



**Assembly manual**

**Operating instructions**

**Small craft – Owner's manual**

(ISO 10240:2004)



**X-Cat Basic / Sail / RowMotion / RowMotion Pro**

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## 1. Introduction to small craft owner's manual

This manual has been compiled so that you are in a position to enjoy your boat in safety.

In addition to detailed information about the boat itself, information is also provided on accessories supplied/fitted as well as operating instructions.

Please read this information carefully and make yourself acquainted with the boat before using it.

Make sure that the expected wind and water conditions are suitable for your boat and that you and your crew are in a position to handle the boat in the prevailing conditions.

The manufacturer cannot assume responsibility for changes that have been made to the boat without their permission.

Make sure that your boat is always properly maintained and check for wear that can take place over time, as a result of frequent use or incorrect operation of the vessel.

Every boat, regardless of how strongly it is built, can sustain serious damage if it is subjected to improper handling. This can be avoided if the boat is looked after properly. Make sure that the speed and direction of the boat are suitable for the conditions on the water.

All personnel should wear a safety jacket (life jacket/personal buoyancy aid) while on-board. Please note that in some countries there are legal requirements specifying that life jackets are to be worn at all times in compliance with national legislation.

*PLEASE KEEP THIS OWNER'S MANUAL IN A SAFE PLACE AND HAND IT OVER TO THE NEXT OWNER IF YOU SELL THE BOAT.*

## 2. Description / Technical data

### a. Model code

X-CAT (Cross-Cat) row and sail catamaran

### b. Design category

Design category: **C**

Boats in design category C are designed for use in wind conditions up to Beaufort scale 6 with the corresponding wave height. Such conditions can occur on exposed inland water, estuaries and coastal water in moderate weather conditions.

### c. Weight of boat unladen, and optional extras

#### Plain boat:

Weight of plain boat without options: 55 kg (*consists of: 1 component weighing 15 kg, 2 components weighing 17,5 kg each and 2 components weighing 2.5 kg each*)

#### Options:

Weight of optional forward rowing system RowMotion-Pro incl. roller seat and foot board: 13 kg

Weight of optional reverse rowing system RowMotion-Classic incl. roller seat and foot board: 7 kg

Weight of optional sailing rig SAIL complete with rudder: 17 kg

### d. Maximum recommended payload

Maximum recommended payload: 240 kg

This value includes the weight of no more than 3 people plus provisions, all personal belongings and any equipment that is not included in the weight of the plain boat unladen.

The recommended maximum number of people must not be exceeded.

Regardless of the number of people on-board, the total weight of people plus equipment must never exceed the maximum recommended payload. The load must be placed carefully so as to distribute the load evenly to ensure the designed trim is maintained.

### **e. Weight of the boat fully laden**

Weight of the boat fully laden: 325 kg

Consisting of plain boat (55 kg) + forwards rowing system RowMotion-Pro (13 kg) and sail option (17 kg) + maximum load (240 kg)

### **f. Main dimensions of the boat**

LH = Lmax = 5.0 m  
BH = Bmax = 2.08 m

### **g. Bridge clearance height and draught**

Bridge clearance height and draught

- 1) Maximum height unladen with mast: 4.8 m
- 2) Maximum draught when fully laden: 0.2 m

### **h. Main propulsion**

Main propulsion: oars or sails

Optional: outboard motor up to max. 2.5 kW

### **i. Sail surface area of SAIL option**

Main sail 5.2 m<sup>2</sup> and jib 3.2 m<sup>2</sup>

## j. Position of identification number and builder`s plate

The builder`s plate is located one on of the cross bar



The identification number is located at the rear side of the hull after the flange.



### 3. Declaration of conformity

#### Declaration of conformity for recreational small craft in terms of design and construction in accordance with directive 2013/53/EU

Name of boat manufacturer:

Row & Sail GmbH  
Gewerbezeile 9  
4040 Lichtenberg / Linz  
Austria

Module used for design and construction:                    A

Identification number:

(please enter)

AT - XCT - . . . . . | . . | . . |

Model code:

X-Cat (Cross-Cat)

Type of boat:

rowing boat and sailing boat

Type of hull:

multi-hull

Main type of propulsion:

oars/sculls/sails or outboarder with up to 2,5kW

Building material:

aluminium + synthetics

Maximum payload:

240 kg

(This value includes the weight of no more than 3 people plus provisions, all personal belongings and any equipment that is not included in the weight of the plain boat unladen.)

Design category:

**C**

Hull length

Lh:     5.00 m

Width

Bh:     2.08 m

Draught

T:      0.15 m



This declaration of conformity is issued as the sole responsibility of the manufacturer. I hereby declare on behalf of the manufacturer that the vessel described above meets all the specified requirements.

Name and position: Ing. Jochum Bierma - Managing Director

Signature:



Place, date: Lichtenberg/Linz, 14/01/2014

Safety requirements according to annexes I.A & of directive.

Applicable ISO standards:

|  |                      |
|--|----------------------|
| Small craft - Principal data:            | EN ISO 8666: 2002 *  |
| Small craft - Identification code - CIN: | EN ISO 10087: 2006 * |
| Small craft - Builder's plate:           | EN ISO 14945: 2004   |
| Small craft - Owner's manual:            | EN ISO 10240: 2004   |
| Small craft - Stability and freeboard:   | EN ISO 12217-3: 2009 |
| Small craft - Buoyancy:                  | EN ISO 12217-3: 2009 |
| Small craft - Maximum load capacity:     | EN ISO 14946: 2005   |

Version: September 2017

## 4. How to set up the X-Cat Basic

### X-Cat Basic components



1. Hulls

3. Cross-bars

2. Side beams and centre beam  
rolled up with trampoline



1. Insert one of the cross-bars into the recesses at the front end of each hull. The spigot has to point to the middle of the boat.



2. Slide the centre beam (with the arrow pointing to the front) onto the cross-bar and gradually lower the free end until its weight is supported completely by the cross-bar



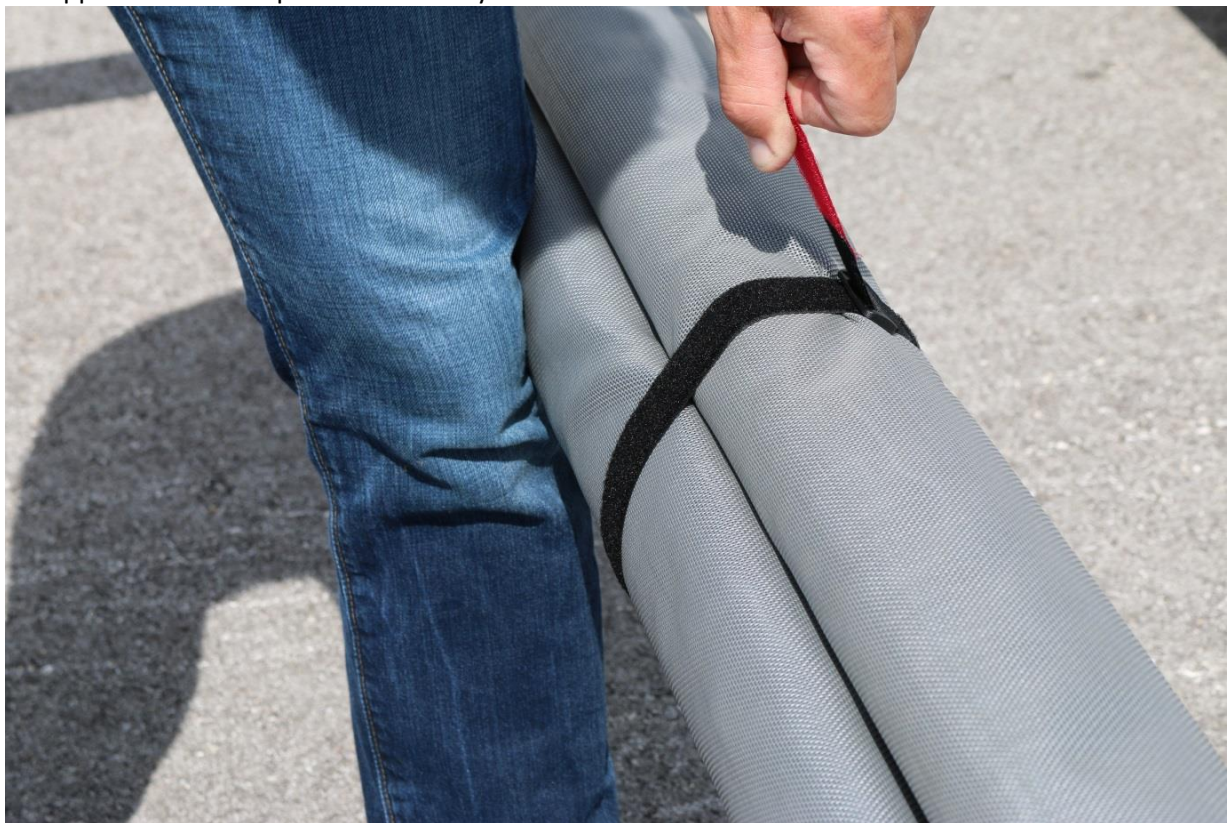
3. Connect the rear cross-bar and insert into the hulls



4. Engage all levers



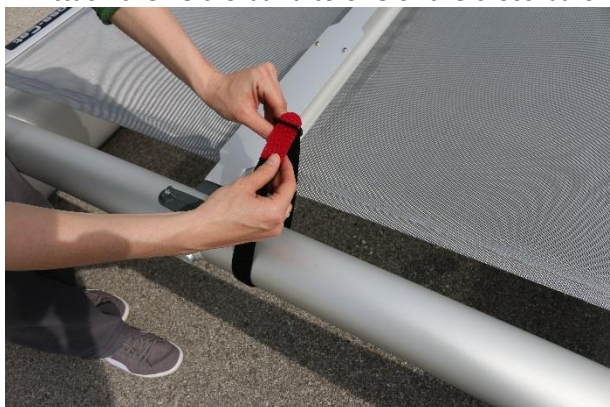
5. Support the rolled-up side beams on your knee and undo the velcro band



6. Next, unroll the first side beam and push down over the retention pins until it clicks into place. Then, unroll the second side beam and click into the retention pins.



