STRATOS KEEL

Rigging Manual

STRATOS KEEL
Rigging Instructions

The Stratos Keel rigging instructions are a guide to rigging your boat. LaserPerformance reserves the right to make design and/or specification changes to any of their products as part of their continuous development program.

Important information

There are five hatches and one transom drain bung on the Stratos Keel. Every time you sail, these must be checked to ensure they are closed tightly and fit correctly.

1. Hatches 1 & 2 are found on the fore (figure 1) & aft (figure 2) sides of the cockpit center console. (Fitted to facilitate additional on the water storage only).

2. Hatches 3, 4 & 5 are all found on the aft/stern deck. (figure 3)

3. The transom drain bung can be found below the bottom rudder gudgeon. (figure 4)

4. Example of **INCORRECT** hatch fitting:

NB: Correct fittin of the transom drain bung and hatches 3, 4, 5 is fundamental to your safety on the water and performance of the Stratos Keel.

figure 1

figure 2

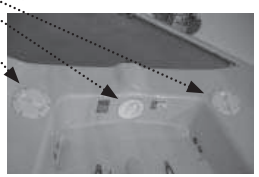


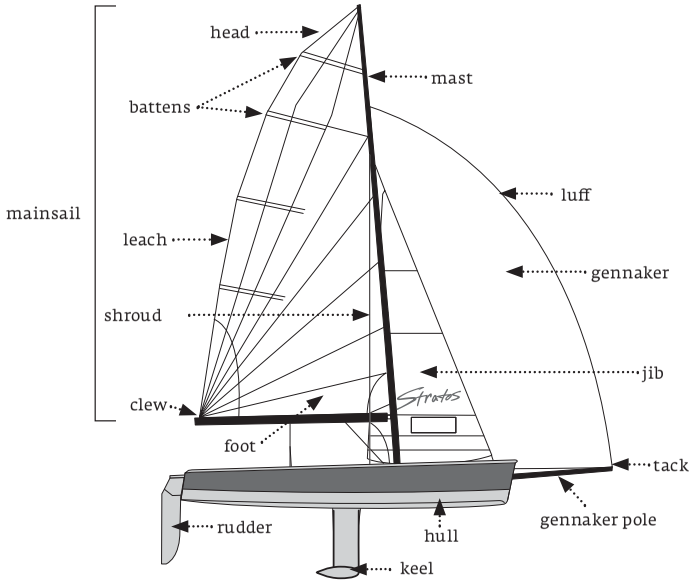
figure 3

figure 4

1. 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 leach
Mast: Main vertical spar supporting the rig/sails
Boom: Spar at the Bottom of the mainsail
Gennaker pole: The pole that extends from the bow to fly the gennaker tack.
Cleat: A fitting used for holding /securing ropes
Forestay: The wire supporting the mast at the bow of the boat
Shrouds: Wires that hold the mast in the boat and supports the mast from ¾ up and out to hull side; attaches with shroud adjuster to shroud anchor point
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/leach of the sail
Vang: Otherwise known as the kicking strap or Gnav
Outhaul: Purchase system for tightening the bottom edge/foot of the sail
Halyard: Line 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
Shrouds: Standing rigging which holds the mast up from side to side connecting at the hounds; additional shrouds connect partway down the mast; shrouds then terminate on the deck of the boat; shrouds are attached symmetrically on both the port and starboard sides
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 to which the forestay attaches
Rudder: Blade and attachments used for steering the boat

Useful boat Terminology



2. Sail Number Positioning

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

1. Lay the sail on a flat surface starboard side up.

2. Numbers on the starboard side of a sail are always higher than those on the port.

3. Mark a parallel line 76 mm above the third batten down from the head of the sail.

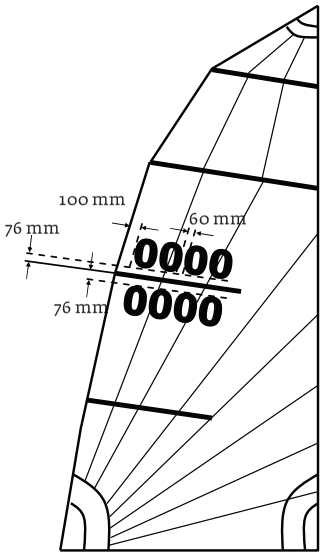
4. Mark a point on the line 100mm in from the leach.

5. The first number in the sequence should be positioned on the parallel line you have drawn commencing 100 mm in from the leach.

