

Ducky



DUCKY 16 CATAMARAN MANUAL

OWNER:

Full Name:

.....

Address:

.....

.....

.....

Owner of
Ducky-16 №

UA-UKN D16

.....

has read and accepted for execution of instructions of this "Manual"

.....

signature

Owner's Copy

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Ukon-A Co., Ltd. Maker's Copy

GENERAL INFORMATION

1. Purpose

Sailing-motor collapsible catamaran designed for boating, brief cruises or rides with sails or outboard motor. Commercial transportation of passengers is not allowed.

2. Key Features

Length Overall, m	4.80
Width Overall, m	2.30
Width of Hull, each, m	0.54
Full Displacement Draft (Centerboard is set down), m	0.86
Full Displacement Draft (Centerboard and Rudder are lifted), m	0.18
Height Overall, m	6.40
Light displacement, kg	65
Load Capacity, kg	350
Sail Area, m ² :	
Jib	1.8
Main Sail	6.2
Gennaker	10
Allowable Outboard Motor Power, kW	2.0
Number of Crew (minimum / maximum), pers.	1/4
Operating Pressure in Floats, bar	0.15
Approximate assembly time, min.	35
Approximate disassembly time, min.	25
Packing Dimensions:	
Packing 1, m	1.80 x 0.40 x 0.25
Packing 2, m	1.80 x 0.25 x 0.25
Packing 3, m	0.8 x 0.4 x 0.3

3. Stability and Unsinkability

Catamaran is highly stable, and the capsizing is unlikely for most cases with wise control, except intense regimes.

It is not recommended to allow the windward float to takeoff from water as the righting moment will decrease, while the upsetting moment will be same or will increase, resulting in catamaran rollover.

Overkeel is also possible at beam to sea sailing with wave condition close to extreme mode.

Catamaran Recovering from capsized state is possible by one person.

Catamaran remains afloat in case of any of the four sections of floats damage.

Helmsman (or in his absence, the person responsible for the catamaran safety) remains responsible for boat stability and unsinkability during exploitation even in case of meeting the requirements of this manual.

4. Crew

One person with Yacht Helmsman qualification is enough for catamaran steering. The maximum amount of people onboard must not exceed 4 persons.

CATAMARAN CONSTRUCTION

Floats provide the buoyancy of catamaran. They are made from PVC fabrics and have impermeable partitions dividing every float into two compartments. Every compartment is equipped with a valve for filling with air. The floats are attached to the bridge with loops.

Bridge is a load-bearing unit of catamaran and takes on the loading of rigging, crew, etc. It is made up of two compound longitudinal beams – stringers, three transverse beams – bow beam, under-mast beam, stern beam, and diagonal cable tension braces - lower bridle. *Stringer* beams consist of two parts: bow (short) and stern (long).

Trampoline is made from PVC net and serves for crew accommodation. Trampoline's sleeves are put on the stern and stringer beams. Trampoline is tensioned by lacing to under-mast beam.

Cargo net is made from a nylon ribbon and intended for placing of luggage and crew. Cargo net is put on bow and stringer beams by sleeves and tensioned by lacing to the under-mast beam.

Centerboard unit consists of the centerboard and the centerboard box. The centerboard is used to reduce the drift of catamaran when sailing upwind. Rubber expander holds the centerboard in operational (vertical) position. Expander absorbs the hitting of underwater obstacles, thus allowing avoid the serious damage of the centerboard. In moorage (horizontal) position centerboard is raised by halyard and held with clam cleat on the under-mast joint unit.

Rudder unit consists of the rudder blade and rudder box. Rudder is used to control the catamaran. It is mounted in the rudder box, which is attached to the rudder joint unit. Rubber expander holds the rudder blade in operational (vertical) position. Expander absorbs the hitting of underwater obstacles, thus allowing avoid the serious damage of the rudder blade. In moorage (horizontal) position rudder blade is raised by halyard and held with clam cleat on the rudder tiller.

Rigging consists of the mast and sails. The mast consists of four pieces which are interconnecting.

Standing rigging includes forestay and shrouds which hold the mast in position. Tensioning of shrouds and forestay is done by forestay's lanyard.

Running rigging includes tackle to control sails: the main-sheet, the jib-sheet, and gennaker-sheet.