7. Attach the velcro band to one of the cross-bars



## 5. How to dismantle the X-Cat Basic

1. Release the retention pins, roll up the first side beam until it rests on the centre beam. Then, roll up the second side beam (anti-clockwise) until it reaches the centre beam. Support on one knee and secure with velcro band.



2. Release the 4 levers on the cross-bars



3. Lift one of the cross-bars evenly and detach from centre beam



4. Detach rolled-up trampoline from second cross-bar



5. Remove the rear cross-bar from the hulls (Caution: the hulls may fall over)



## 6. How to set up the X-Cat Sail

### Sail option components



1 Main sail

2 Jib sail

3 Upper and lower section of mast

4 Wind vane

5 Shroud blocks

6 Main sheet

7 Sheet cleat mounting

8 Rudder

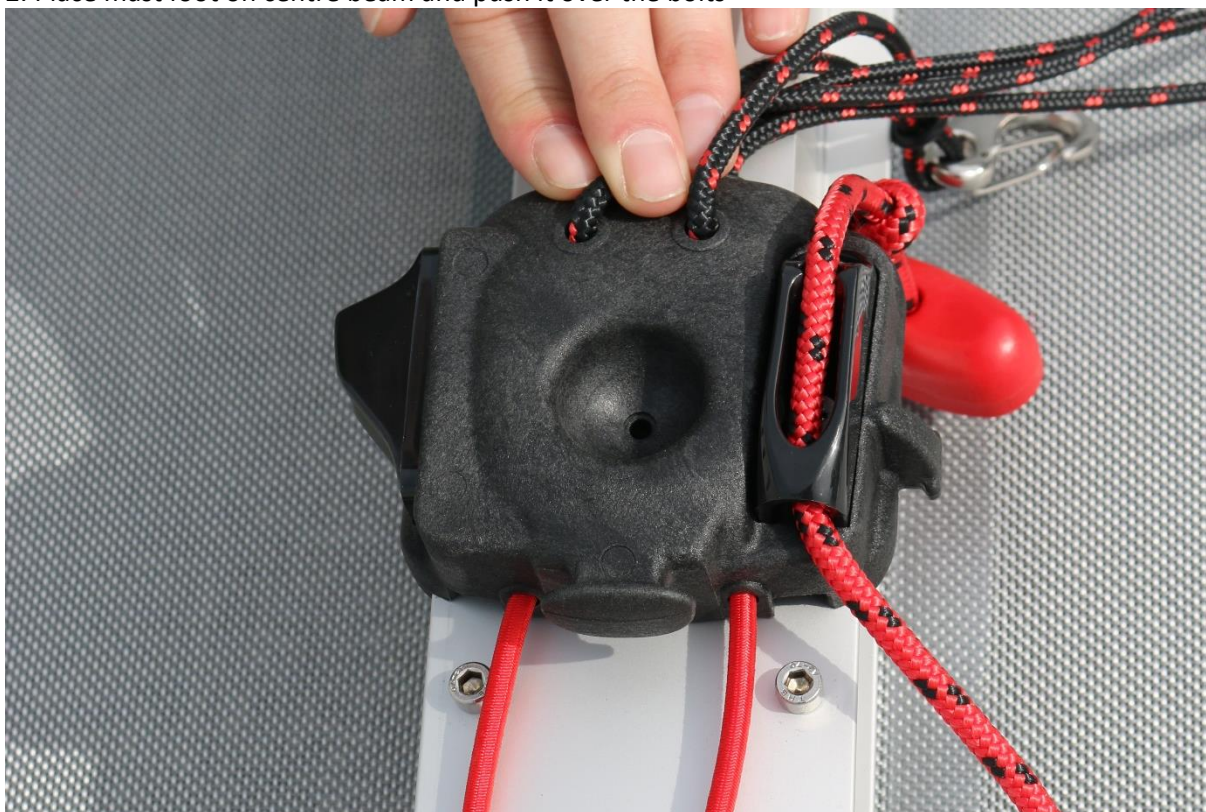
9 Jib sprit with mast foot

10 Anti capsizing float

1. Hook in jib sprit

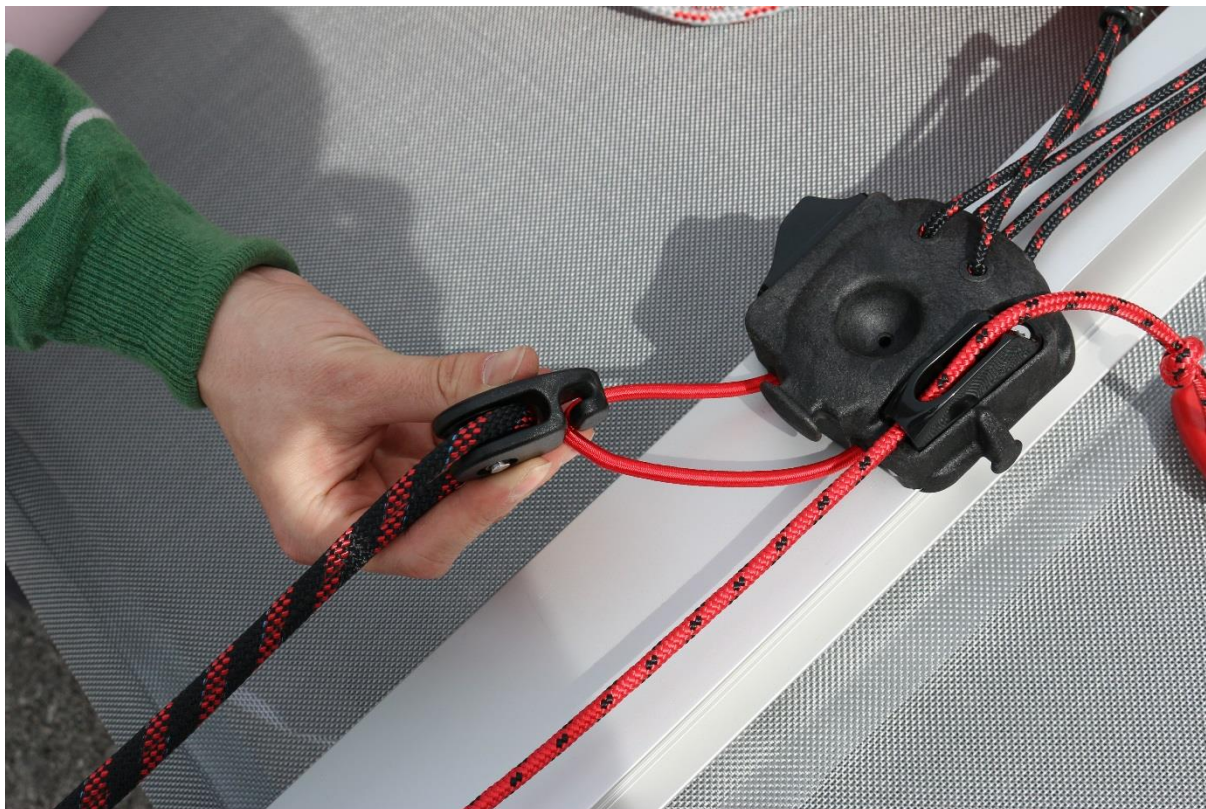


2. Place mast foot on centre beam and push it over the bolts





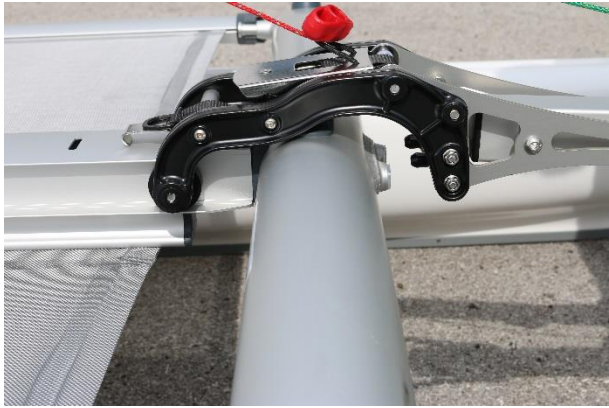
3. Fit endless line to mast foot



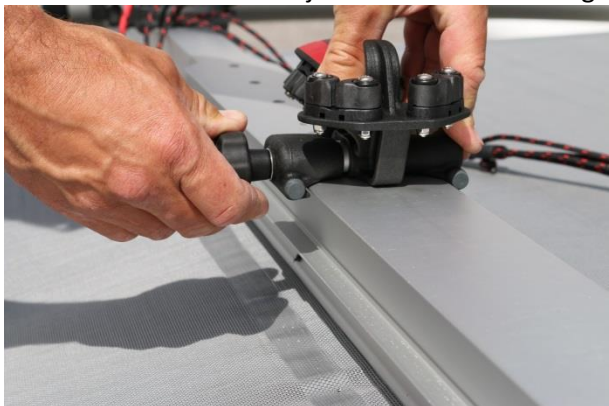
4. Fit the port and starboard shroud blocks



