

Laser BAHIA



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RIGGING MANUAL

Bahia Rigging Instructions

The Bahia rigging instructions are a guide to rigging your boat. Due to production supplies certain parts may be different from those shown in description, colour, and specification. Performance Sailcraft Europe reserves the right to change specifications without prior notification.

LASER CENTRE

Options, accessories and spares are available from Laser Direct +44 (0) 1327 841610

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Safety Afloat

This instruction manual is not a guide to sailing your craft and it should not be considered suitable for the task of learning to sail a boat. Please read the manual before rigging and sailing your Laser Bahia.

Before you go sailing:

- Check you are wearing suitable clothing and safety equipment for the conditions and time of year.
- Always wear a buoyancy aid or life jacket
- Make sure a third party knows where you are sailing and how many there are of you.
- Check the weather forecast
- Check the time of high and low tides if applicable.
- Seek advice of local conditions if sailing in a new area.
- Always check the condition of your craft before setting off.
- A sailor's safety knife should be carried on board.
- **Check for overhead cables when rigging, launching and recovering.**

On the water:

- Conform to the sailing rules of the road.
- Look out for changing weather conditions.
- Never sail beyond your ability or that of your crew. Ensure that you and your crew can cope with any changes in the wind conditions
- Understand and be competent in the sailing skills and righting techniques.

Important information

There are three hatches and one transom drain bung on the Laser Bahia, these must all be checked prior to launching every time to ensure that they are water tight and fit correctly:



1. Starboard side (right) on the foredeck recess forwards of the main beam

2. Centre console area between the hoop. This is a watertight compartment for keys, mobile, wallet etc and is not part of the buoyancy of the boat



3. Aft cockpit.

4. Transom drain bung must also be checked prior to launch

Example of **INCORRECT** hatch fitment:



(Optional Extra)



WARNING: This mast head floatation device is only an aid to buoyancy of the masthead. In the event of a capsize of your sailing craft, it may not stop the total inversion of your craft and should not be relied upon to do so. Performance Sailcraft Europe Limited cannot accept any liability in such a case.

Performance Sailcraft Europe Limited does not guarantee the mast head floatation device's suitability for all circumstances and all types of dinghy. This remains the responsibility of the user / provider. Prior to use in open water the mast head floatation device should be tested with each type of dinghy used.

Glossary

Bow: Front of the boat

Stern: Back of the boat

Fore: Forward

Aft: Rearward

Clew: Back lower corner of a sail

Tack: Forward lower corner of sail

Head: Top corner of sail

Luff: Forward edge of the sail

Foot: Bottom edge of the sail

Leech: Rear edge of the sail

Burgee: Wind direction indicator (usually a small flag)

Batten: A thin stiffening strip in the sail to support the leech

Mast: Main vertical spar supporting the rig/sails

Boom: Spar at the Bottom of the mainsail

Gennaker pole: the Pole, which extends to fly the gennaker tack from.

Cleat: A fitting used for holding /securing ropes

Forestay: The wire supporting the mast at the bow of the boat

Shrouds: Wires that hold mast in boat and supporting the mast from $\frac{3}{4}$ up and out to hull side. Attached with shroud adjuster to shroud anchor point

Lower shrouds: Wires that tie off $\frac{1}{4}$ up mast and shackle to shroud anchor points

Jib: Front sail

Sheet: Rope for controlling the inward/outward position of the sail

Gennaker: Isometric sail hoisted when sailing downwind

Gunwale: The outermost edge of the boat

Gudgeon: Fitting on the transom and rudder used to hang rudder

Cunningham: Purchase system for tightening the forward edge/luff of the sail

Gnav: Purchase system for tightening the rear edge/leech of the sail

Vang: Otherwise known as the Kicking strap, Gnav

Outhaul: Purchase system for tightening the bottom edge/foot of the sail

Halyard: A rope or wire used to lower or hoist sails

Mast Heel: Fitting on the bottom edge/foot of the mast

Mast step: Fitting on the boat where the mast heel/foot of the mast is located

Spreaders: Metal struts placed in pairs to support the mast side ways and control the bend in the mast