GENERAL VIEW



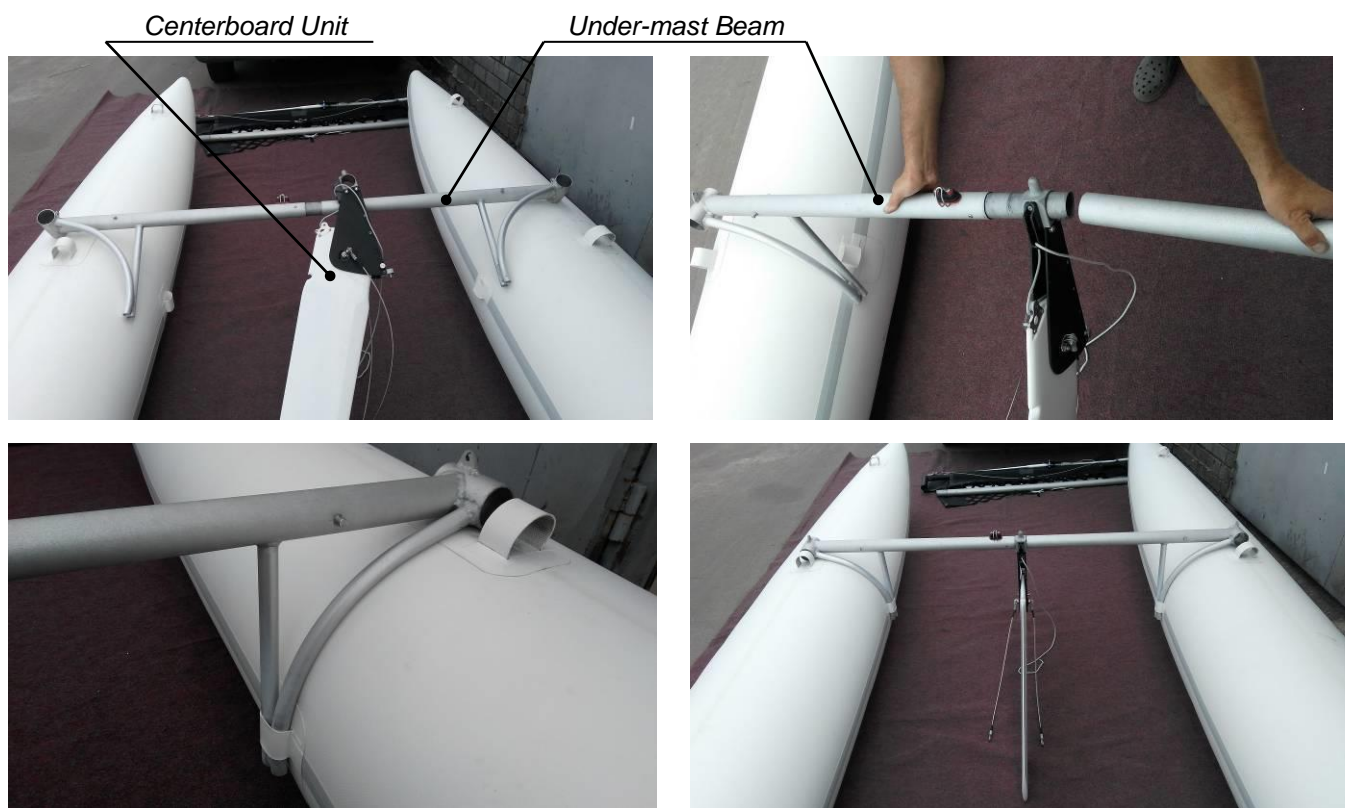
CATAMARAN ASSEMBLY

Note: Some parts of your catamaran may differ from those shown on the photos.

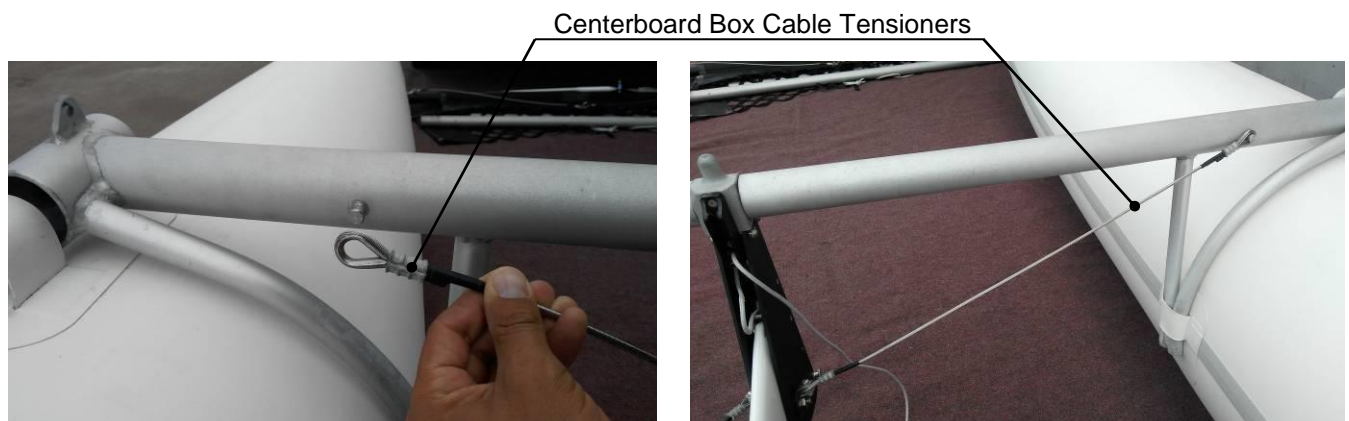
A catamaran is packed into three packing. Two long packing include beams of bridge, stringers, mast, rudder and centerboard units, standing rigging, cargo net and trampoline. In the third packing there are floats, running rigging and pump. Sails are packed in separate duffle bag, but, if desired, could be added into one of the long packing.

1. Inflate the floats, but do not make the pressure up to working level. That in the future will facilitate the assembly process.

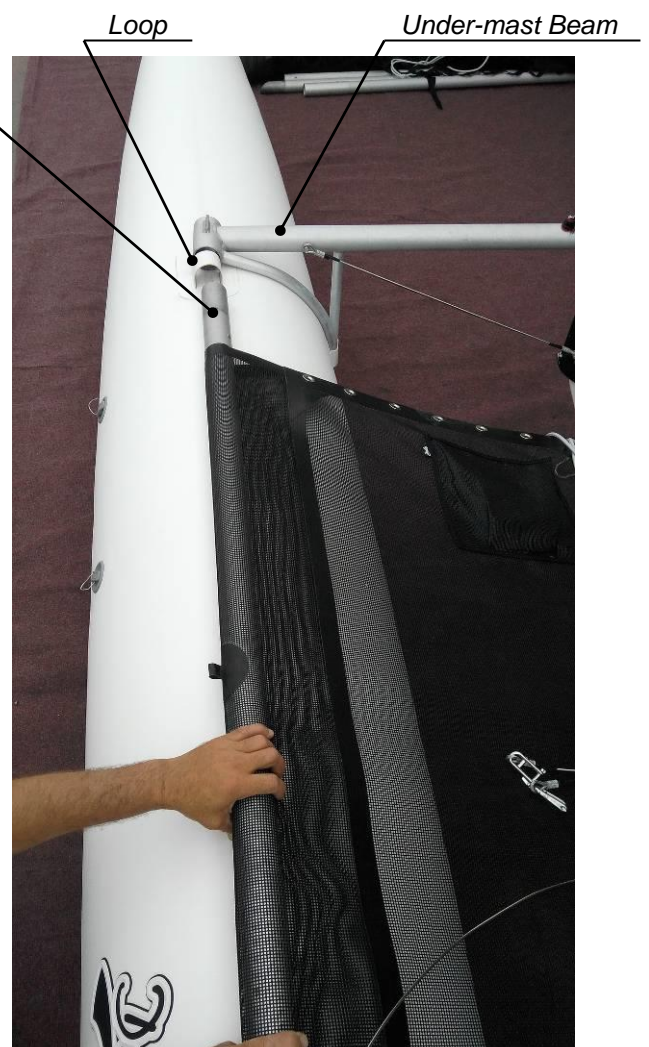
2. Assemble the under-mast beam, which consists of two parts. Install the centerboard unit on it. Fasten the under-mast beam to the floats by inserting into the loops the half-arms of the right and left sides.