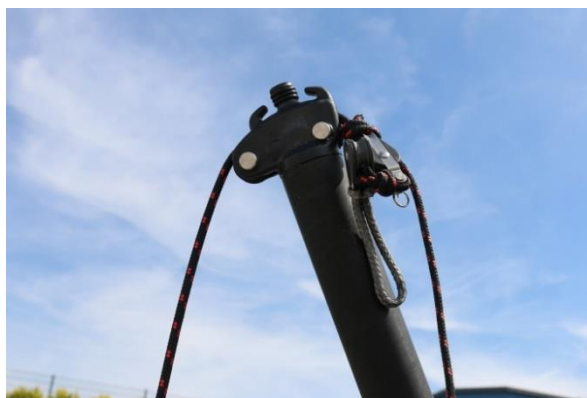
5. Attach the rudder, insert the belt hook into the slot and secure with lever



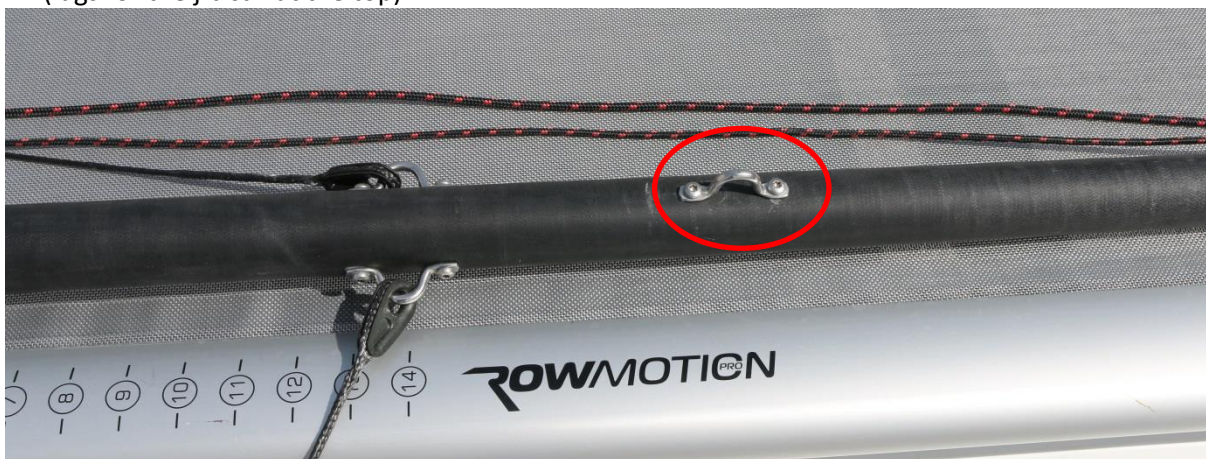
6. Fit the main sheet and jib sheet cleat mounting to the centre beam



7. Release the rope grip, take the shrouds from the top of the mast and pull the halyard until the pulley is right at the top.



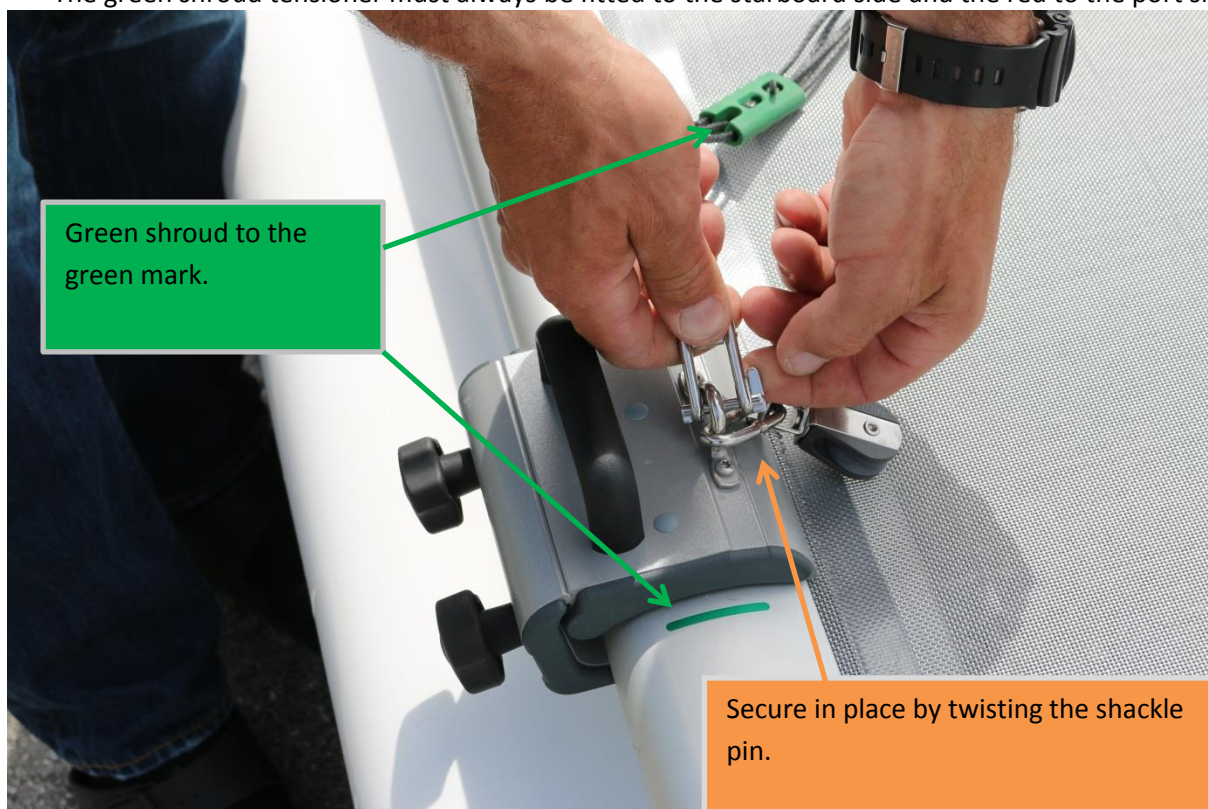
8. Lay the top section of the mast on the boat and insert the lower section of the mast. (lugs for the jib sail at the top)



9. Secure the rope grip and halyard S-hook to the mast using the elastic line.



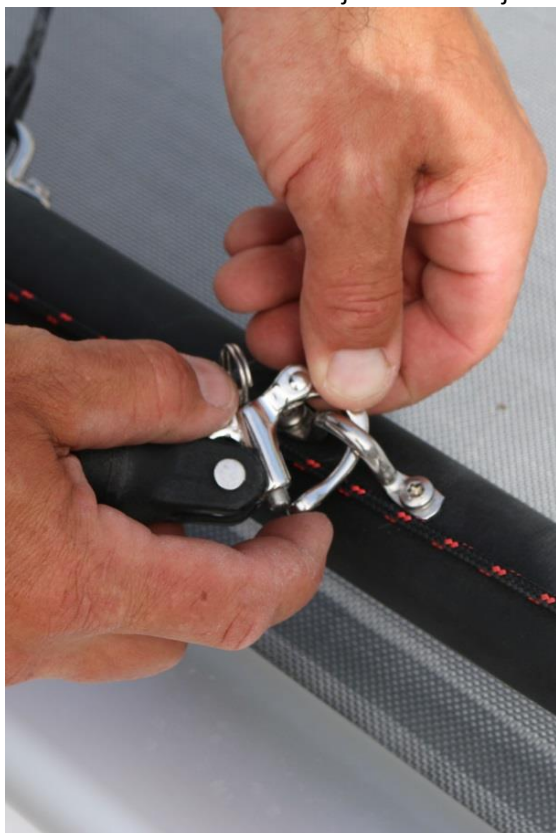
10. Secure the shrouds to the port and starboard blocks using the shackles.  
The green shroud tensioner must always be fitted to the starboard side and the red to the port side.



11. Insert the burgee



12. Fit the jib sail to the lug on the mast using the quick-release shackle.  
Fit the front end of the jib sail to the jib furler using the quick-release shackle.



13. Raise the mast and insert the base into the mast foot



14. Thread the jib sheets through the rollers on the shroud blocks and tie the ends together using a simple knot



15. Undo one end of the barber hauler, thread through the cleat block and then connect up again



16. Lift the bottom end of the mast slightly to thread the mail sail loops onto the mast, starting with the top of the sail. NOTE: blue dots must be on top.