6. Subsequent numbers should be spaced 60 mm apart.

7. Turn the sail over and position the port numbers 76 mm below the third batten down from the head.

8. Work backwards, commencing 100 mm in from the leach.



starboard (right hand) side of mainsail

3. Rigging and Raising the Mast

1. Unwrap the mast.

2. Ensure the halyards, shrouds and lower shrouds are led to the gooseneck/base of the mast and each halyard rope end has a knot tied in it. (figure 4)

3. If applicable, fit trapeze wires in the top "T" terminal positions on the mast. (figure 5) (**Please note:** The Stratos Keel trapeze kit is optional not supplied as standard).

4. Fit the spreaders. (figure 6a) (figure 6b) See below for a diagram of the fit.

Tip: *Best practice is to fit the clevis pins from above to ensure all split rings are positioned on the underside of the spreader bracket/bars.*


figure 4

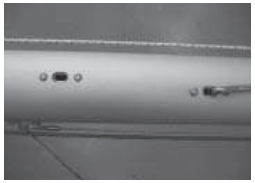
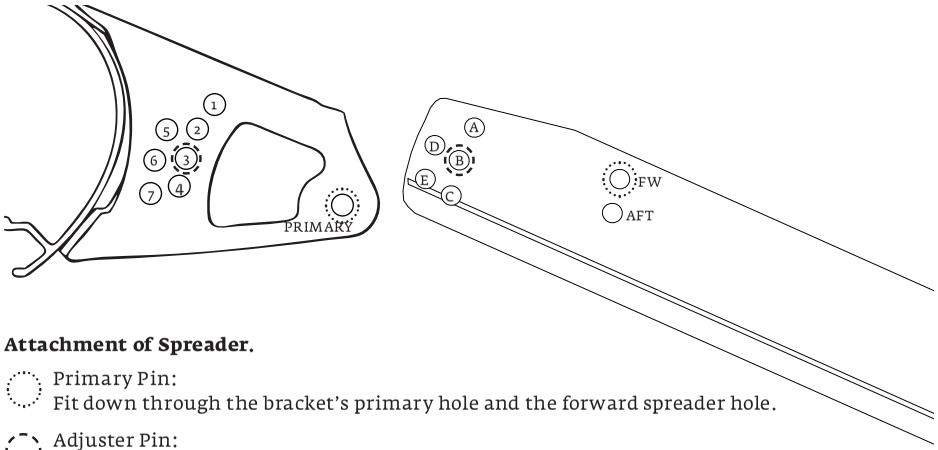


figure 5


figure 6a

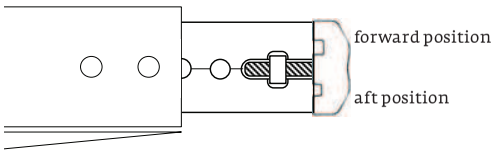

figure6b



Attachment of Spreader.

Primary Pin:
Fit down through the bracket's primary hole and the forward spreader hole.

Adjuster Pin:
Fit down through hole 3 on on the bracket and B on the speader bar.



ROTATE AS NECESSARY
(see table)

CLASS	BRACKET CONNECTION PIN		OUTER END		
	PRIMARY	ADJUSTER	AND CAP POS'N	WIRE DIA.	VISIBLE HOLES
Stratos Keel	Fwd	3B	Aft	3.0 mm	0

Spreader Ends

Spreader End Cap:

The spreader end cap incorporates two shroud wire slots to give a tight grip on either 2.5 or 3 mm wire. The sizes are identified on the front face of the end cap (See diagram on page 4). To find which wire slot you require for your mast, please see the table on the previous page.

The end cap can also be rotated so that the shroud can be positioned at either the forward or aft position of the spreader end (see diagram on page 4). To find out which position is required for your mast, please see the table above.

To attach the shroud, slacken the end screw, rotate the end clamp if necessary, then insert the shroud. Ensure that the shroud is tensioned between T-terminal and spreader tip, and then tighten the screw firmly.

This method "locks in" the dihedral angle.

Length Adjustment:
Described by the number of adjustment holes visible, (e.g. In the diagram on page 4 there are 1 ½ holes visible). **Please see the table on the previous page for your class specific positions.**

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.