Stem fitting: Stainless fitting at the bow which the forestay attaches

Rudder: Blade and attachments used for steering the boat

Maintenance and Service

- Keep the equipment clean by frequently flushing with fresh water. In corrosive atmospheres stainless parts may show discoloration/brown staining around screw holes and rivets, this is not serious and can be removed with a fine abrasive.
- Excess water should be removed from the hull.
- Ropes, rigging and fittings should be checked at regular intervals for wear and tear.
- All moving parts should be lightly lubricated to avoid jamming, i.e., McLube, Dry Teflon or a dry silicone based spray. Do not use Oil.
- Inspect shackles, pins and fittings – tape up to stop snagging, coming undone.
- When refastening screws do not re – use Nylock nuts more than three times.
- Damaged or worn parts should be replaced.
- Sails should be thoroughly washed down with fresh water, dried and stored in a dry place.
- Trailers should be rinsed with fresh water and checked at regular intervals. It is recommended that the trailer be serviced annually.
- Repairs to the polyethylene hull should be undertaken by people with the relevant equipment and skills. Contact Laser Centre for advice.
- UV light will cause fading to some components and fittings, a cover is recommended to reduce the UV degradation.
- **Do not leave the rig under tension when not sailing or during storage.**
- **Your Bahia should only be used in conjunction with the Vago specific Performance Sailcraft gunwale hung launching trolley. The use of any other launching trolley may damage the hull and invalidate your warranty.**
- **The hull should not be left on a pebble beach, as the polyethylene could dent.**
- **Care must be taken to support the hull adequately if storing on racking or similar. Any sustained point loading could permanently dent or distort the hull.**

Sail Number Positioning

It is advised to apply the sail numbers in a dry, clean and wind free environment.

Standard and Sport Sail

1. Lay the sail on a flat surface starboard side up.
2. The numbers on the starboard side are always higher than the port side.
3. Measure 60mm down, from the seam directly below the logo.
4. Mark a line, parallel to the seam.
5. Measure 100mm in from the leech on this line.
6. The first number is positioned 100mm in from the leech and with the top of the number on the line parallel to the seam.
7. The numbers are 60mm apart.
8. Turn over the sail and position the port numbers 60mm below the top seam of the panel below. The numbers are parallel to the seam.



Rigging and raising the mast

1. Unpack the mast from its packaging.



2. Ensure all the halyards are led to the base of the mast and each halyard rope end has a knot tied in it.

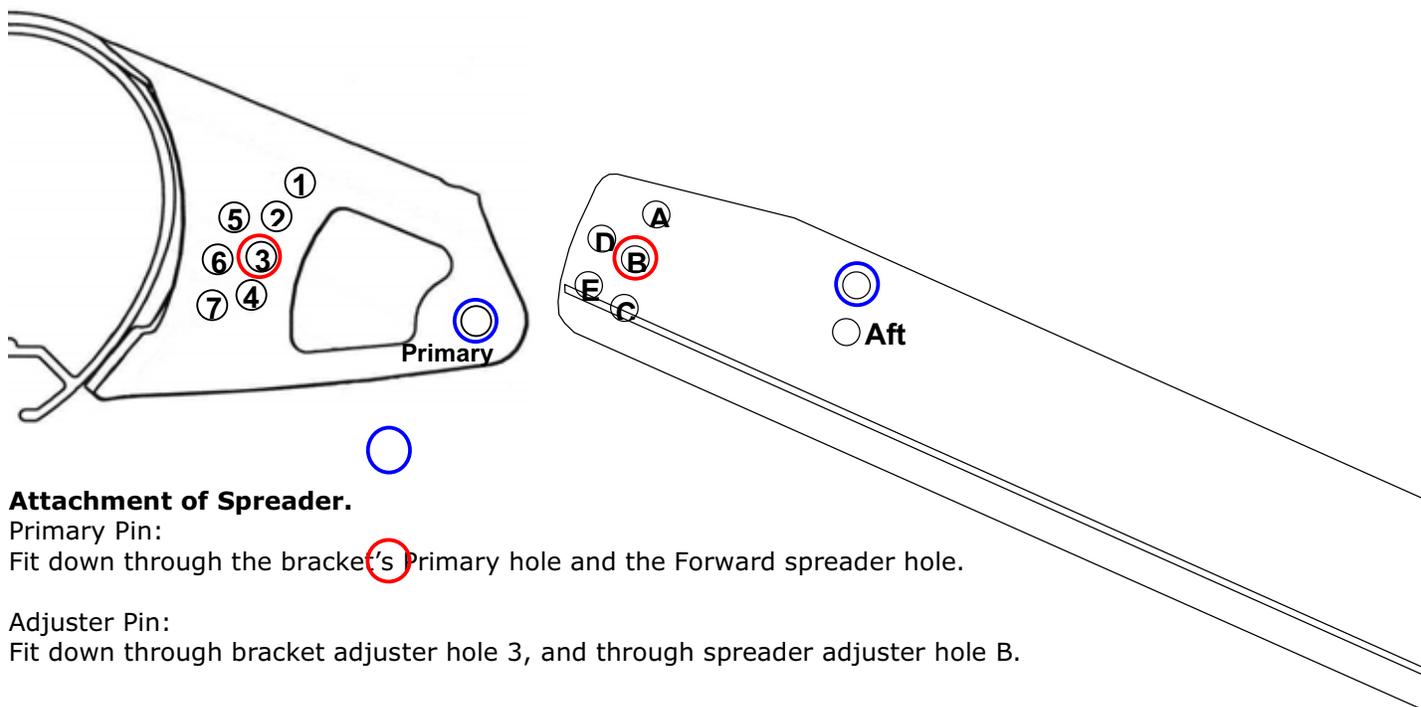
3. Insert blanking plugs, (tight fit to produce seal) a medium size flat blade screwdriver may be required to fit.