17. Pull the jib sprit line until the jib furler is right at the end of the jib sprit and then secure the line in the clam cleat

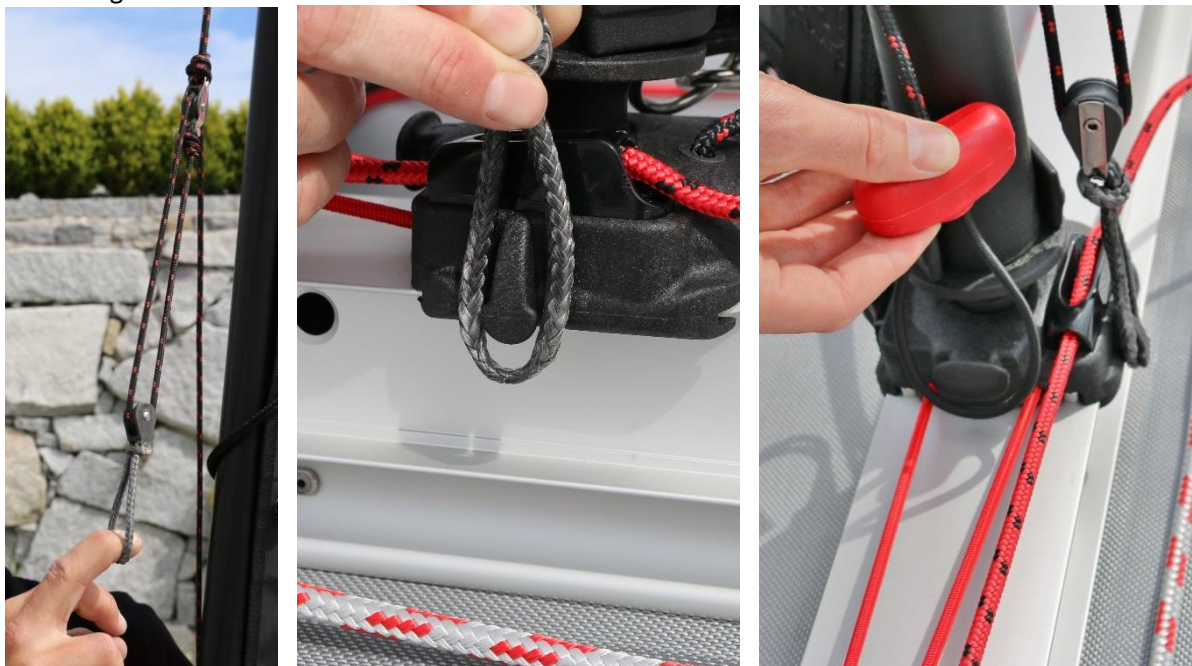




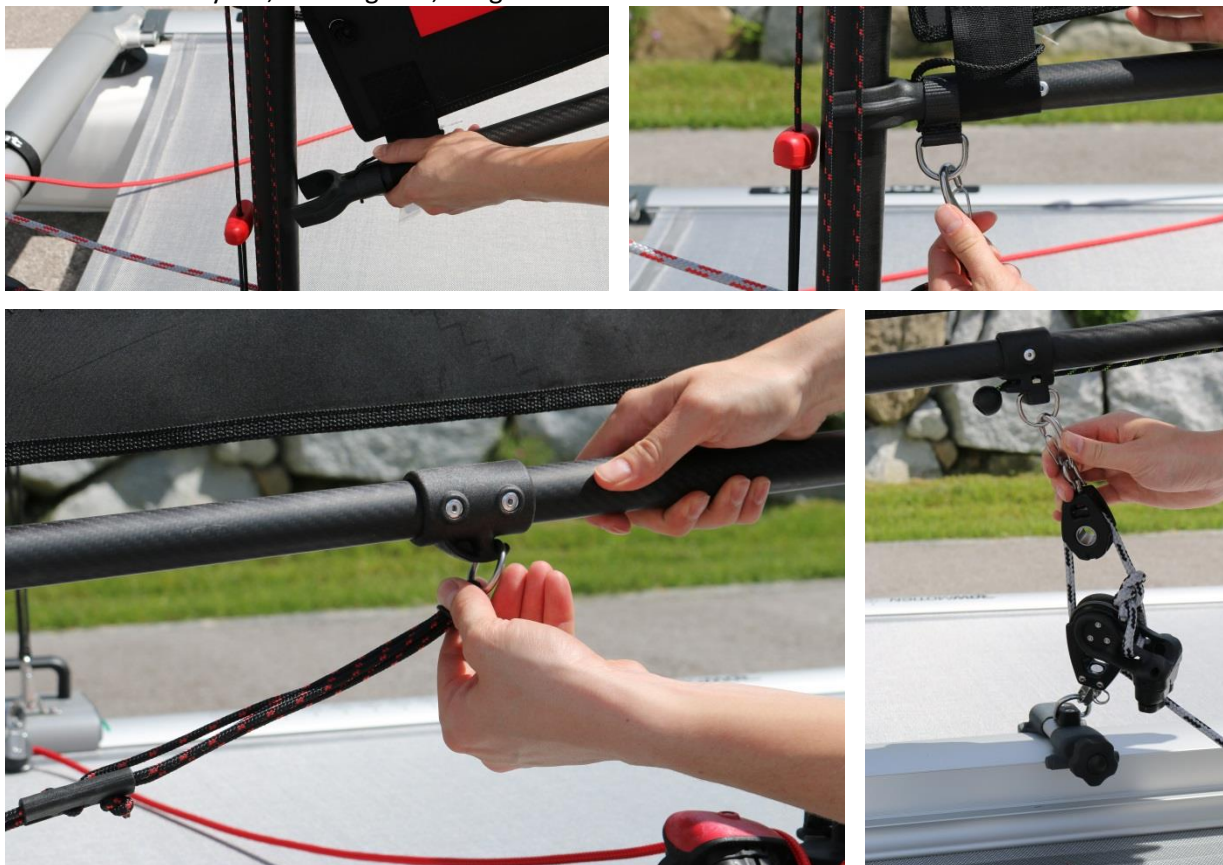
18. Take S-hook and hook into top of main sail



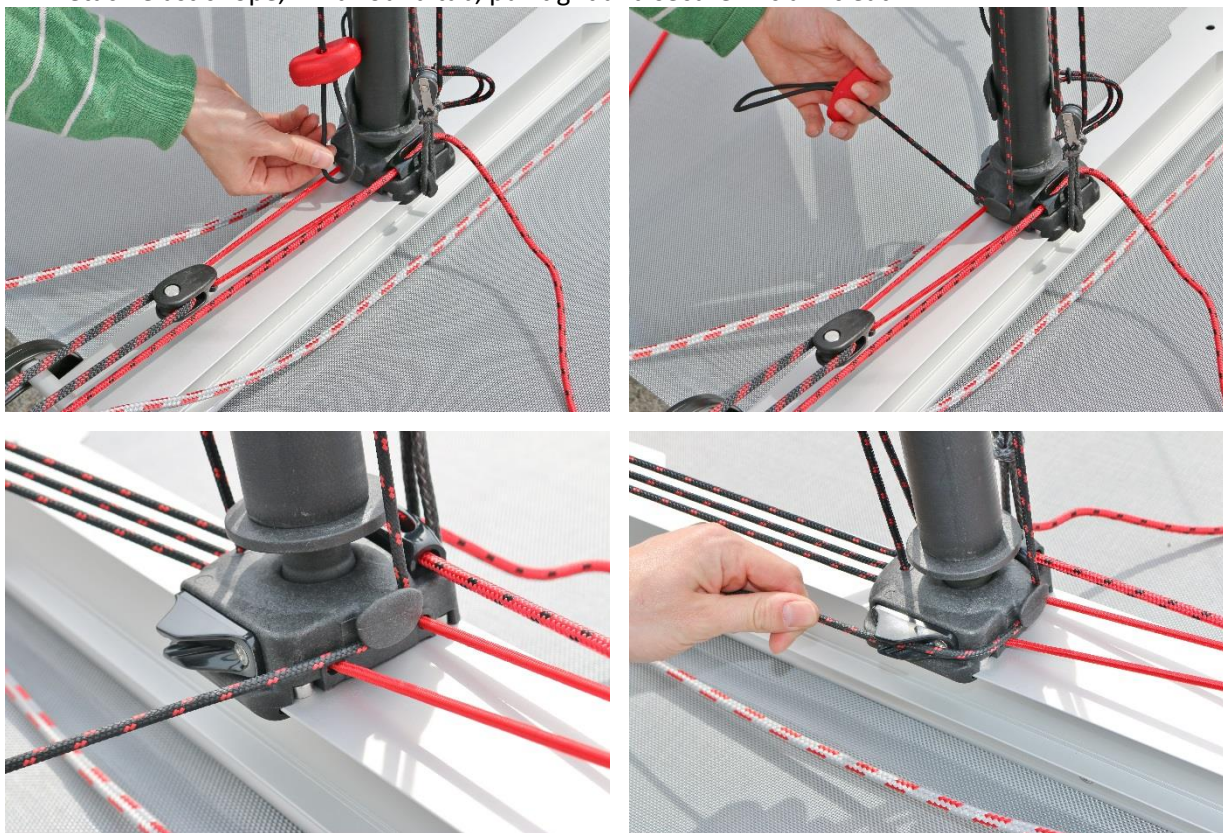
19. Raise main sail and pull halyard pulley right down to hook into mast foot.  
Hang elastic line on front of mast foot