5. Ensure that all the spreader pins and rings are taped up or serious damage could occur to the sails. (figure 7a) (figure 7b)

6. Open the mast gate. (figure 8)

7. Raise the mast and position the mast heel in the center of the mast step. The mast heel recess/slot should straddle the center bolt of the mast step. (figure 9)

Note: *This is a two person operation as someone will need to hold the mast upright while the shrouds and forestay are connected*

Caution: *Contact with overhead electrical wires could be fatal, exercise extreme caution when raising the mast, launching & sailing.*

8. Ensure the mast heel is positioned and engaged correctly as shown. (figure 10)

9. Close the mast gate. (figure 11)


figure 7a


figure 7b


figure 8


figure 9


figure 10


figure 11

10. Attach the shrouds to the shroud anchor point with the adjuster pin position in the 3rd hole down on the back of the vernier adjuster. (figure 12)

11. Attach the lower shrouds to the lower shroud anchor point with the pin positioned in the 4th hole down on the vernier adjuster (figure 12)

12. Attach the forestay and elastic on to the deck fairlead on the port bow deck as shown. (figure 13)

13. Temporarily fasten the jib halyard to the forestay, genaker halyard to the jib tack bar and main halyard to the port shroud anchor point. This simply ensures these elements do not inpinge upon other activities and are in the best positions for ease of rigging. (figure 14a) (figure 14b) (figure 14c)

14. The hull mounted trapeze shock cords can be found on the sub deck inner gunwale just in front of the jib sheet track/cleat. (figure 15)

15. Attach the trapeze rings to hull-mounted shockcords by feeding the elastic loop through the ring at the bottom of the pulley. Please note: the Stratos Keel trapeze kit is an optional upgrade and does not come standard with the boat. (figure 16)

16. Place the Loop of elastic shock cord over the metal trapeze ring and pull tight. (figure 17)

17. Tip: Best practice is to tie two double half hitch stopper knots a hand width apart in the adjuster line. (figure 18)

Tip: *Best practice is to tie the loose end of the mainsheet to one of the rear toe straps to prevent tangling and the sheet falling overboard.*

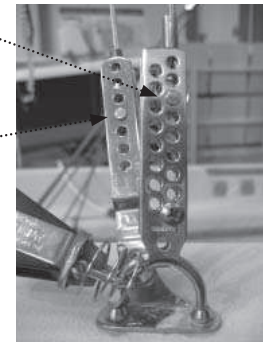


figure 12

figure 13

figure 14a

figure 14b

figure 14c

figure 15

figure 16

figure 17

figure 18

4. Boom and Vang

1. Unpack the boom and vang tackle.

2. Attach the boom to the mast using the gooseneck drop pin. (figure 19)

3. Shackle the lower vang purchase system assembly on the mast as shown. (figure 20)

4. Hook the vang upper purchase assembly on to the boom ensuring there are no twists or fouls in the system. (figure 21)

5. Tie the mainsheet to the becket of the block on top of the mainsheet hoop using a bowline. (figure 22)

6. Feed the mainsheet through the blocks and to the mainsheet swivel cleat as shown. (figure 23)

Tip: *Double check the mainsheet passes through the auto ratchet in the correct direction shown by the arrow embossed on the side of the auto ratchet block.*

7. Vang tension is controlled using the forward rope and fairlead/cleats on top of the cockpit center console. (figure 24)

figure 19

figure 20

figure 21

aft block

figure 22

figure 23

figure 24

5. Jib

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

2. The furling line/cleat can be found on the starboard side of the foredeck. (figure 25)

3. Unroll the jib and attach the jib tack to the furling drum using the large shackle provided. (Tape up the shackle and pin to prevent snagging or damage to the sails and line during sailing). (figure 26)

4. Clip the jib halyard swivel assembly on to the forestay and fasten the head of the jib to the swivel using the clevis pin and split ring. (Tape up the shackle and pin to prevent snagging or damage to the sails and line during sailing). (figure 27)

5. Hoist jib by pulling the white halyard out of the aft face of the mast, then hook the jib halyard purchase system onto jib halyard wire. (Ensure hook is facing aft to prevent engaging in the mast track groove). (figure 28)

6. Tension the jib halyard purchase system until the jib luff wire is taught. (figure 29)

7. Cleat and tidy away both rope ends in the halyard pocket positioned on the aft face of the general storage bag (underside of the mast buttress - port side) .

Note: *If a loose gauge is used to measure the rig tension do NOT exceed 24 units or 150 kg - measured on the shroud 0.75 meters above the vernier adjuster.*

8. Find the centre of the jib sheet and pass it through the clew of the jib, then pull the two trailing ends of the sheet through the loop you have created to lock them in place as shown. (figure 30)

9. Pass one jib sheet through either side of the mast before threading them through their respective port and starboard jib fairlead/cleats. (figure 31)

Tip: *Best practice is to tie the sheet ends together in the middle of the boat to prevent tangling and prevent sheets from falling overboard.* (figure 32a & 32b)

10. Furl the jib by pulling the furling line. The furling line/cleat can be found on the starboard side of the foredeck just in front of the jib sheet track/cleat.