4. If applicable, fit trapeze wires and plugs in the top terminal positions on the mast. (Note: Trapeze kit is an option)



5. Fit spreaders (See next page for diagram of pin positions)



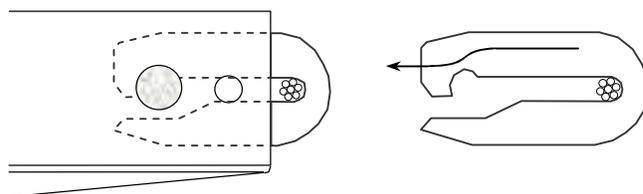
Attachment of Spreader.

Primary Pin:

Fit down through the bracket's Primary hole and the Forward spreader hole.

Adjuster Pin:

Fit down through bracket adjuster hole 3, and through spreader adjuster hole B.



Spreader Ends

Remove the clevis pin and slide out the spreader end hook.
 Slide the hook over the shroud, and slide back into the spreader.
 Refit the clevis pin and split ring.

Security

All clevis pins must be fitted with the flat head on top, and locked with a split ring.
 Tape all split rings, pins and the outboard end of the spreader extrusion. This will
 reduce chafe on the mainsail and prevent flailing sails/halyards becoming damaged.
 Self-amalgamating tape is best, but PVC electrical tape is an adequate alternative.

Class	Bracket Connection Pin	
	Primary	Adjuster
Laser Vago	Fwd	3B

6. Ensure that all the spreader pins and rings are taped up or serious damage could occur to the sails.



7. Mast head float (Optional extra)



- Stick the self adhesive neoprene strip to the top of the mast. This should be butted up to the top casting but not on the top casting.



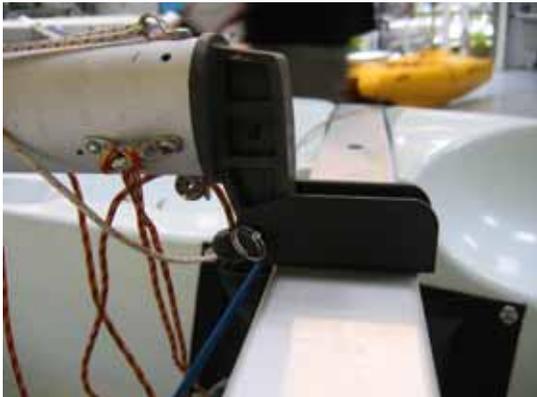
- Place the mast head float onto the mast head. The lacing eyes are on the front of the mast head float and the front of the mast. Tie the mast head float onto the mast using the lacing eyes.

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Raising the mast

(Note - This is a two person operation as someone will need to hold forestay - Ensure that there are no overhead power cables)



8. Place the mast heel into the mast step and put the pin through the mast heel and fit the ring into the clevis pin



9. Attach the shrouds to the shroud anchor point with the adjuster pin position in the 4th hole down on the back of the vernier adjuster. No 7 engraved on the adjuster.

10. Raise the mast with one person stood in the boat and one person pulling up the mast with the forestay.

Note: Always stand in the boat forwards of the trolley wheels to stop the boat tipping up.





11. Temporarily attach the forestay around the jib tack bar. (Not the furling drum)

12. Shackle the lower shrouds to the shroud anchor point. Forwards of the vernier adjuster.



13. Loosely tie the other end of the lower shrouds to front of mast. **(Note: The lower shroud tension is adjusted after the jib halyard has been tensioned.)**



14. Attach the trapeze rings to hull mounted shock cords by feeding the elastic loop through the ring at the bottom of the pulley. (Note: Trapeze kit is an option)

13. Place the Loop of elastic shock cord over the metal trapeze ring and pull tight.



Boom and Gnav



1. Unpack the boom and Gnav tackle.

2. Attach the boom to the mast using the drop nose pin. (Articulating toggle at the bottom)



3. Tie the Gnav control line from the boom to the double block and becket at the base of the mast in the boat.

(Tip - Best seaman like practise would be to use a bowline)



4. Attach the gnav strut to the gnav anchor point using the drop nose pin. (Articulating toggle at the bottom with joint orientation as shown)

5. Mainsheet – The mainsheet is dead ended at the block on the top of the hoop with a stop knot and then threaded as shown.