20. Attach boom yoke, Cunningham, vang and main sheet

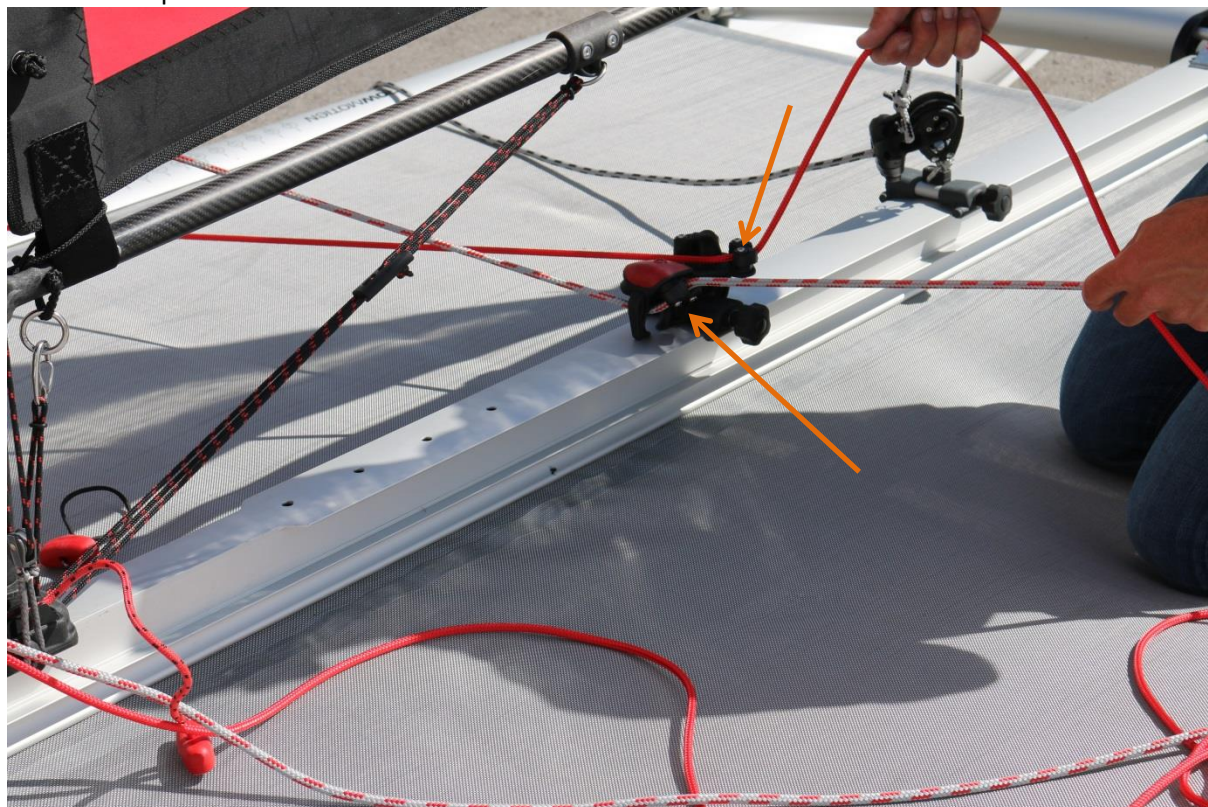


21. Detach elastic rope, wind round tab, pull tight and secure in clam cleat



## 7. How to dismantle the X-Cat Sail

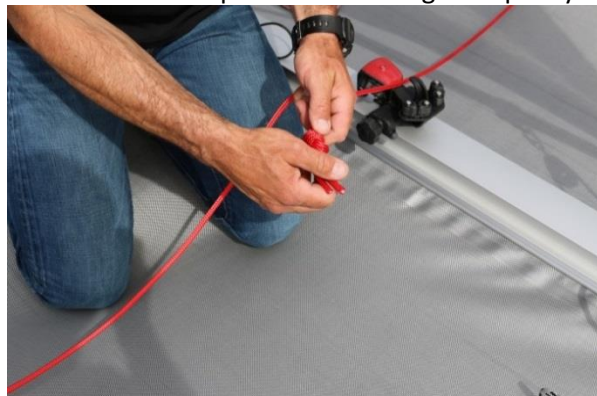
### 1. Release ropes from cleats



### 2. Roll up jib sail and secure endless line in the cleat



### 3. Undo knot and pull sheets through the pulleys



4. Undo shackles and pull out of cleats



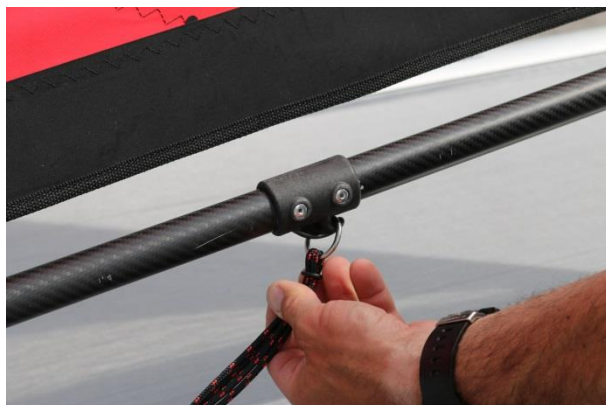
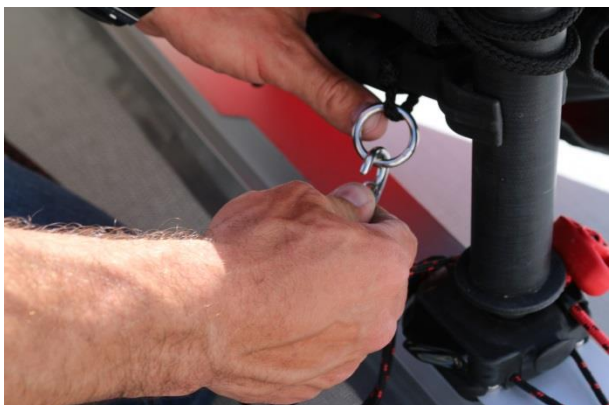
5. Hold the sheets taught while pulling on the endless line until the sheets are completely rolled up. Then secure the sheets with 2 half hitches.



6. Release halyard and lower the main sail



7. Detach boom yoke, main sheet, Cunningham and vang.



8. Loosen jib sprit line



9. Remove main sail from mast by lifting the mast slightly.



10. Roll up sail (start in the middle) and secure with velcro band



11. Lift mast out of foot and lay down



12. Undo shackles connecting the jib sail to the jib furler and the mast



13. Detach the shrouds from the shroud blocks



14. Separate the upper and lower sections of the mast



15. Remove the burgee

16. Release and remove the shroud blocks

17. Remove the jib sprit and the mast foot

18. Release the lever on the rudder, undo the hooks and remove the rudder.

19. Remove the jib sheet and main sheet cleat block

## 8. How to set up the X-Cat RowMotion Pro

### RowMotion Pro components



1. Forward rowing oars

2. Stopper

3. Roller seat

4. Foot stretcher unit

5. Small Bag (Bag for stopper, roller seat and foot stretcher)

1. Put the roller seat on the center beam.



2. Put the foot stretcher on the center beam and push it backwards until the retention pin clicks in.





3. The foot stretcher could be adjusted to the foot length by the retention pin.



4. Mount the stopper on the correct end position on the center beam.

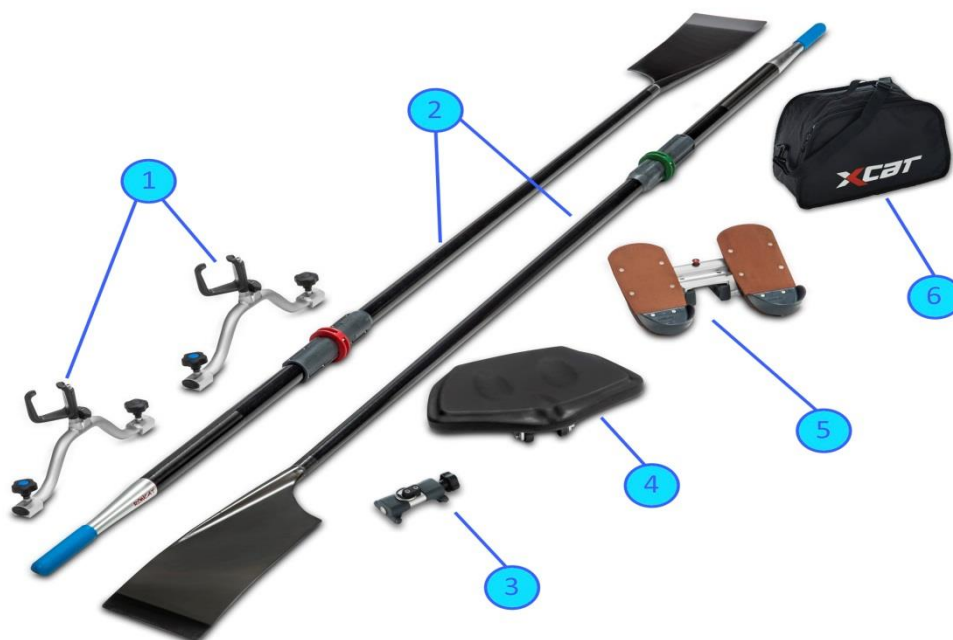


5. Mount the forward rowing oars at the numbers on the side beam. (Always put the red oar to the red marked side beam and the green oar to the green marked side beam)