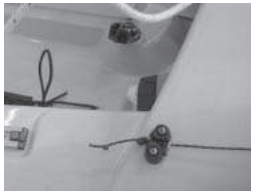


figure 25


figure 26


figure 27


figure 28


figure 29


figure 31


figure 30


figure 32a


figure 32b

6. Gennaker

1. Clip the gennacker pole "flyaway" system on to the front of the mast as shown. (Over time the elastic may stretch and require tightening). (figure 33)

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

3. Take the gennaker halyard from the base of the mast and pass forward, under the gennaker sock and round the gennaker pole outhaul block. (The gennaker pole outhaul block is attached to the rope led from the pole as shown). (figure 34)

4. Thread the halyard aft, under the mast buttress and through the gennaker halyard cleat at the front of the centerboard case on the starboard side. (figure 35)

5. Thread the halyard through both the block and the eyelet at the aft end of the gennaker sock. (figure 36)

6. Tie the end of the halyard to something such as a batten or tiller extension and carefully pass the end of the halyard up the sock until you can grasp it from the front end of the gennaker sock opening. (figure 37)

7. This is known as the downhaul end of the gennaker halyard and should be temporarily tied around the jib tack bar while the batten/extension is removed from the gennaker sock. (figure 38)

Note: *The uphaul end of the gennaker halyard is already tied around the jib tack bar from a previous rigging exercise.*


figure 33


figure 34


figure 35


figure 36


figure 37


figure 38

8. Unfold the gennaker:

A. Identify the tack (written on the sail).

B. Secure to the gennaker tack line as shown. (The tack line comes out of the front of the gennaker pole.) (figure 39)

9. Untie the gennaker halyard (uphaul) from the jib tack bar and tie it to the head of the gennaker using a bowline.(figure 40)

10. Untie the gennaker halyard (downhaul) from the jib tack bar:

A. Pass through the lower downhaul patch ring on the port side of the sail. (figure 41a)

B. Secure to the upper downhaul patch using a bowline. (figure 41b)

10. Attach the center of the gennaker sheet to the clew of the gennaker. (figure 42)

11. 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 shroud 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 forward of the shrouds at all times.) (figure 43)

12. Tie the free ends of the gennaker sheet together. (figure 44)

13. 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.

Caution: *Always take great care to pull up the gennaker slowly and do not keep pulling if it becomes tangled or tight.*

14. 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.

figure 39

figure 40

figure 41a

figure 41b

figure 42

figure 43

figure 44

7. Mainsail

1. Remove the mainsail from its the bag and unroll.

2. Ensure all battens are tight in their pockets and the locking mechanisms are positively engaged.

3. Position the boat so it is head to wind (bow facing directly in to 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. Tie the halyard to the head of the sail using a bowline.

c. Locate the head of the mainsail into the mast track. (figure 45)

6. Hoist the mainsail using the main halyard block/cleat assembly on the lower port side of the mast. (figure 46)

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.)*

7. When the mainsail is fully hoisted, cleat and tidy away the halyard rope end in the halyard pocket positioned on the aft face of the general storage bag. (Underside of mast buttress - port side.) (figure 47)

8. Outhaul

1. Secure the mainsail tack in place by pinning it between the two vertical lugs on the upper surface of the inboard boom end casting. (figure 48)

2. Feed the plastic slug slide on the clew outhaul into the cut out on the top of the boom. (figure 49)

3. The outhaul line 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. (figure 50) (figure 51)

figure 45

figure 46

figure 47

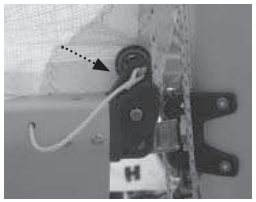


figure 48

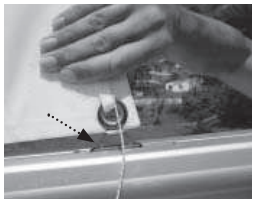


figure 49

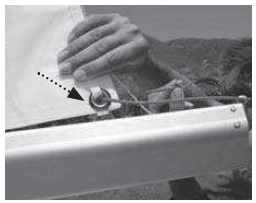


figure 50

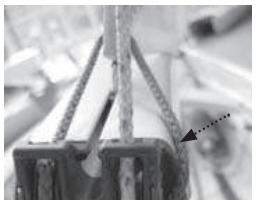


figure 51

9. Cunningham

1. Pass the rope at the end of the cunningham purchase system through the eye at the bottom of the mainsail luff (from port/left hand to starboard/right hand side). (figure 52)

