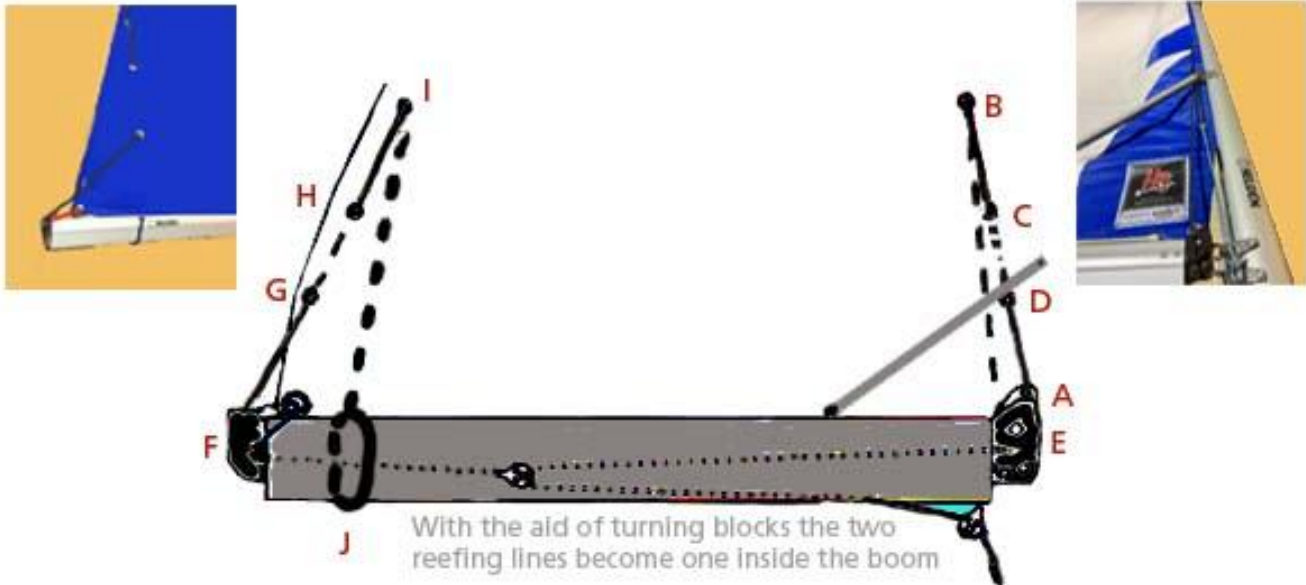
Mainsail Clew & Tack attachment

Release the outhaul (M) on the inboard end of the boom, move to the back of the boat & insert the "slug" (N) at the clew of the sail into the opening in the outboard end of the boom track. Take the Red outhaul line (O) from the end of the boom, thread it through the clew then back to the locking grip in the boom end, jam the knot in the grip (P). Locate the Blue cunningham at the mast, thread it through the cringle (eye) in the mainsail then insert the end knot into the mast track (Q) just below the gooseneck. Attach the retaining loop to the tack (R).

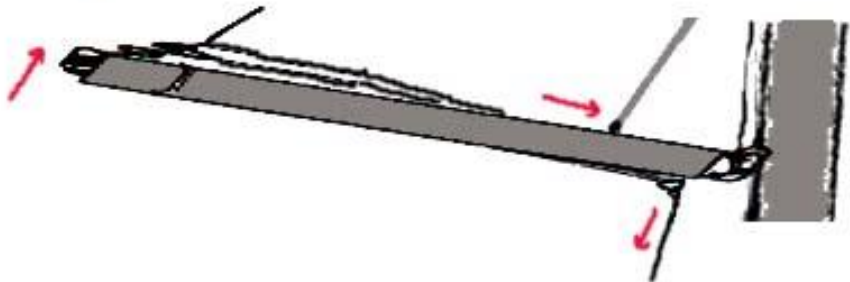


Rigging the reefing system

At the mast end of the boom, locate the Black reefing line **A**, pass it first through the upper reefing cringle **B** from port to starboard, then down through the 2nd cringle **C** from starboard to port & back to the starboard side through the lower cringle **D**, finish by securing the knot in the boom notch **E**



Take the Black reefing line **F** from the outboard end of the boom, thread it through the lower cringle **G** from the starboard to port side, then back through the 2nd cringle **H** & on up to the 3rd **I**, from there bring it down to the boom & tie it in a loop around the boom with a bowline **J**.