## 9. How to set up the X-Cat RowMotion

### X-Cat RowMotion components



1. Rowlocks

2. Rowing oars

3. Stopper

4. Roller seat

5. Foot stretcher unit

6. Small Bag (Bag for stopper, roller seat and foot stretcher)

1. Put the roller seat on the center beam.



2. Put the foot stretcher on the center beam and push it backwards until the retention pin clicks in.



3. The foot stretcher could be adjusted to the foot length by the retention pin.



4. Mount the stopper on the correct end position on the center beam.



5. Mount the rowlocks on the side beams. (Blue handle to blue nut)



6. Put the Oars into the rowlocks. (Red oar to red marked side beam, green oar to green marked side beam)



## 10. How to install the bow-mesh

1. Stick the trunnion of the lateral mesh-rods into the mounting part on the jib sprit.



2. Fix the other end of the lateral mesh rods at the cross beams by the retention pin.



3. Stick the rear mesh-rod into the hole on the center beam.



4. By bending the rod you can mount the rear rod on the side beams.



## 11. Righting the boat after capsizing

1. Remove ropes of the headsail cleat-holder



2. Climb to the upper hull



3. Grab the jipsheet



4. Step back to the lower hull



5. Lean back as far as possible



6. The X-Cat raises into upright position



## 12. Entering the boat on water

The easiest way to enter the boat on water is directly over the hulls like shown on the picture.





## 13. How to stow the mast

1. Place the shrouds over the top of the mast



2. Pass the shrouds around the yoke and then hook the S-hook into the shackles



3. Then pass the halyard around the yoke



4. Back up over the top of the mast and secure in place with the rope grip and elasticated rope



## 14. How to use the jib sail and jib sail cleat

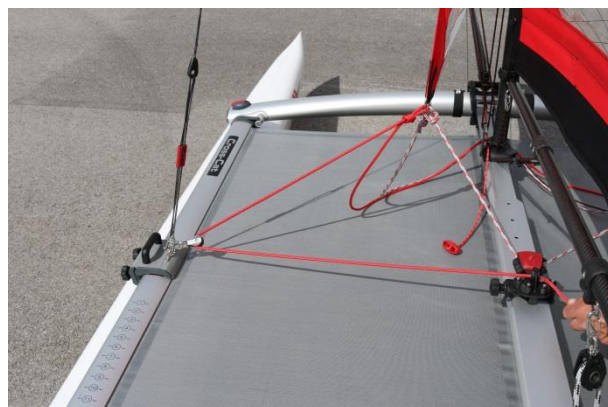
To unfurl the jib, take the endless line out of the clam cleat and pull on the red jib sheet



You can then fix the sheet in the cleat block

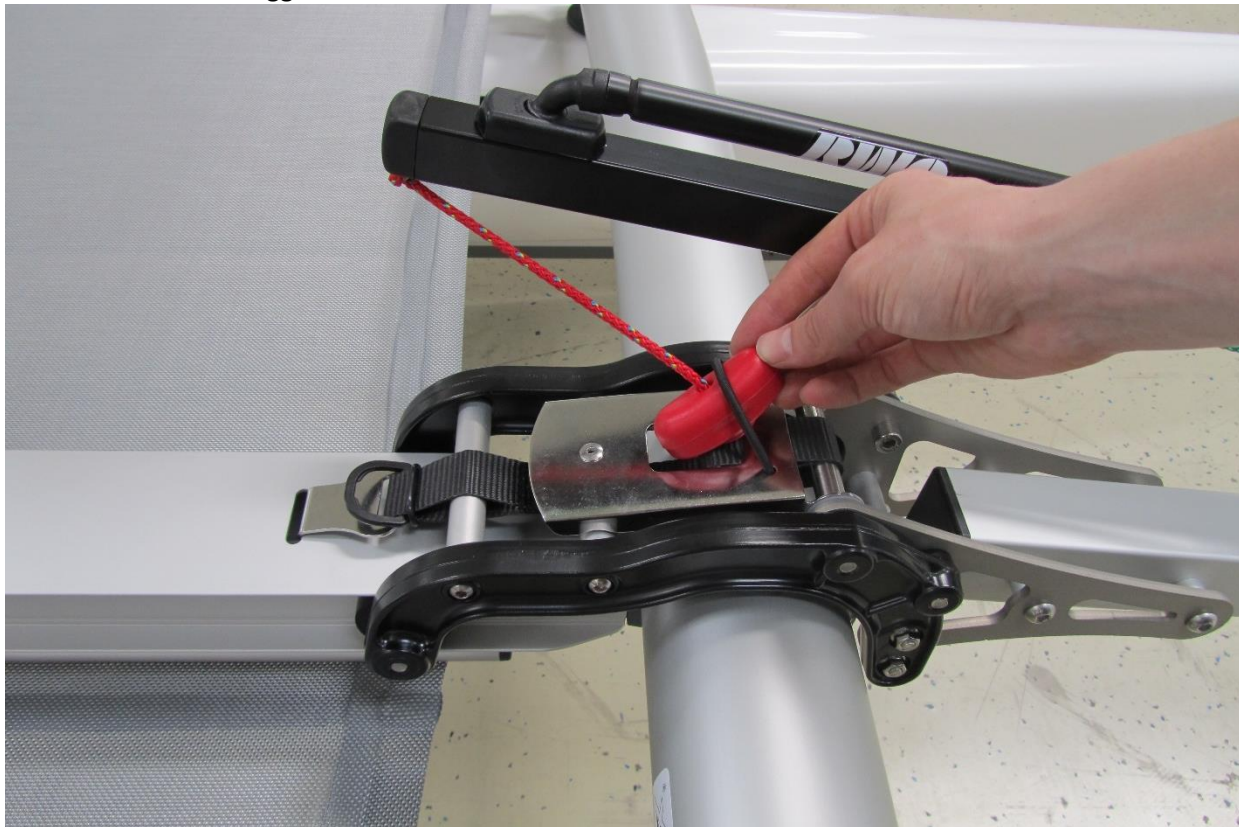


To fix the jib sail on one side, secure the red sheet in the cleat block. Using the grey/red hauler, you can then pull the jib sail closer to the mast if required. This enhances performance when sailing close to the wind.



## 15. How to use the rudder

1. Release the tiller toggle



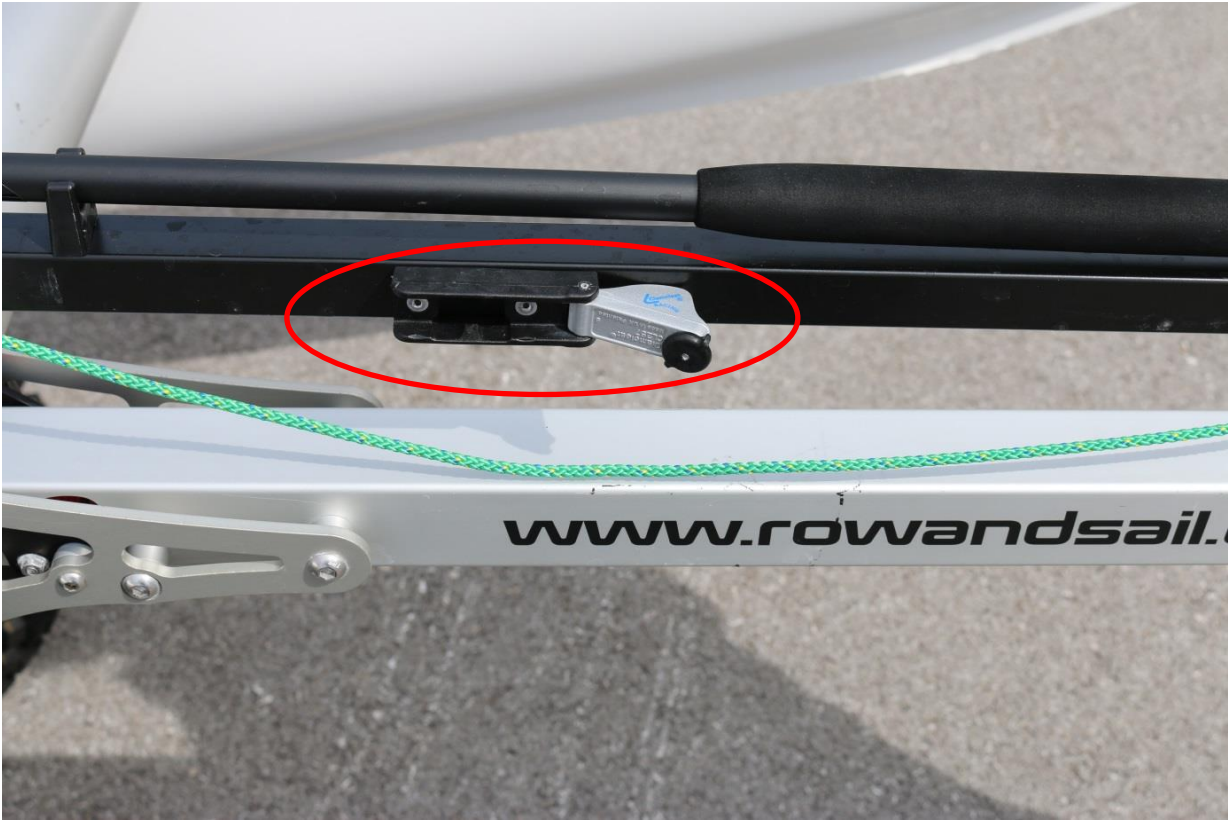
2. Pull the knot out of the slot and carefully lower the rudder



3. When the rudder is lowered, secure the green line in the safety cleat and move the safety cleat forwards.



The safety cleat will release if the rudder collides with an underwater obstruction or runs aground.