2. Anchor the end of the cunningham purchase system by sliding a half hitch knot in to the mast track just below the gooseneck. (figure 53)

3. Cunningham tension is controlled using the aft rope and fairlead/cleats on top of the cockpit centre console.

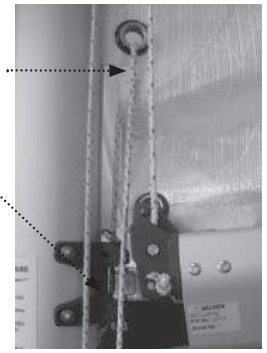


figure 52

figure 53

10. Single Line Reefing

1. Rig the single line reefing (see diagram below).

2. Single line reefing tension is controled using the aft rope, cleat and fairlead at the forward end of the boom. (figure 54)

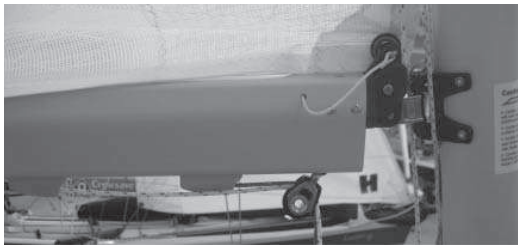
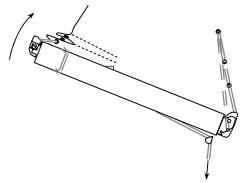


figure 54

Method

1. Ease mainsheet and vang.

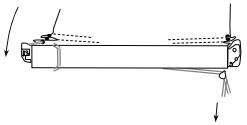
2. Pull the reefline. The boom will angle up until all of the aft reefing line slack is taken in or vang limit is reached.



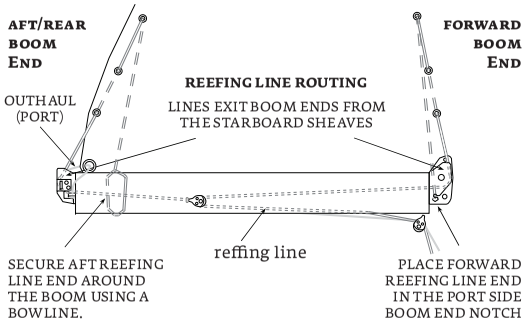
3. Ease the halyard, and continue pulling the reefline. The boom outer end will move horizontally downwards.

4. When the reefline has pulled the clew and tack down hard, jam it off.

5. Readjust the tension on the halyard and adjust the vang and mainsheet.



Single Line Reefing Instructions



11. Rudder

1. Attach the rudder assembly to the transom:

A. Fit the secondary rudder retaining split ring to the top rudder pintle. (figure 55)

B. Ensure the primary rudder-retaining clip is adjusted and has engaged correctly. (figure 56)

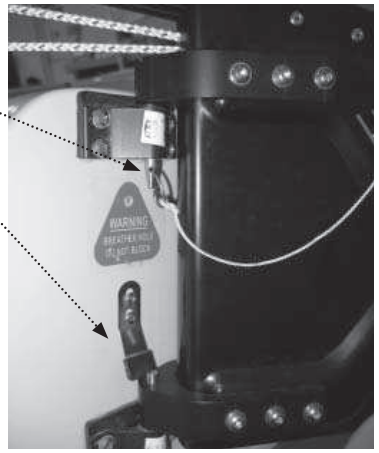


figure 55

12. Launching

1. Raise the mainsail with the boat facing into the wind.

2. Launch the boat using the appropriate launching trolley. (figure 56)

3. Take the boat into the water with the bow facing into the wind.

4. Ensure that there is enough water to float the boat off the trolley.

5. One person should hold the boat while the other gets in and prepares to set off. (figure 57)

6. When there is enough water below you, lower the centerboard and rudder fully.

7. Cleat the rudder downhaul in the cleat on the tiller and ensure that the wing nut on the side of the rudderstock is tight. (figure 58)

THE RUDDER AND CENTERBOARD SHOULD BE IN THE FULLY DOWN POSITION AT ALL TIMES WHEN SAILING AN ASYMMETRIC BOAT LIKE THE STRATOS KEEL.

figure 56

figure 57

figure 58

13. Using Your Stratos "Keel"

A. Removing your Stratos Keel hull and trolley from the road base.

1. **Warning:** When removing the Stratos' keel and launching trolley from the road base, it is highly recommended to leave the road base hitched to your vehicle or to chock the front of the road base wheels. This is to prevent the road base shooting forwards as the boat and trolley are pushed aft. Failure to do this could lead to injury or damage.
2. If a winch is fitted to your trailer base, release the ratchet. One person can control the aft movement of the boat and trolley on the winch handle, while the others push and guide the boat and trolley off the road base.