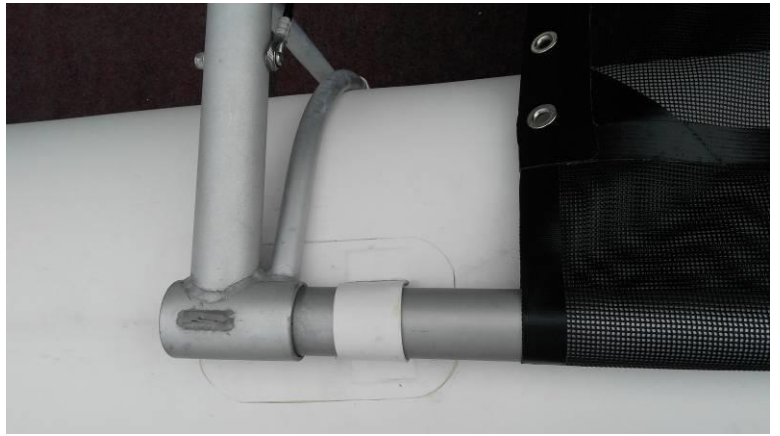


3. Setup the cable tensioners of the centerboard box.



4. Roll out the trampoline that wound on stern beam. Put the stringer's stern part into the sleeve of trampoline, and then into the loop on the float. Join the stern part of the stringer with the under-mast beam.



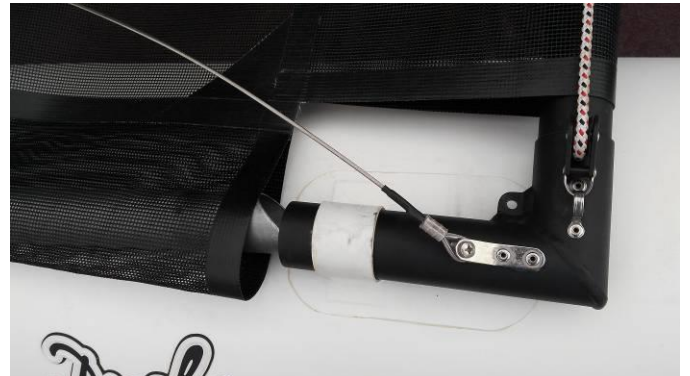


Stern Parts of Stringers



5. Put the stern beam through the loops on the floats and join it with the stern parts of stringers.

Important: by turning the stern parts of the stringers achieve their maximum possible deep set in the stern beam.



6. Roll out the cargo net that wound on the bow beam.



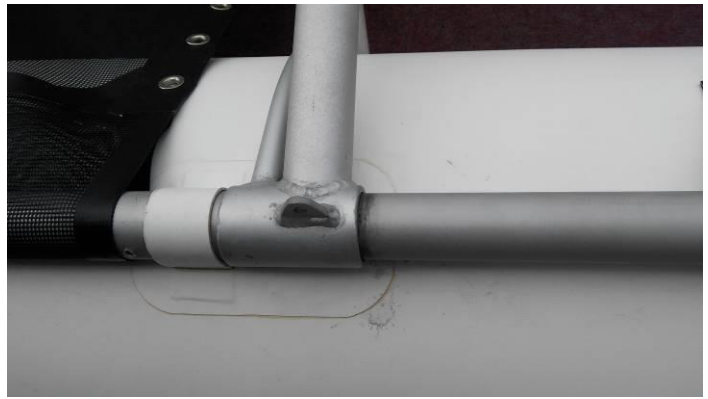
7. Insert the stringer's bow part into the sleeve of cargo net. Join the bow part of the stringer with the under-mast beam and stern part of stringer.

Important: by turning the bow parts of the stringers achieve their maximum possible deep set in the stern parts of the stringers. Make sure that under-mast beam does not slip out from the stern parts of the stringers.

Stringer's Bow Part



Stringer's Bow Part



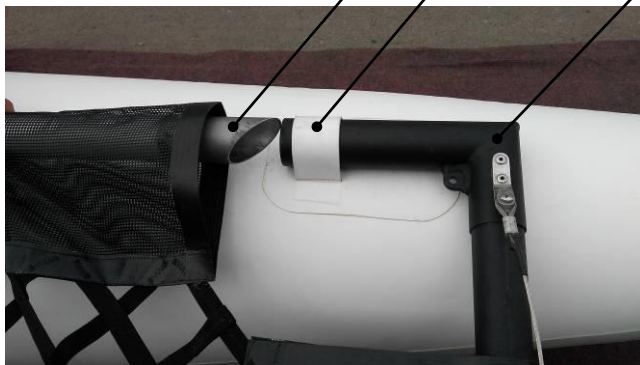
8. Put the bow beam through the loops on the floats and join it with the bow parts of stringers.

Important: by turning the bow parts of the stringers achieve their maximum possible deep set in the bow beam.

Stringer's Bow Part

Loop

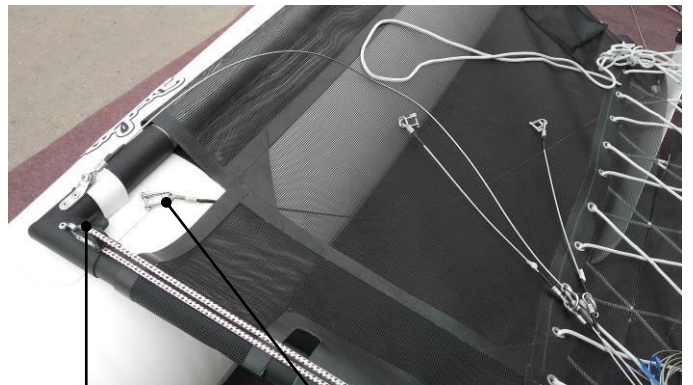
Bow Beam



9. Roll out the diagonal cable tensioners of the centerboard box and set them up. Two long stern cables pass under the trampoline and are attached with shackles to the lugs in the corners of stern beam. Two short bow cables pass under the cargo net and are attached with shackles to the lugs in the corners of bow beam.