To reset the rudder you just need to press the cleat into position and secure the green line in the cleat.



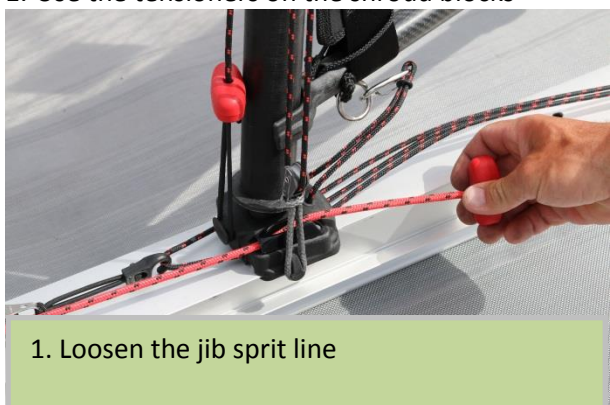
## 16. How to tighten the shrouds

As a rule, the shrouds are too loose if they sag when you lift the front end of the X-Cat slightly by the jib sprit.

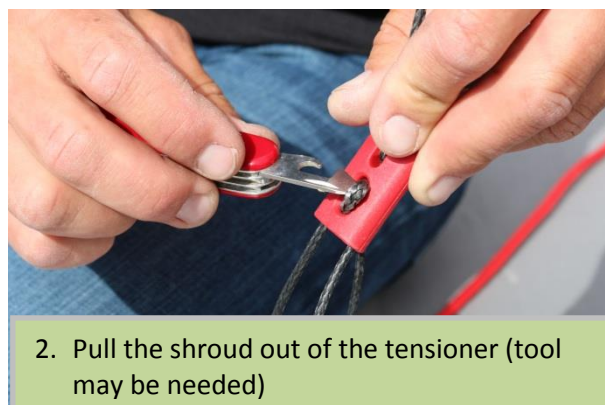


If this is the case, there are three different ways of tightening the shrouds.

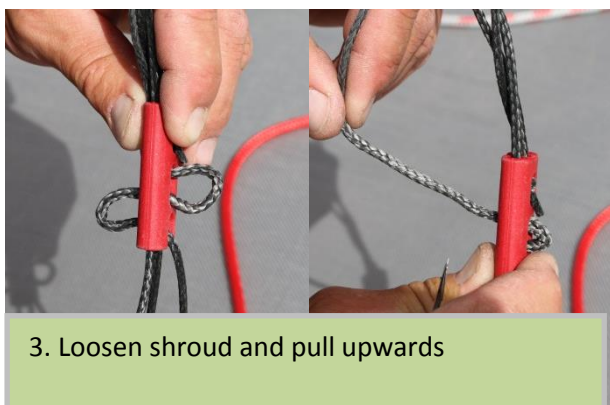
### 1. Use the tensioners on the shroud blocks



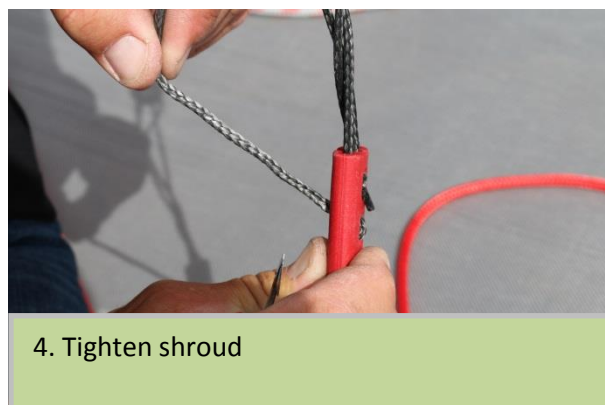
1. Loosen the jib sprit line



2. Pull the shroud out of the tensioner (tool may be needed)



3. Loosen shroud and pull upwards



4. Tighten shroud

2. Attach jib to the second link on the jib furler (instead of the first link).  
This should only be used as a short-term solution.



3. Tighten the jib sprit cables



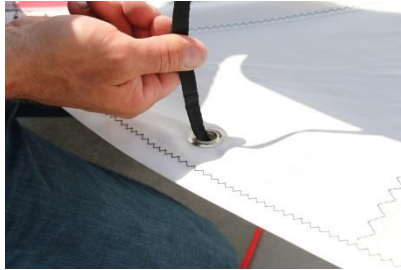
## 17. How to install the anti-capsize protection

Thread the retention belt in the following sequence:

1. through the first float



2. through the sail



3. through the second float



4. back through the second float



5. back through the sail



6. back through the first float



7. into the buckle



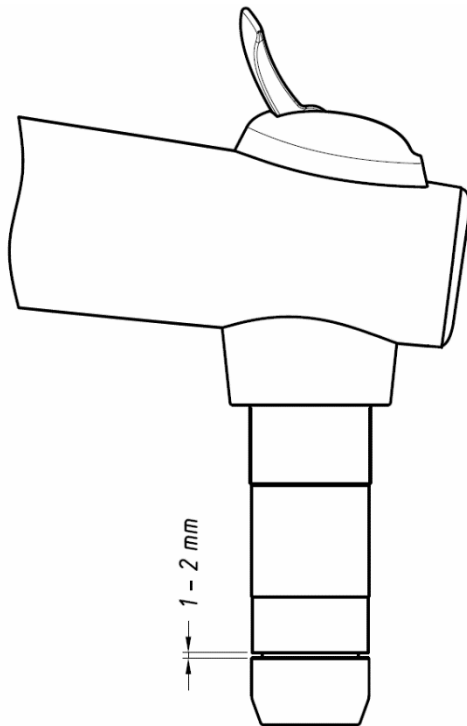
8. tighten and close the buckle



## 18. Description of the flange spanner

### a. Adjusting the cross bar

The clamping force has to be adjusted so, that the clamping lever is still good to open and to close, but the fixed cross-bar could not be pulled out of the hulls. Additionally the contact surface of the lever should be greased regularly that it keeps running smooth. The sketch below shows an approximate value for clamping force adjustment.



For adjusting follow these steps:

1. The nut to adjust clamping force is in the spigot.





2. Put the provided flange spanner onto the nut.



3. For adjusting turn the spanner into the necessary direction. Clockwise force gets increased, anticlockwise force gets reduced.



## a. Opening up the hulls

If there is water in the hulls, you can open them easily with the provided flange spanner.

Follow these steps:

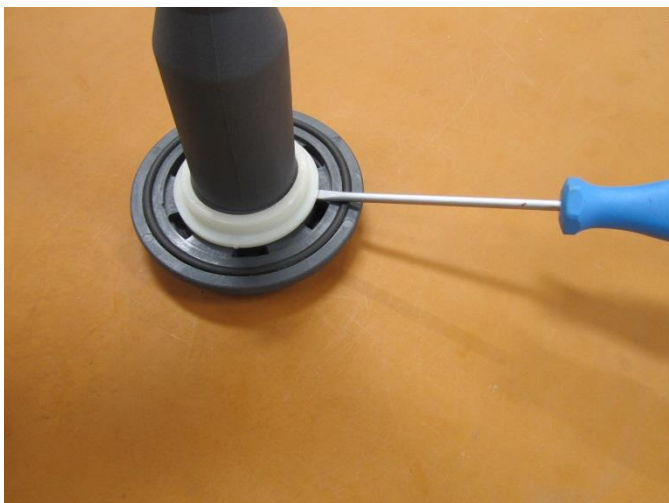
1. Open the flange by twisting anticlockwise and pull them out.



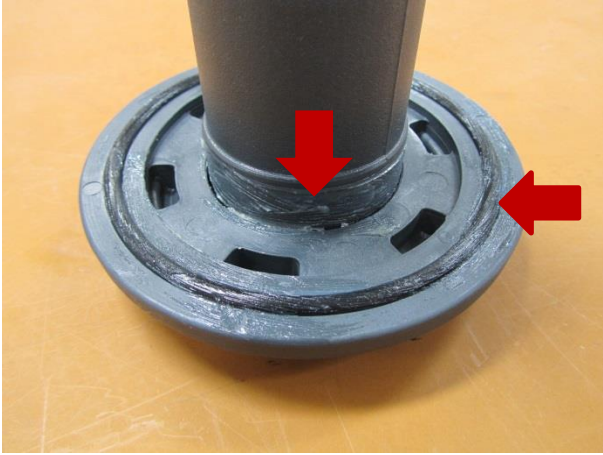
3. That the water could run out of the hulls, turn them around

**Attention:** Do not leave them opened for days!

4. For closing the hull, take off the seal and put it onto the hull.



6. Before screwing the flange in again, it is important to grease the marked positions.



7. put the flange into the hulls and close them by twisting the spanner clockwise. The front and the rear flange have to be tightened with the same force.