Sails



1. Ensure furling drum line is fully wound completely onto furling drum before you attach the jib.

2. Unroll the jib and attach jib tack to furling drum. Tape up pins on jib tack.



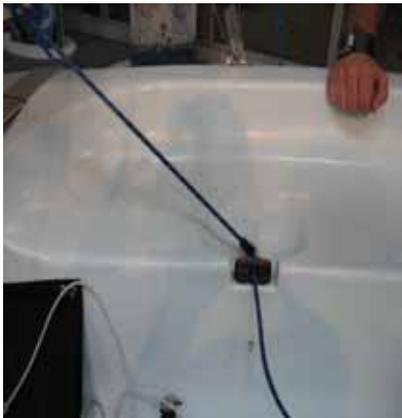
3. Attach the head of the jib to the jib halyard furling swivel and tape up prior to hoisting.

4. Hoist jib by pulling the white halyard out of aft face of the mast then hook the jib halyard purchase system onto jib Halyard wire. (Ensure hook is facing aft.)
5. Tension the jib halyard purchase system until the jib luff wire is taught. Cleat and tidy the rope end in the pocket on the underside of the gennaker sock. (If a loose gauge is used to measure the rig tension do NOT exceed 15 units or 70Kg's - measured on the shroud 0.75 metres above the vernier adjuster)



6. Tidy the halyards in the halyard bag.

7. Attach the centre of the jib sheet to the jib clew.



8. Thread the free ends of the jib sheet through the jib fairlead cleats on the inner deck.

Tip – Best seaman like practise would be to tie the sheet ends together to prevent flailing and inhibit sheets falling overboard.



9. Remove the forestay from the jib tack bar and tie to the P clip at the bottom of the mast.

10. Furl the jib by pulling the furling line. The furling line cleat is positioned on the front beam starboard hand side.

Lower shroud tensioning

- After tensioning the jib halyard re-adjust the lower shrouds so that they are just tight. **It is essential that the mast is straight** before the mainsail is hoisted (Fore and aft and side to side). Lower shroud tension should be adjusted accordingly.



Gennaker

1. Temporarily tie the gennaker halyard to one of the lower shrouds. (Blue halyard exiting from $\frac{3}{4}$ height up mast, just above the jib halyard sheave box)



2. Ensure the end of the gennaker halyard taken from the base of the mast is free of knots and tangles.

3. Feed the end of the Gennaker halyard through the turning block at the base of the mast and feed forwards towards the bow.





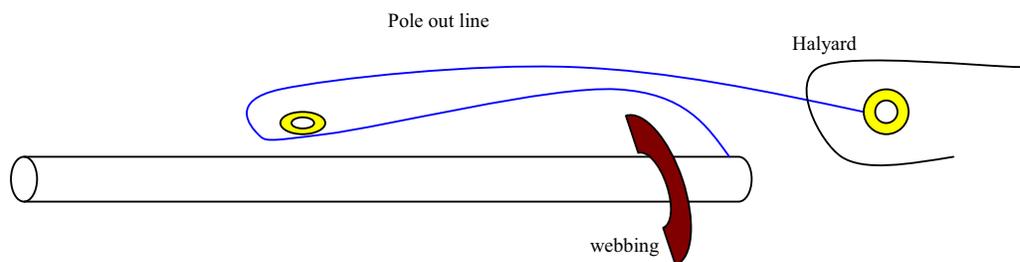
4. Locate the Gennaker pole "out" rope under the Gennaker sock at the bow. This is a blue rope with a block on the end as shown.