Lug Shackle



Lug Shackle

Diagonal Tensioners



10. Put the plate, that interconnects the diagonal tensioners, on the centerboard box finger. To do this, stand on the edges of the plate with your feet, so that under the influence of your weight there will be a necessary gap for installation.



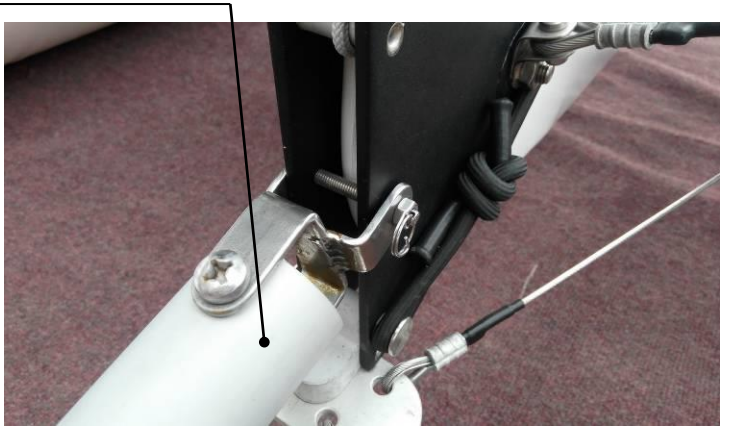
11. Lay the centerboard halyard into the moor position. Put on the expander, which will lower the centerboard into working position. Lock the centerboard in the moor position with stopper.

Note: for convenience, the expander can be put on at the end of the assembly, by topple the catamaran on its side.



12.a. For catamarans equipped with gennaker. Install the bowsprit. It is composite and consists of two parts. Install the short part of the bowsprit and fix it on the centerboard box.

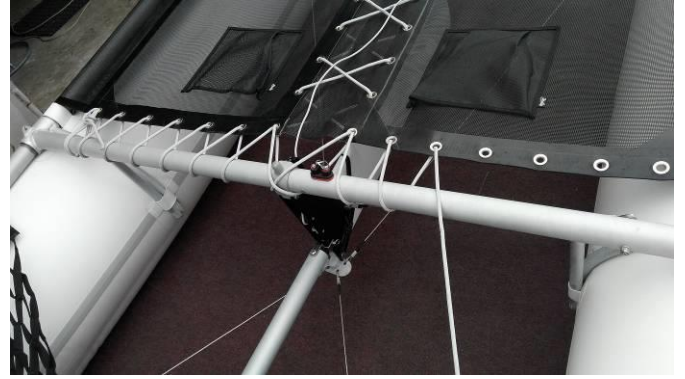
Bowsprit's Short Part



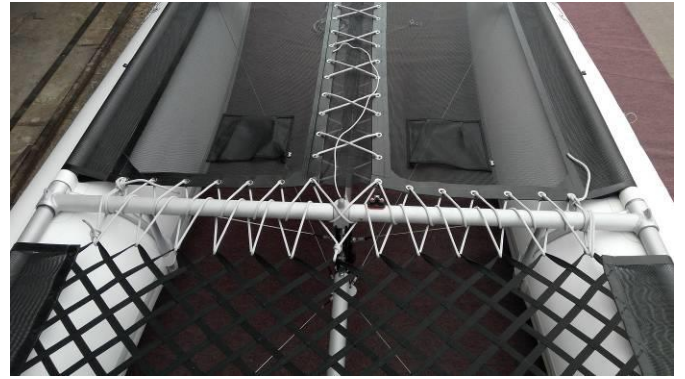
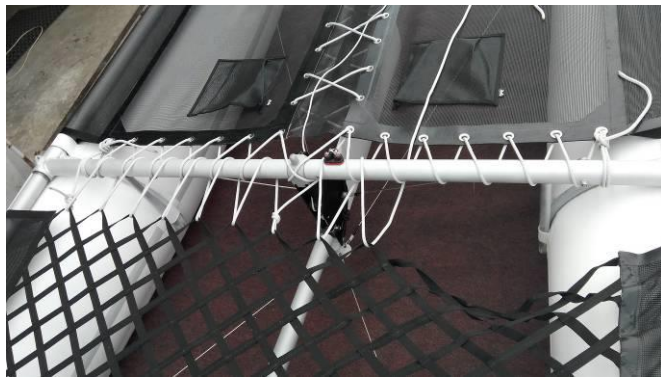
12.b. Connect the long part of the bowsprit with the short one and fix with a button lock. Attach the bowsprit to the bow beam with the strap.



13. Stretch the trampoline up. For this, first, lace up together two halves of the trampoline, and then lace it to the under-mast beam.



14. Stretch up the cargo net. For this, lace it up to the under-mast beam.



15. Assemble the mast. For this, interconnect the four mast segments.



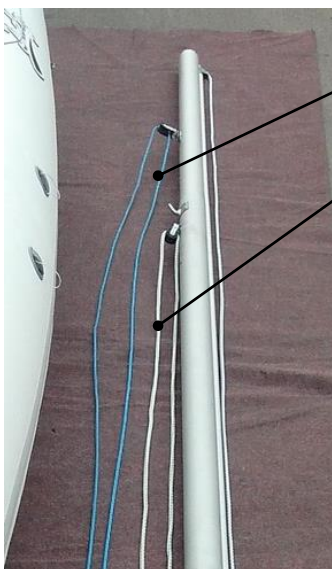
16. Unravel the forestay and shrouds. Attach the forward lower shrouds to the lugs at the left and right side of the under-mast beam with shackles.