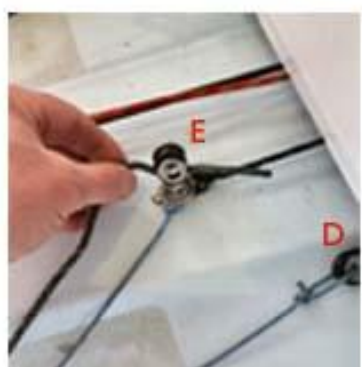
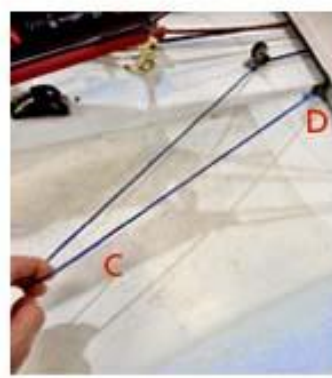
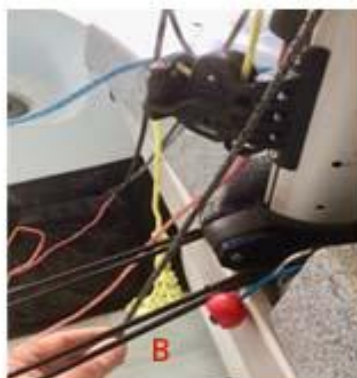
Reefing

1. Ease the Sheet
 2. Ease the Gnav
 3. Pull the Black reefing at the mast end of the boom, this gathers the outboard sail leech area & causes the boom to angle upwards & the Gnav to slide forward.
 4. Ease the Main halyard & then continue pulling the reefing line to gather the luff and to return the boom to the horizontal position.
 5. Secure the reefing line in the cleat once the tack & clew are fully gathered.
 6. Check & adjust the halyard if necessary.
 7. Tension Gnav.
- Resume sailing

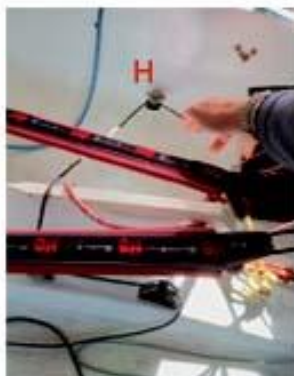


Rigging the gennaker halyard - - uphaul / downhaul system

The gennaker halyard when rigged to the kite forms a continuous loop which serves both as an uphaul for holisting & a downhaul for dropping the kite.



1. Locate the Black/White halyard line (A) near the foot of the mast, take the end down between the 2 toe strap elastics to the spring block (B) in the centre of the floor below, thread the line through the block from the back to front.
 2. Use the retrieval line (C) to retrieve the block (D)
 3. Thread the line through the spring block(E) & then through block (D) taking care not to entangle with other lines.
- NB. block D has a permanent thin line attached so that the block can be retrieved from under the hatch after de-rig.
4. Bring the line through the deat (F) & then through the spring block (G) on the top of the centreboard case starboard side from there bring it across to block (H) on the port side deck near to the end of the gennaker sock.
 5. Pass the line up the gennaker sock to the chute with the aid of a long batten((J).
 6. Temporarily attach the downhaul to the bow bar in preparation for attaching to kite.