5. Pull out the pole to its full extension.



6. Feed the pole "out" rope and block back down the Shute towards the back of the boat. **This must go under the Gennaker sock and ABOVE the pole webbing at the front of the Shute.**



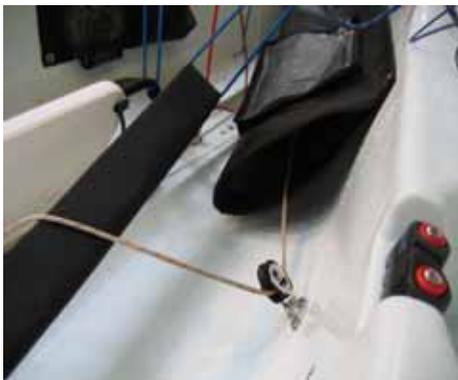


7. Fed the Gennaker halyard through the pole "out" block under the sock.



8. Feed the Gennaker halyard through the cleat on the starboard side of the centreboard case and then through the turning block. (white rope shown)

9. Feed the halyard end over the toestraps and through the retrieval block on the starboard side.



10. The Gennaker halyard then goes back up the Shute to the bow. A batten or tiller extension is useful to feed this up the Shute.



11. Unfold the gennaker:

- A, Identify the Tack.
(Written on the sail)
- B. Secure to the gennaker pole tack line to the sail using a bowline. (The tack line comes out of the front of the Gennaker pole.)
- c. The plastic bobble should be between the sail and the pole end.



12. Untie the gennaker halyard from the lower shroud and secure to the Head of the gennaker using a bowline.

13. Take the end of the gennaker halyard from the jib tack bar. (You previously passed through the sock) Pass the downhaul end of the gennaker halyard through the lower downhaul patch ring on the port side of the sail.



c. Secure to the upper downhaul patch using a bowline.

14. Attach the centre of the gennaker sheet to the clew of the gennaker.





15. Pass the free ends of the gennaker sheets aft (One sheet either side of the jib luff) and through the gennaker sheet ratchet blocks attached to the anchor points. There are arrows on the ratchet block to indicate which way the rope should pass. When under load, the ratchet will engage. (Note – The sheets must pass outside of the shrouds and trapeze lines at all times.)

16. Tie the free ends of the gennaker sheet together.



17. Ensure the boat is pointing directly into the wind and hoist the gennaker. Take great care to ensure that the gennaker does not get snagged around the trolley; a second person should help with this to ensure it does not snag anywhere. Check the gennaker is not twisted and the Sheets are not tangled with the halyard. **ALWAYS TAKE GREAT CARE TO PULL UP THE GENNAKER SLOWLY AND DO NOT KEEP PULLING IF IT BECOMES TANGLED OR TIGHT.**

18. Uncleat the halyard and gently pull the gennaker into the sock by pulling the halyard through the block at the aft end of the sock. A second person should help with this and be positioned at the front of the boat to ensure the gennaker does not get snagged anywhere.

Mainsail – Sport and Standard sail

1. Remove the mainsail from the bag and unroll.
2. Ensure all battens are tight in their pockets and the Velcro locking mechanisms are positively engaged:



a. To release the tension from a batten, slide the batten prodder (supplied) carefully between the two halves of the velcro locking mechanism and pull the retrieval line slowly.



b. To re-tension the batten locate the tip of the prodder in to the location point at the end of the velcro strip then insert between the batten and the batten pocket inner side. Push the prodder until the desired batten tension is attained then withdraw the prodder gently while pressing both sides of the batten pocket together to re-engage the velcro locking mechanism.

3. Position the boat so that it is head to wind – bow into the wind.
4. Place the mainsail in the cockpit of the hull with the luff closest the bow (front) and the leach closest the stern (back).

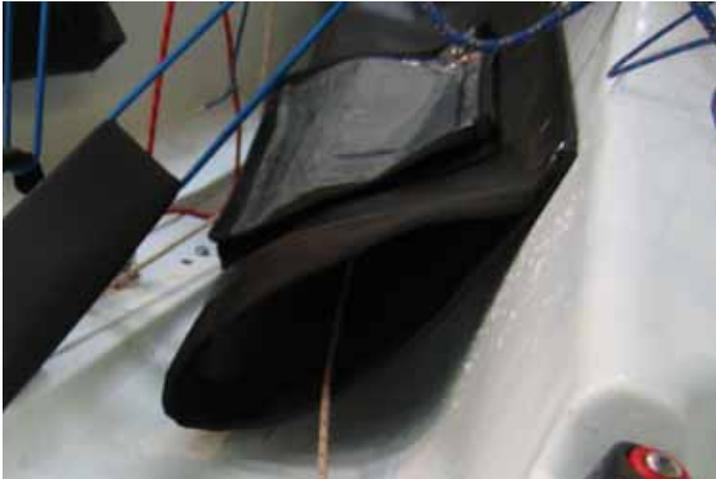


5. Take the main halyard:
 - a. Ensure there are no twists in the halyard and it is clear of the spreaders.
 - b. Form a loop in the end of the halyard; pass the loop through the eye in the head of the mainsail. (Pass loop from starboard/right to port/left side)
 - c. Pass the bobble through this loop and pull tight to secure. (Ensure the bobble is positioned on port/left side as shown – This ensures the bobble will not get caught in the “V” between the Gnav bar and the mast during hoisting)