Forward Lower Shroud of Portside

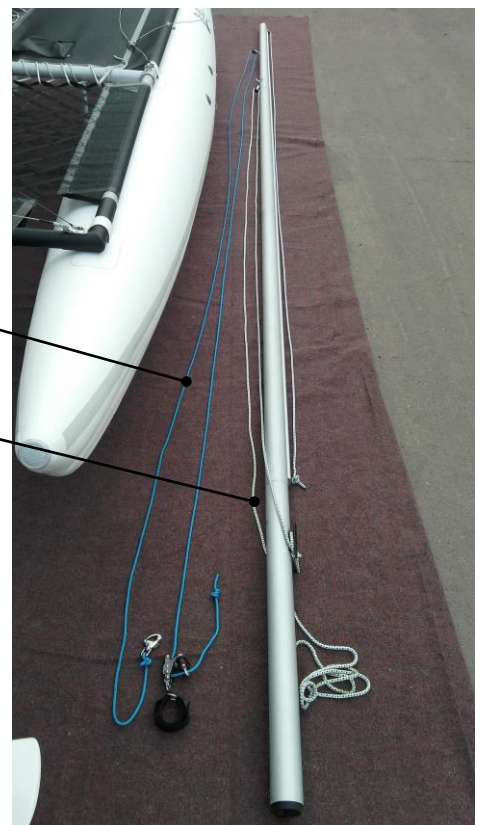


17. Put the jib halyard (if you have a model with the outer laying of jib halyard) and the gennaker halyard (if your model is equipped with a gennaker) into the outer blocks.



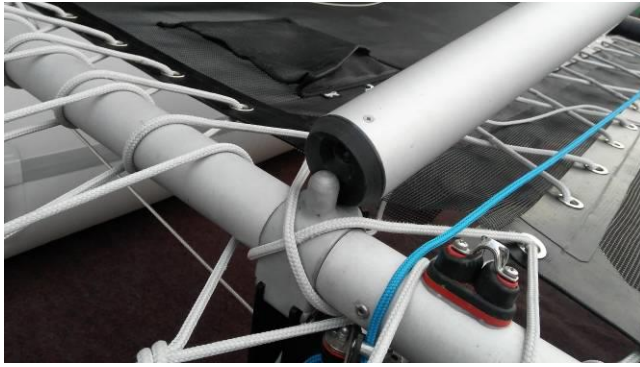
Gennaker Halyard

Jib Halyard



18. Lean the mast on the under-mast joint unit. Put the ring with forestay and shrouds on the mast hook.

Important: make sure that the forestay is in the center, between the shrouds.



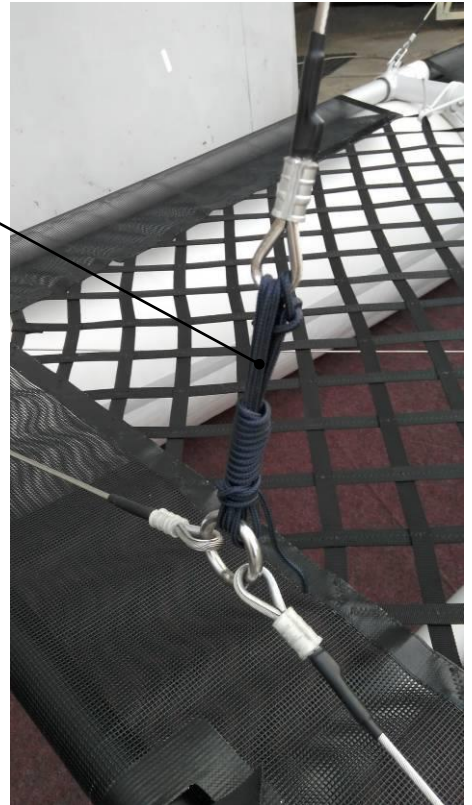
19. Raise the mast. If you have two people, then the one who holds the mast, should lift mast's top as much as possible upwards. While second person should stand in front of the bow beam and pull the forestay. If you are alone, then lean the mast on the under-mast joint unit and walk on the catamaran from the stern to the bow and lift the mast. When the mast is raised, take the forestay and go to the bow beam. Make the tension of forestay by forestay lanyard and secure lanyard with a knot.

Note: Beware that the mast does not fall and hurt you or others.