   Warning: The Stratos' keel is a substantial product that requires care to avoid injury when maneuvering on and off the water.

   To avoid hitting solid objects with the keel do not run aground at speed.

B. Launching your Stratos Keel.

Select a launching area where there is deep enough water to float the Stratos Keel off the trolley. Care must be taken to ensure that the keel passes through the gap in the trolley bunk.

C. Lowering the Stratos Keel

Warning:

- The keel weighs approximately 120 kgs. and may damage the boat if dropped in an uncontroled manner. Do not allow children or anyone of inadequate strength or experience to operate the keel mechanism without close supervision or assistance.
- Ensure that the operators and other crewmembers feet and fingers are well clear of the keel and operating mechanism when lowering and hoisting to avoid injury.
- Suitable sailing shoes should always be worn when sailing to avoid injury to your feet.
- Ensure that the hoist line is clear and free and that all other line are well clear of the hoisting mechanism. (Stray line jammed in the keel box or hoist mechanism could be very difficult to remove).
- Ensure that the keel box and keel are free from sand, pebbles and other debris.

1. Attach the hoist retaining line hook to the hoist frame. (figure 59)

2. While holding the hoist line securely, pull the line upwards and forward. This will uncleat the line. Always maintain controled tension on the line while it is uncleated, anticipating that the full weight of the keel will be controled by the hoist line. Never allow the keel to drop uncontrollably. (figure 60)

3. Gently lower the keel in accordance with the water depth. (figure 61)

4. When the keel is lowered. Secure the retaining line/strap over the top of the keel and cleat in position. In the unlikely event of capsize, this will prevent the keel from falling back into the boat. (figure 62)

5. The hoisting frame can now be lowered forward onto the cockpit floor. (figure 62)

Note: *The sails are rigged and hoisted as per the standard Stratos Keel rigging instructions.*

figure 59

figure 60

figure 61

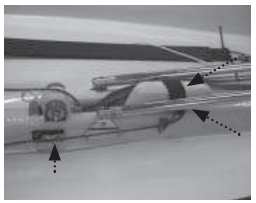


figure 62

D. Hoisting the Stratos keel

1. Anticipate arriving in shallow water and always allow plenty of time to hoist the keel.
2. Release the keel-retaining strap/line.
3. Raise the hoist frame above the keel and ensure that it is fully upright.
4. Attach the hoist retaining line hook to the hoist frame.
5. Ensure that the keel and hoist system is free from obstruction, stray lines and debris. Also, ensure that the gennaker sheets are secured so they don't get wrapped around the keel.
6. While holding the hoist line firmly, progressively hoist the keel fully up and secure the rope in the cleat. For added security the rope end can be tied off onto the hoist frame.

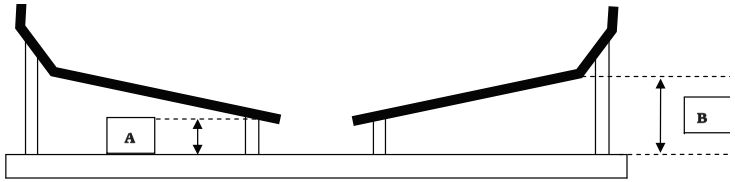
E. Recovering Your Stratos "Keel."

1. While one crewmember holds the bow of the boat, another can lower the sail and then get the launching trolley.
2. Position the trolley in deep enough water so that your Stratos Keel can be floated back onto the trolley.
3. Carefully guide the boat onto the trolley so that the keel passes cleanly through the gap in the trolley bunk.
4. Secure the bow to the trolley and pull the boat out of the water.
5. After derigging the boat, the boat and trolley can be pulled or winched onto the road base. It is essential the road base wheels are chocked aft or the road base must be hitched to your vehicle.
6. Before trailing, lower the keel so that the weight of the keel is supported by the keel platform on the trolley.

Warning:

- We recommend that a trailer and road base supplied by LaserPerformance is used, so that the keel and hull are correctly supported to avoid damage.
- It is the owner's responsibility to maintain his trailer. The height of the trolley bunk should be adjusted and checked regularly to ensure that it is supporting the hull with the keel resting on the support platform. Also, the wheel bearings should be serviced regularly.

The following is a rough guide to the position of the trolley bunk.



Dimension A = 195 mm from the top of the launching trolley axle to the underside of the trolley bunk measured by the inner face of the inner leg.

Dimension B = 280 mm from the top of the launching trolley/dolly axle to the turn of the chine measured from the underside of the trolley/dolly bunk.