6. Locate the head of the mainsail into the mast track. The GNAV bar must be on the starboard side of the sail with sail and halyard to the port side of the GNAV bar.
7. Hoist the mainsail using the main halyard, which exits the mast on the lower port side. Note - Hoisting the mainsail is a two person operation as assistance will be required to feed the mainsail in to the mast track while the other hoists using the halyard (This will prevent the sail pulling out of the track and jamming which could cause luff rope damage.)

8. When the mainsail is fully hoisted, coil the halyard and store in the halyard bag on the side of the gennaker sock.



Outhaul

1. Secure the Velcro tack strap around the mast.

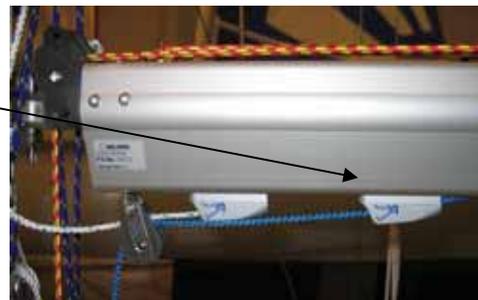


2. Feed the plastic slug slide on the clew outhaul into the cut out on the top of the boom.

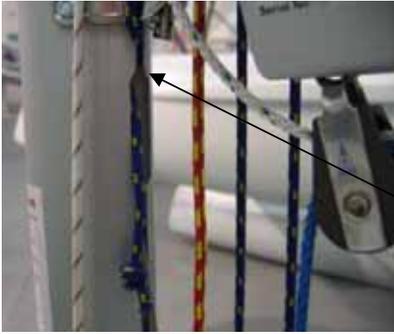
3. The outhaul line (blue) is then passed through the eye in the sail (From port/left to starboard/right side) and anchored on the starboard/right side with a simple knot located in the slot formed in the boom end casting.



4. Outhaul tension is controlled using the blue rope, cleat and fairlead at the forward end of the boom.



Cunningham



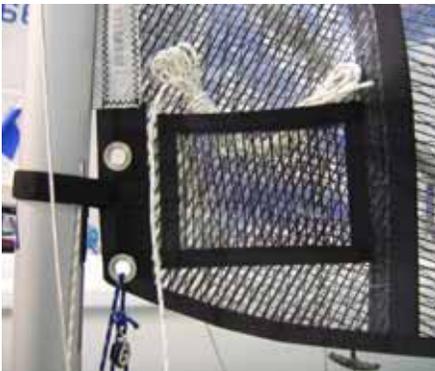
1. Pass the rope at the end of the cunningham purchase system through the eye at the bottom of the mainsail luff (from starboard/right hand to port/left hand side).
2. Anchor the end of the cunningham purchase system by sliding a half hitch knot in to mast track just below the gooseneck.

3. Cunningham tension is controlled using the blue rope, the cleat and fairlead block is on the starboard side of the mast.