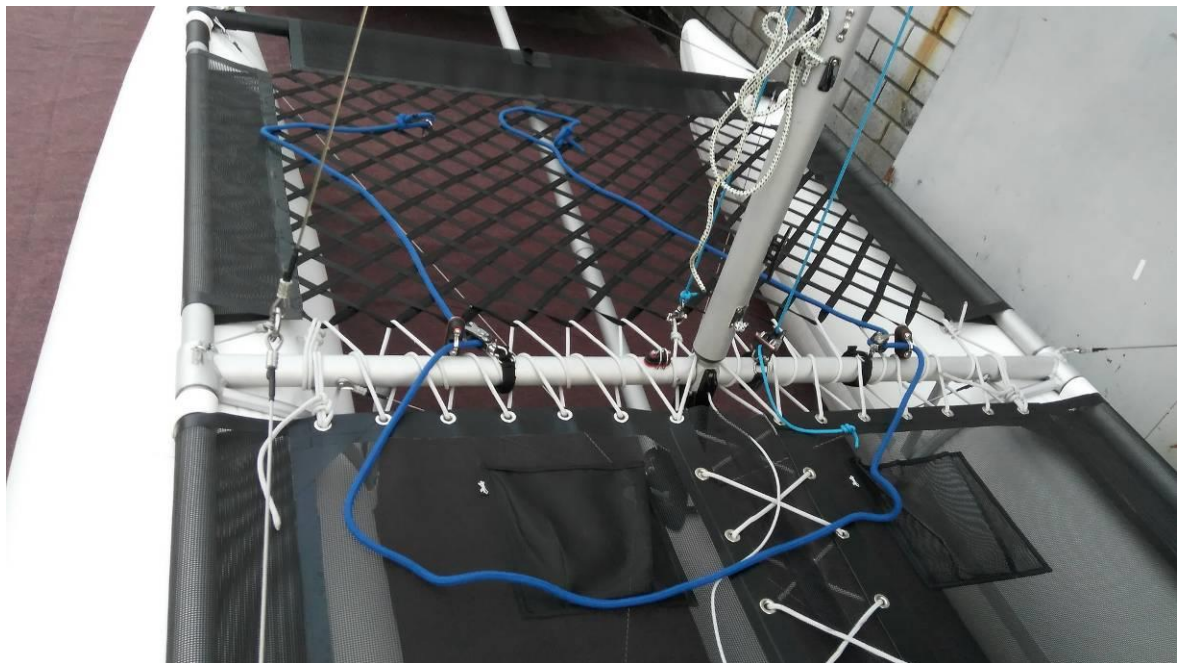
Forestay Lanyard



20. Install the rudder box on the rudder joint unit.



21. Attach the jib-sheet blocks to under-mast beam with straps.



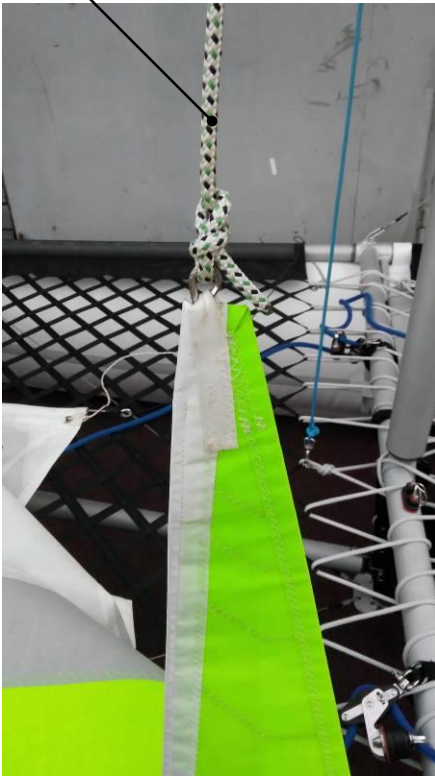
22. For catamarans equipped with gennaker. Attach the gennaker-sheet block to under-mast beam with strap.



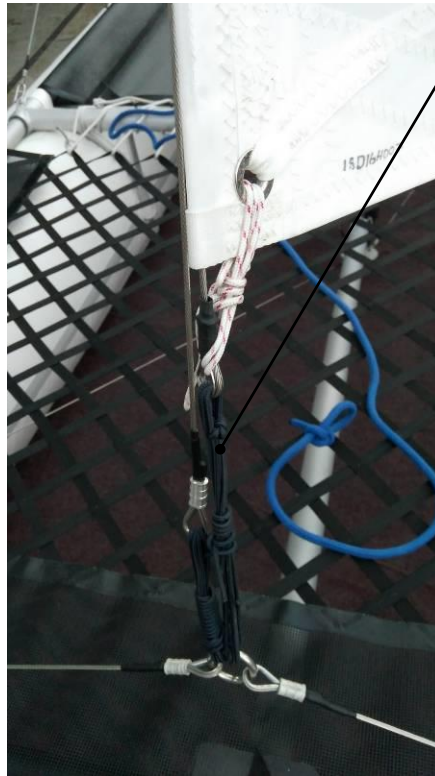
Gennaker-sheet Block

23. Hoist the jib up. For this, tie the jib halyard to the jib halyard point. When the jib is hoisted, lock the jib halyard with the horn cleat. Tighten the jib forestay with lanyard. Forestay should sag. A good tension of the jib forestay will allow a sharp angle when tacking. Attach the jib sheets to the jib clew.

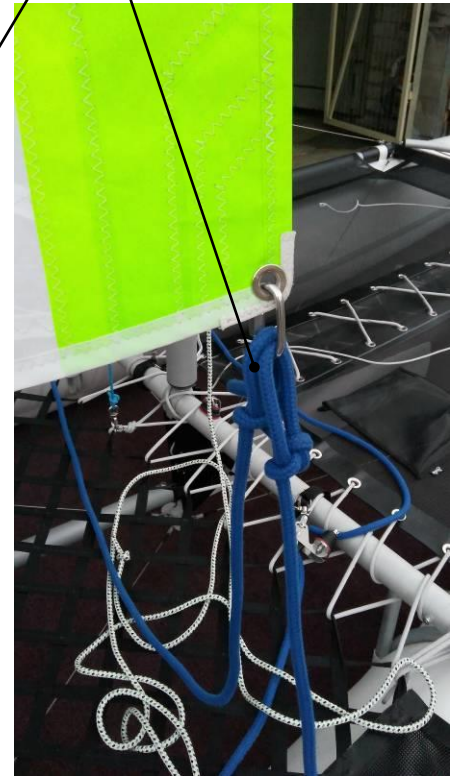
Jib Halyard



Lanyard of Jib Forestay

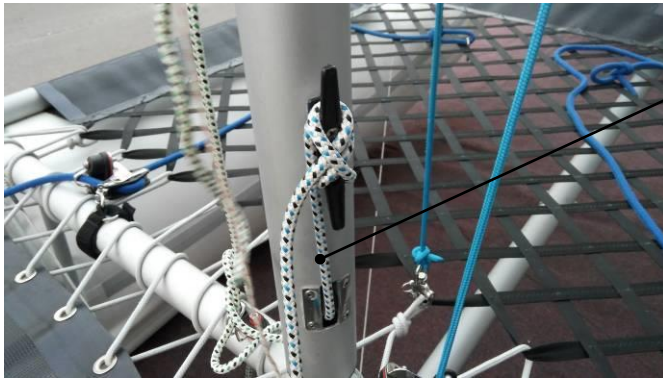


Jib Sheets



24. Hoist the sail (main) up. For this, tie the mainsail halyard to the mainsail halyard point. When the mainsail is hoisted up lock the mainsail halyard with the horn cleat. While mainsail is hoisting, fix the battens with batten tension straps. Lightly pull the luff of sail with mainsail downhaul.