14. Fitting the Stratos Engine Bracket

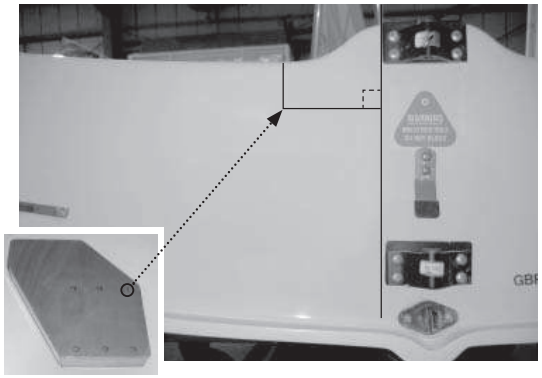
• Position the first bolthole as shown in the above diagram.

• Bolt bracket to transom using only the first single bolt hole. (Use a 6 mm drill bit)

• Align top of bracket horizontally to boat.

• Drill through ply bracket to position the other 5 holes. (Use a 6 mm drill bit)

• Ensure all boltholes are watertight by using silicone sealant during fitting.



(position of first bolt hole) figure 63

complete fitted position

figure 64

Warning: Keeping your LaserPerformance product on a mooring. It is well publicized that glass reinforced plastic (GRP) boat hulls are susceptible to osmosis and wicking, if stored on a mooring for prolonged periods without a protective barrier in addition to the gel coat. Similar conditions can be created when a hull is placed in a transport cover when it is wet and the cover is not removed at the end of the journey. This is a particular risk in hot and humid conditions. If you plan to moor your boat on a mooring for more than 2 weeks, we recommend an osmosis barrier coat.

Righting the Boat

1. Ensure all members of the crew are accounted for and safe.

2. If the gennaker is deployed, drop the sail back in to the sock.

3. Release the main/jib sheets and vang from respective cleats and ensure the sheets are fully extended to avoid the boat sailing immediately after righting.

4. If the boat inverts, first recover the boat on to its side.

5. In adverse conditions and with more than two crew, it is recommended that the largest crew member swim to the bow and hold the bow during righting and until all other crew members have reboarded after righting. (This ensures the boat swings into the safe head in to wind position upon righting).

6. It is recommended to use the "scoop" recovery system for crewmembers not involved in the righting procedure. When the boat is on its side, the crew members to be scooped should move to the inner lower side of the boat as close to the center of the boat as possible. As the boat is righted, these crew members will be "scooped" onboard the boat and will then be ready to help others reboard. "Scooping" should only be attempted with practice and should only be commenced after the boat is stabilized on its side by a crewmember who is securely located on the centerboard and holding the capsize righting line under the gunwale. This is to prevent the boat from inverting and potentially trapping the crew.

7. Righting is effected by a crewmember standing on the centerboard moving out towards the end of the board whilst leaning out holding on to the righting line. The boat will recover to the upright position quickly. It should normally only require one average size person to right the centerboard.

8. Immediately after righting the tiller should be pushed fully towards the mainsail to stop the boat sailing until all crew have reboarded.

9. Reboarding can be undertaken over the windward side of the boat using the righting line as a step or over the transom. A grab rail is positioned on the inner face of the sub deck to assist with pulling yourself back in to the boat.

10. If the person in charge of the boat or the crew are inexperienced in capsizing and righting procedures it is advised to practice drills under skilled supervision and in any event, close to assistance prior to the drill being used in earnest.

11. All crewmembers should wear an approved buoyancy aid at all times while on the water.

Saftey 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 Stratos Keel.

Before You Go Sailing:

1. Ensure you are wearing suitable clothing and safety equipment for the conditions and time of year.
2. Always wear a buoyancy aid or life jacket
3. Make sure a third party knows where you are sailing and how many of you are sailing.
4. Check the weather forecast.
5. Check the time of high and low tides if applicable.
6. Seek advise on local conditions if you are sailing in a new area.
7. Always check the condition of your craft before setting off.
8. Contact with overhead electrical wires could be fatal, exercise extreme caution when raising the mast, launching & sailing.

On the Water

1. Conform to the sailing rules of the road.
2. Look out for changing weather conditions.
3. Never sail beyond your ability or that of your crew.
4. Understand and pratice competent sailing skills and righting techniques.

Care, Maintenance and Service of your LaserPerformance Product

Before rigging your boat, please read and familiarize yourself with the Stratos Keel rigging manual. Failure to adhere to these guidelines could invalidate your warranty.

Maintenance

• 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, including winch gear.

• 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 clevis rings and tape up to stop snagging sails, ropes and clothing and to prevent them from coming undone.