Attaching the Gennaker (aka "Kite" & Asymmetric Spinnaker)

The Kite is stowed in a chute that extends from the bow under the foredeck back to the cockpit in a long net bag. The Chute bag keeps the kite tidy & aids launch & recovery.

The kite has 3 corners which are colour coded:

Yellow is the Head and attaches to the Grey/White gennaker halyard.

Green is the Tack which attaches to the bow sprit with the short Black sprit line.

Red is the Clew to which you attach the Grey/White sheets.



Attach the halyard to the head (Yellow) of the sail with a bowline, check aloft to ensure halyard is not tangled in other lines. Raising the kite a small bit at this stage will help you to more clearly identify how the tack and the clew are attached.

Attach the short line on the end of the bow sprit to the tack (Green) with a bowline, the gennaker halyard system is designed to hoist / drop the kite and to launch / retrieve the bow sprit simultaneously as a unified system.

Locate & untie the gennaker downhaul at the bow bar, this is the same line & other end of the halyard, thread the downhaul through the lower patch of the kite, from the inside to the outside, then bring it up to the higher patch & tie with a bowline.



Attach the sheet to the Clew (Red) with a figure of eight stopper knot, run the sheet, around the outside of the near-side shroud & through the ratchet block on the same side, thread it in the direction of arrow, bring the sheet across the boat to the other ratchet block & thread it through against direction of the arrow, next lead the sheet outside the shroud on that side & forward of the jib, lead it inside the downhaul & finish with a stopper knot at the clew.

With the boat head to wind carefully hoist the Kite fully to check that nothing is tangled, the ratchet blocks should click when the sheets are pulled in, the kite should come around the front of the jib unhindered in a gybe. Drop the kite to ensure it comes down & stows in the chute unhindered.

Take care when doing a dry hoist / drop not to snag the kite in the trolley or on any sharp objects. A second person may be required to hold the boat steady if there is any wind about. It is good practice to check the kite & the hoist / drop before every sail.



Glossery of useful Sailing terms

Bow: Front of the boat
Stern: Back of the boat
Hull: Body of the boat
Deck: Top side of boat
Fore: Front or Forward
Foredeck: Deck at the front
Aft: Back area or rearward
Transom: The back edge / side of the boat
Thwart: Centre structural support & seat
Gunwale: The outermost edge of the boat
Mast: Vertical spar support for sail
Forestay: Wire supporting the mast to front of boat
Shrouds: wire supports for mast on both sides
Spreaders: Horizontal arms on the mast to guide shrouds
Boom: Horizontal spar at bottom of sail
Mainsail: The main sail - supported by mast & boom
Luff: The forward edge of the sail
Leech: The trailing edge of the sail
Sail Foot: The bottom edge of a sail
Sail Head: The top corner of a sail
Sail Tack: Forward lower corner of sail
Sail Clew: Corner of sail where the sheets attached
Battens: Thin stiffening rods in the sail to support the leech
Jib / Genoa: The front sail
Gennaker/Kite/Asymmetric Spinnaker: Lightweight downwind sail
Bow Sprit / Pole: Pole projecting from bow to which kite attached
Reef: Method of reducing sail area
Sheet: Rope to trim sails - pull it in & out
Halyard: Rope used to hoist & drop sails
Painter: Tow rope / bow tie rope
Cleat: Fitting for securing rope
Mast foot: Bottom of the mast
Mast step: Fitting in boat into which mast sits
Gnav: System to tension mainsail - attached to mast & boom
Cunningham: Line for tightening upper edge of sail
Outhaul: Tensioning line at foot of sail - runs along boom
Rudder: Blade used for steering
Tiller / Tiller extension: Handle to adjust rudder
Gudgeon: Fitting to attach rudder to boat
Centreboard: Central blade to aid lateral stability
Burgee: Wind direction indicator
Figure of Eight: A stopper knot - used at ends of lines
Bowline: A very useful non slip loop attachment knot



Notes Page