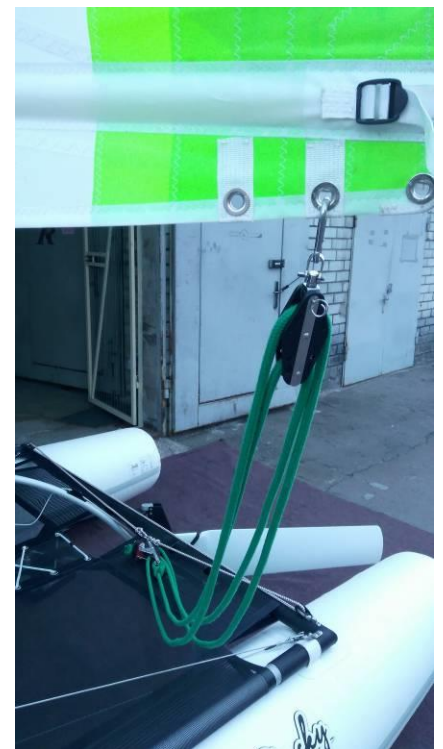
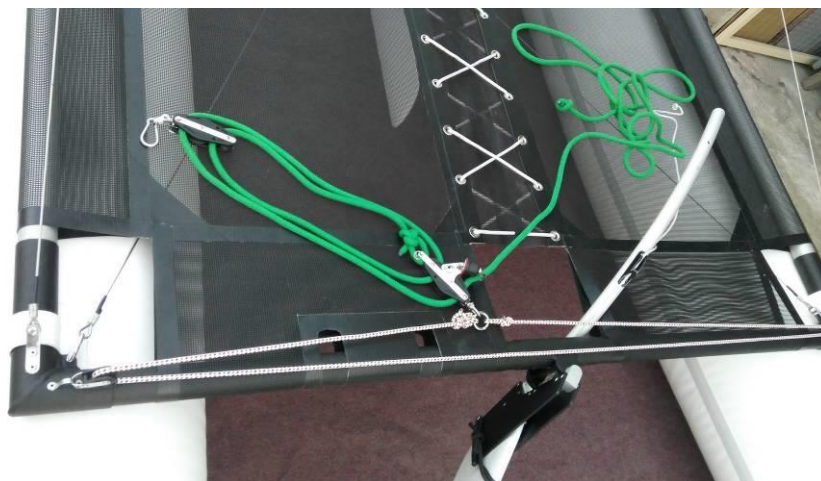


Mainsail Halyard

Mainsail Downhaul



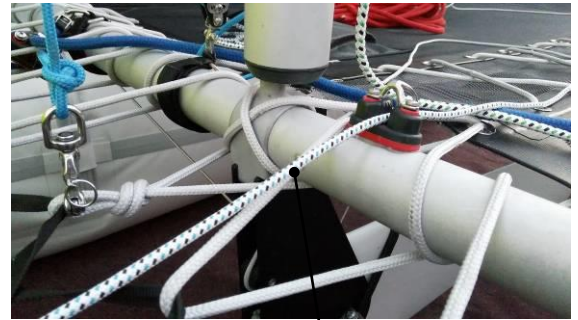
25. Attach the lower block of the mainsheet to the ring of main traveler, and the upper block - to one of the clew grommets. Choose the grommet closer to the mast for stronger wind.



26. Fix the gennaker bag on the cargo net with the cords.



27. Lay the gennaker downhaul (Tack). For this, pass the cord through the block on the bowsprit, then under the gennaker bag and through the stopper on the under-mast. To prevent the cord involuntarily jump out of the stopper, tie a knot at the end.



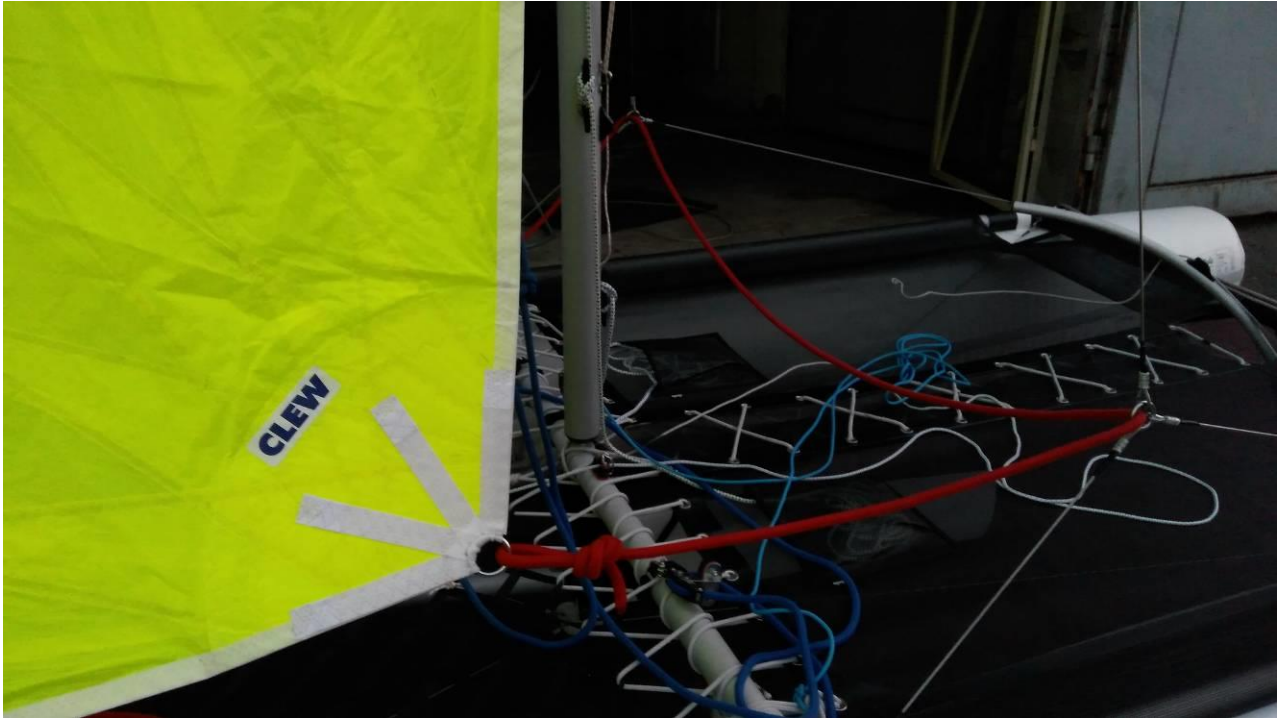
Gennaker Downhaul



28. Clip the gennaker halyard with a carbine to the head of the gennaker and raise the sail onto the mast.



29. Lay the gennaker sheet. For this, tie one end of the gennaker-sheet to the clew of gennaker. Put the free end through the ring of guys splitter on the one board, and then – on the other. Circle the end outside the forestay and tie it to the gennaker clew.



Note: you can disassemble the catamaran in the order reverse to assembly sequence.

CATAMARAN SAILING GUIDELINES

The catamaran sailing can take place both in simple and in complex meteorological conditions. Sailing in difficult weather conditions - a strong gusty wind, a big wave - requires from the crew the certain level of preparation, so the sail in such conditions is possible only with proper qualifications.

The helmsman is responsible for compliance with the rules of navigation and maritime safety.

Ducky 16 is simple and easy to control boat that has pinching tendency.