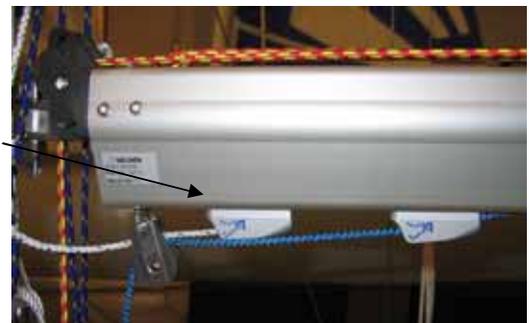
Single Line Reefing

1. Rig the single line reefing. (See next page for diagram)

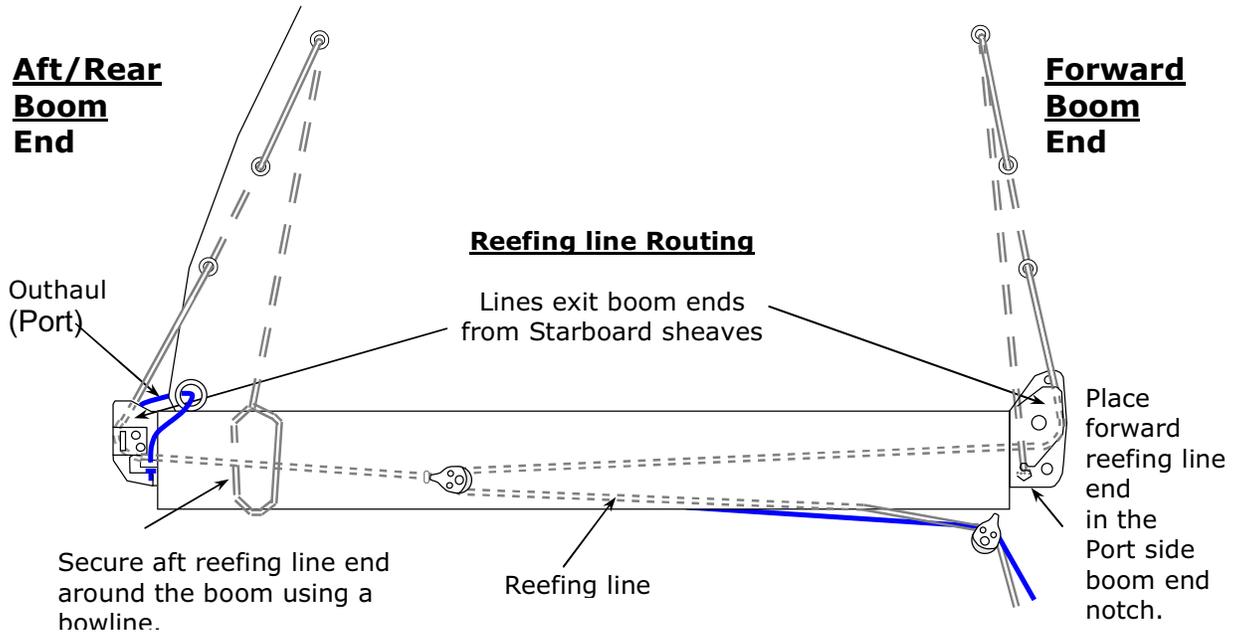


2. Although single line reefing is only applicable to the standard Bahia sail, you will find a pocket at the forward end of the foot of both the sport and standard mainsails (port side) to tidy the loose end of the single line reefing system.

3. Single line reefing tension is controlled using the white rope, cleat and fairlead at the forward end of the boom.

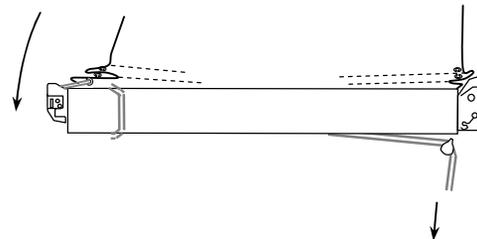
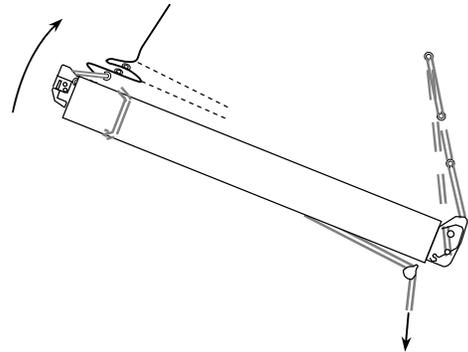


Single Line Reefing Instructions

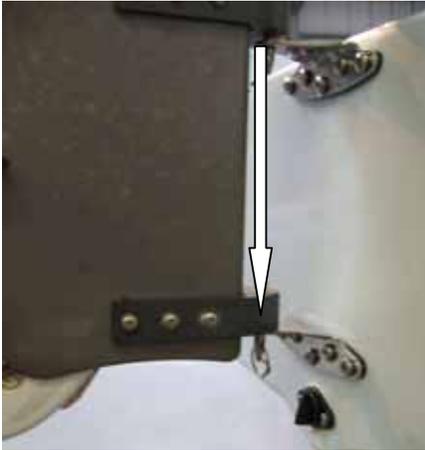


Method

1. Ease sheet & GNAV.
2. Pull the reefline. The boom will angle up until all of the aft reefing line slack is taken in or GNAV travel limit is reached.
3. Ease the halyard, and continue pulling the reefline. The boom outer end will move down towards horizontal.
4. When the reefline has pulled the clew and tack down hard, jam it off.
5. Re-tension the halyard and adjust the GNAV & sheet.