## 19. Overview of knots

Bowline

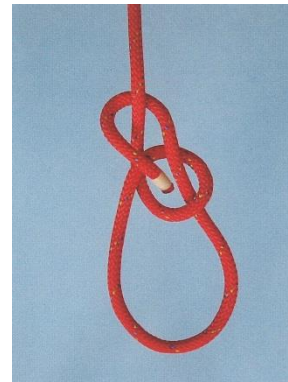
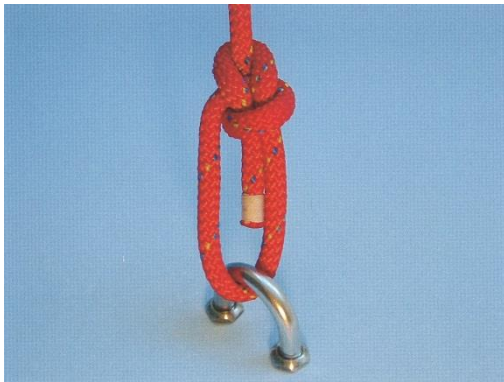
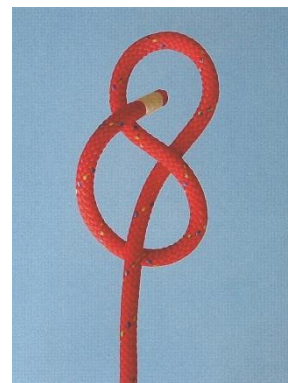
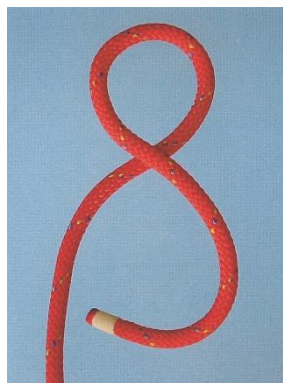
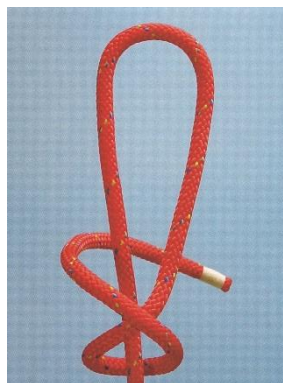


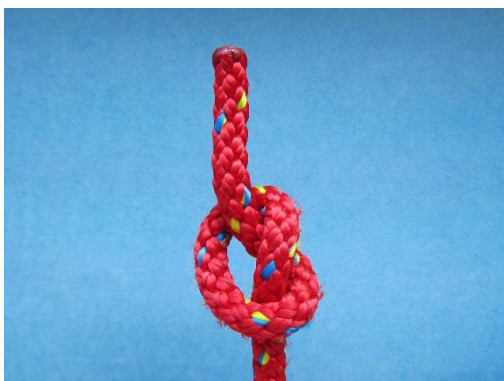
Figure eight knot



English knot

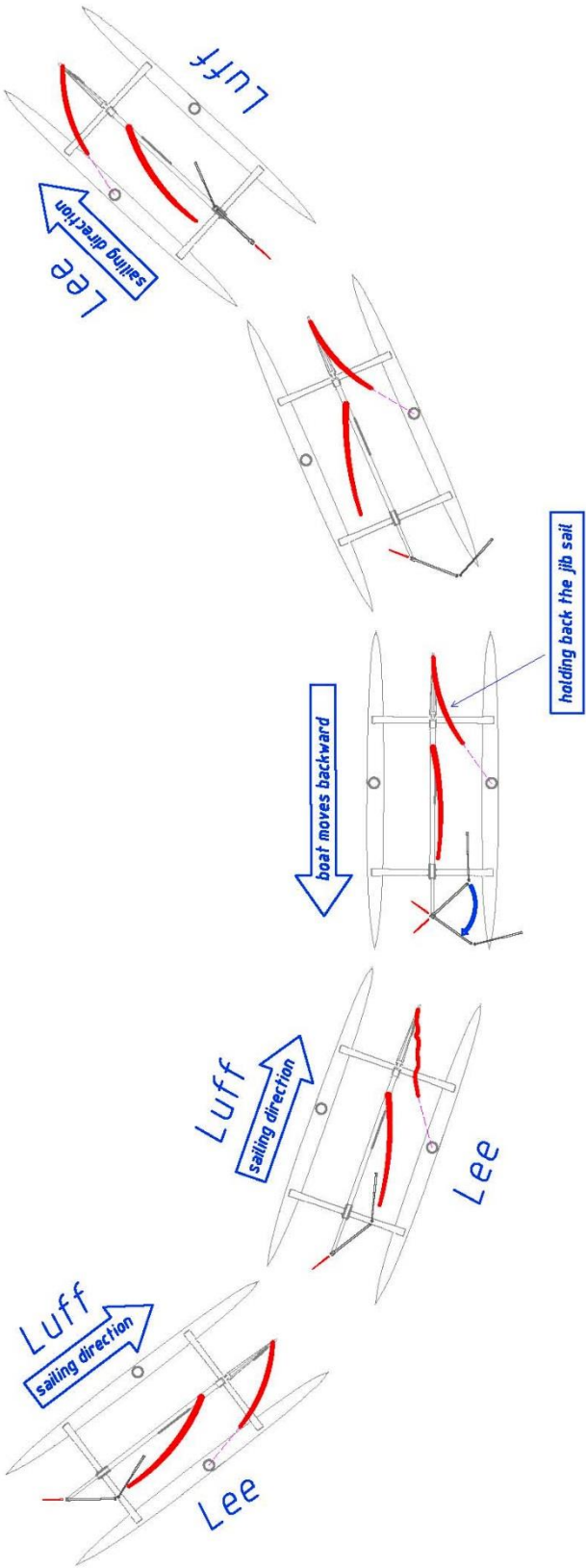
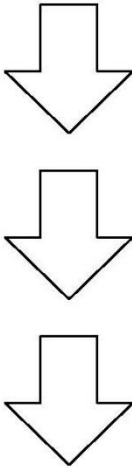


Overhand knot



# 20. Description of tacking sequence

wind direction



## How to execute a perfect turn with the X-CAT

Do not move the rudder too suddenly at the start of the turn. You might want to turn away from the wind just before starting the turn in order to build up a bit more speed. Move your body forward as far as you can reach with the tiller extension as you initiate the turn. In a moderate wind and with a bit of practice, the boat will turn very smoothly with the jib sail turning the bows automatically as soon as you pass through the wind.

If the boat stops during the turn due to insufficient speed, let the rudder go and shift yourself as far forward as you can. The rudder will swing over to the leeward side as soon as the bows have crossed the wind. The stern will then move into the wind after the rudder has swung over and the jib sail will be blown to the other side. As the boat finishes the turn, move yourself over to what is now the windward side, pull the jib sail sheet in on the leeward side, and off you go. The boat is now headed on a new course and the rudder sets itself straight.

This is a key characteristic of the X-CAT. It doesn't work that smoothly on a standard CAT. A standard CAT has rudders on each of the hulls and they are not able to turn at such an angle. Their rudder angle is max. 90° in either direction. That is why, on a standard catamaran, the tiller has to be held to turn the boat into the wind by bringing the stern around. The disadvantage is that you cannot let go of the rudder if you want to shift your weight: this is only possible with a second person on board.

On the X-CAT, you can execute a turn without using the rudder by simply shifting your weight forward. The boat turns into the wind, the rudder follows and swings over to the windward side. The boat comes to a standstill (very quickly in a strong wind), turns as the rudder swings over and brings the stern onto the windward side.

That works because the stern is further out of the water than the bow your weight is shifted forward. As soon as the jib sail has passed through the wind it also brings the bow round to the leeward side. You can now shift to the other side of the boat, passing the mast, release the jib sail sheet and pull the jib over to the leeward side.

The boat picks up speed, the rudder straightens itself and you can grab the tiller again (or not, because you can also control the trim simply by shifting your weight - see below).

It is thanks to these characteristics that you can control the X-CAT by shifting your weight.

Stay right back and the boat will stay on course, or drift slightly leeward.

Move forwards and the boat steers into the wind - great! - especially if you are out on the water alone, because you can take a break for a drink or take a photo, etc.

(See photo of me in Croatia where I am alone on the boat taking photos, without holding the tiller)

You can also take away the Barber hauler (grey/red line for adjusting jib sail trim) before starting the turn so that the person in front can swap sides by passing in front of the mast during the turn without the lines getting in the way.

It is also a good idea to take in the red jib sheet before turning to keep the jib on the windward side during the turn. As a result, the jib applies greater force during the turn.

It takes a bit of practice to take full advantage of this boat's unique manoeuvrability, but you will very quickly appreciate the enjoyment of sailing your own X-CAT!



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