• When refastening screws do not over tighten as this may strip the thread and do not reuse Nyloc 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 and Trolleys/Dollies

• It is highly recommended that a trolley/dolly is used to launch and recover your boat. Dragging your hull up onto a beach or slip way will wear away the gel coat or polyethylene and damage the boat. Also, the hull should not be left on a pebble beach as the hull skin could be dented.

• Trailers should be rinsed with fresh water and checked at regular intervals. It is recommended that trailers be serviced annually. The trailer and road base should never be immersed in water.

• Trailers and trolleys supplied by LaserPerformance are designed to transport the hull in the best possible manner to avoid damaging the hull. For instance, LaserPerformance does not recommend support hulls on rollers except on the keel line and only where there is a reinforced keelson. We also recommend gunwale hung trolleys for our smaller products. Hulls supported by a trolley bunk or wide strap must have the ability to drain water away from the hull. Trolley bunks padded with carpet or foam can cause blistering in the gel coat and changes to the hull color. Please do not transport your LaserPerformance product on a trailer or trolley that has not been specifically designed for the product. Hulls damaged through using an incorrectly designed or wrongly set up trailer or trolley are not covered under warranty.

• When securing your boat to a trailer for transport be very careful that ratchet straps and ropes are not over tightened and that there is sufficient padding under the strap or rope to prevent the hull/deck from being damaged through abrasion or pressure.

• Top covers must not be allowed to "flap" when driving at speed. This can abrade the surface of the hull and damage it. It is recommended if you are towing and plan to use your top cover that an under cover is fitted first to prevent cover flap damage to the top sides of the hull.

• Repairs to the polyethylene or GRP hulls should be undertaken by persons with the relevant equipment and skills. Contact LaserPerformance for advice.

Storage

• Your boat should always be tied down securely to the ground when not in use.

• 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.

• 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.

• Under covers for LaserPerformance products should be produced from a breathable or semi breathable fabric to allow moisture to evaporate away from the hull. This is essential to prevent damage to the hull skin. Also, the hull should never be left in the under cover wet or damp. A combination of moisture and heat over an extended period can also damage the hull. The under cover is designed to protect the hull when being transported and should be removed when the hull is being stored. Typical damage includes small bubbles or blisters, excessive print through of glass reinforcement, foam or wood and color change.

• Rudders and centerboards must never be stored wet in carry/combo bags. This can cause blistering, print through and warpage.

• All our GRP products are designed to be dry sailed, or in other words, stored on dry land. If you intend to leave your boat on a mooring for any length of time it is essential that you apply an osmosis barrier coat. LaserPerformance can recommend a suitable product.

On Water

• When wearing a trapeze harness, take particular care when climbing on to the centerboard and back into the boat after a capsize. The trapeze harness hook could easily damage the hull or deck.

On Water Towing

• Towing your LaserPerformance product at high speed (10 – 20 knots) behind a rib or power boat can seriously damage the hull. Boats damaged in this manner are not covered by the warranty. LaserPerformance recommends a maximum towing speed of 6 knots.

Owner Information

hull identification number

purchased from | date of purchase

contact name | phone #

address:

city / state / county | zip / postal code

hull color: sail #:

registration information (if applicable)

trailer vin #

license plate number

registration number | state / county registered in

insurance information

LaserPerformance equips our Stratos Keel with the highest quality parts available from the top suppliers. We partner with key suppliers to develop top of the line dinghy equipment so your boat will perform at the highest level possible when sailed with our factory supplied rope, sails, and hardware. Shop online at shop.laserperformance.com or at an authorized LaserPerformance dealer to be sure you are getting genuine LaserPerformance parts and accessories. Visit www.laserperformance.com to find your local dealer.

LaserPerformance™

LaserPerformance NORTH AMERICA
300 Highpoint Avenue
Portsmouth, Rhode Island 02871
t +1 800 966 SAIL
f +1 401 683 0990

LaserPerformance EUROPE
Station Works, Long Buckby
Northamptonshire NN6 7PF
United Kingdom
t +44 (0) 1327 841600
f +44 (0) 1327 841601

LaserPerformance ASIA
Room 3415
China Merchants Tower
Shun Tak Centre
No. 168-200 Connaught Road Central
Hong Kong
t +852 2902 2818
f +852 2587 7868

LaserPerformance AUSTRALIA
t +61 (0) 3 9016 4151

LaserPerformance MIDDLE EAST
T5 Middle East LLC
Dubai Investment Park
PO Box 38442
Dubai, UAE
t +971 (4) 885 7601

LASERPERFORMANCE.COM