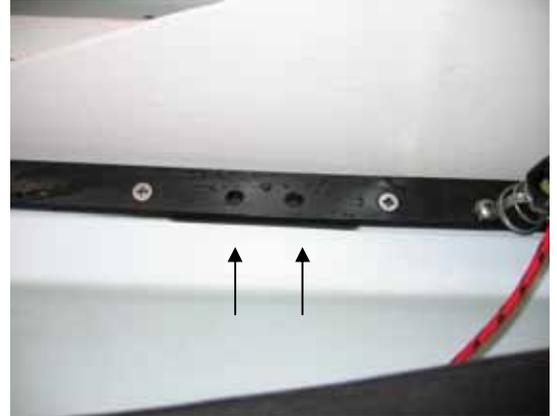


Rudder and Centreboard



The pin goes through from the top of the rudder stock and through both sets of Gudgeons. This must be secured with the split ring below the bottom gudgeon.

The centreboard friction device can be used to adjust the tension on the side of the centreboard which holds the centreboard down whilst sailing. This is located through the two holes on the top of the centreboard case. To tighten a pozi drive screwdriver is used to tighten or loosen as required. Both sides are adjusted. To tighten, screw through all four holes clockwise and opposite to loosen.



Rowing (Option)



The rowlocks are a push and twist fit into the holes in the gunwhale sides. These can be stored when not in use in the centre console hatch.

The storage box lid is turned upside down and is used as a seat whilst rowing. The centreboard should be up whilst rowing.



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Engine, Bracket and Storage Box (Optional extra)



The Engine bracket is fitted by simply locating the brackets pin into the bush in the Bahia transom top. This is a push fit.

It is then secured by the eye bolt through the engine bracket into the insert in the back of the boat. This will have a plastic thumb screw cover which will need to be unscrewed and kept in a safe place.

NOTE: BE CAREFULL NOT TO CROSS THREAD THE EYE BOLT INTO THE INSERT WHEN FITTING.



The engine should be secured to the eye bolt with a piece of rope. This rope should be as long as possible without fouling the prop when the engine is running. A short lanyard can be a hazard if the engine comes loose from the bracket as the engine can turn over and the prop will be in the air.

MAXIMUM recommended engine capacity 3.3HP

© Ocean Images



The storage box is secured in by two eye bolts, one in both sides. Care must be taken when screwing in the eye bolts to avoid cross threading.

The engine must be secured to BOTH eye bolts in the box to avoid the engine coming loose in the event of a capsized.

The lid has a securing lanyard and can be tightened by applying pressure to the lid when cleating the lanyard. The lid is a useful seat for use with the outboard.

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Launching And Basic Safety On The Water

Before You Go Sailing:

- Check you are wearing suitable clothing and safety equipment for the conditions and time of year.
- Always wear a buoyancy aid or life jacket
- Make sure a third party knows where you are sailing and how many there are of you.
- Check the weather forecast
- Check the time of high and low tides if applicable.
- Seek advice of local conditions if sailing in a new area.
- Always check the condition of your craft before setting off.
- **Check for overhead cables when rigging, launching and recovering.**

Launching



- Raise the mainsail with the boat facing into the wind.
- Launch the boat using the appropriate launching trolley.
- Take the boat into the water with the bow facing into the wind.

- Ensure that there is enough water to float the boat off the trolley.
- One person should hold the boat whilst the other gets in and prepares to set off.



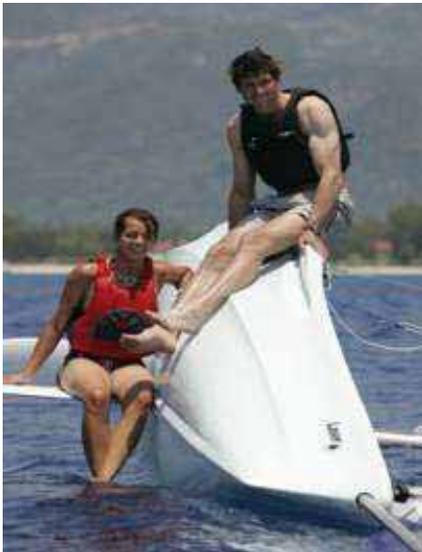


- When there is enough water below you, lower the centreboard and rudder fully.
- Cleat the rudder downhaul in the cleat on the tiller and ensure that the wing nut on the side of the rudderstock is tight.

The Rudder And Centreboard Should Be In The Fully Down Position At All Times When Sailing And Isometric Boat.

On The Water

- Conform to the sailing rules of the road.
- Look out for changing weather conditions.
- Never sail beyond your ability or that of your crew.
- **Understand and be competent in the sailing skills and righting techniques.**



WARNING: When wearing a trapeze harness, take particular care when climbing on to the centreboard and back in to the boat after capsize. (As the trapeze harness hook could easily damage the various surfaces)

Enjoy your Laser Bahia sailing.