You can learn how to control catamaran by yourself. The learning is better to carry out in good weather, and at a small distance from the shore. First you need to learn how to sail windward and master the tack and jibe techniques. Later, you may improve other sailing skills.

Sailing upwind, the movement windward (tacking)

Tuning of mainsail when sailing upwind: mainsail should stand to the wind with about 10-20° angle of attack. In this case, it operates as a wing and develops the most traction.

Against the wind catamaran can only move in zigzags, such a movement is called tacking. When tacking, try to keep the best course. Depending on wind and wave conditions it is in the range of 45-50° to the wind. On such course a ship is still quite fast and quite steeply to the wind.

When sailing upwind, the centerboard should be lowered to the working position, as it prevents the drift.

In rough weather, the mainsail is set at a lower angle of attack - 5-10° and eased to 2-5° at squalls. This is caused by needs to reduce the load of mast, rigging, frame, etc. Otherwise, there is a possibility of catamaran tipping over the side.

Tack performing

When tacking, the boat must do a tack turn, the ship crosses the wind (head to wind) and board is changed to the opposite.

Before turn the boat should maintain enough way, sometimes it is useful to fall to leeward. The turn is started by move the rudder upwind smoothly but energetically. If move the rudder too sharply, then the drag will increase dramatically, and the boat can stop. If the rudder angle is not enough, the tack performing will delay, the ship will not have enough inertia to finish the turn and will stop.

As soon as the ship will get rotation power, the rudder angle is gradually increased. At the end of a turn, the angle reaches 30-45°. Until crossing head to wind, the outhaul is gradually (but not sharply) adjusted by holding the sail filled with wind.

When the boat will be on the new tack (passed the wind line) and the sail starts to veer to the lee side, the outhaul is loosening. Catamaran starts to fall leeward, and the execution of the turn will over. Then outhaul is picking up, the wind fills the sail and the catamaran again gaining the way.

Before going to a new tacking course, it is necessary to speed up the catamaran till condition when the centerboard and rudder develop the necessary lateral resistance. For this purpose, after a turn at first go more wind down than necessary and change to desired course when enough way is gained.

If the turn is failed for some reason and the boat is stopped head to wind or even starts shifting to the old tack, the one of following should be done:

- ease the catamaran off to old tack, speed it up, and make the turn again;
- turn with backward running. Remember, that in this case, the rudder needs to be declined in the same side, where a stern must go. The depth of water should be sufficient, that a rudder and centerboard did not reach the bottom that can entail their breakage.

Running

When running the sail is not working as a wing anymore, it does not create a lift and movement occurs only due to its resistance to wind. This eliminates the need for centerboard because there are no forces that cause the drift of the vessel.

Running does not make any complications in light wind, but we need to remember that it can be dangerous with strong wind. The danger is capsizing of catamaran. This can happen with an unexpected jibe when mainsail rapidly moves to other side and the catamaran is capsizing over the board. Or when catamaran in surf mode goes down the wave and bows run into trough of previous wave. The catamaran is sharply stopped at this moment, and its own inertia and wind pressure on sails pitchpole the boat.

In fresh weather, it is better not to allow movement with dead run course, and if the apparent wind begins to develop straight along the axis of ship, it is necessary to tack windward to backstay and prepare to face involuntary jibe.

It is also necessary to watch after that the bows of catamaran did not bury in the wave.

CATAMARAN RECOVERY FROM AN INVERTED POSITION

When sailing the catamaran in rough weather, there is always the risk of tipping over. Be prepared for and get to know how to behave in such situation. Light weight and the presence of a centerboard make it simple to recover the catamaran on an even keel. One person for sure can handle with this situation. Before recovery starts, make sure that the mainsheet is not in the stopper and eased off (very important!). To flip, you can use the mainsail halyard, passing it over the float. When hiking, hold the mainsail halyard and use the centerboard as a lever. For the first stage of hiking do not hurry and do not make any sharp movements, do pull the mainsail halyard and wait for a few seconds then you will see how catamaran slowly but surely start to rotate onto even keel. When the catamaran will be reversed back, most likely you will find yourself under it. At this point the wind can easily capsize an unloaded catamaran again, or just blow it away from you. Your task is to keep it nearby. Hold catamaran by the cables of lower bridle and try to orient its bows to the wind. See the next photos:





MAINTENANCE

The proper care of catamaran is the main condition for its long service life.

Avoid excessive pressure in the catamaran's floats when heated by sun; reduce the pressure in case of long term staying under sun.

Remove the sand and dirt from the surfaces of floats and dry the catamaran up after usage. Avoid the getting water inside the floats of catamaran.

After usage of catamaran in salt water, rinse it with the fresh water.

Before long-term storage of the catamaran clean it from dirt and sand, dry up thoroughly, repair if damage is found, store the catamaran floats in a dry place and in an expanded form if possible.

You can do by yourself the minor repairs (punctures, cuts, replacing hardware, etc.) But in case of complicated repairs, it is recommended to contact your dealer or the manufacturer directly.

REQUIREMENTS FOR SAFETY

It is strictly forbidden to operate a catamaran while intoxicated or under the influence of pills.

Never use a catamaran without the personal flotation devices (life vests or harnesses, belts, life rings, etc.)

It is strictly forbidden to operate a catamaran in the darkness.

Never load the catamaran higher than the maximum load capacity.

It is strictly forbidden to operate a catamaran at wind speed greater than 10 m / s, wave height greater than 0.5 m and the distance from the shore more than 1000 m.

It is forbidden to set the pressure in the floats greater than 0.20 kg/cm².

Do not drag the catamaran on the hard surface (asphalt, rocks, broken glass, etc.)

RECOMMENDATIONS

Before pulling away, make sure that all basic equipment, including oars, pump, life jackets are on board the catamaran.

Load must be distributed accurately over the length and width of the catamaran.

In case of long-distance routes inform somebody about the time and place of departure, planned navigation route and estimated return time. Also, next items should be on board: a flashlight, anchor, safety line, first-aid kit.

WARRANTY SERVICE

1. We guarantee that every catamaran Ducky 16 is free from defects in material and quality of work, but only under the condition that the sale is made by "Yukon - A" or a dealer authorized by "Yukon - A" to make such a sale.

2. Warranty will come into effect after putting the Dealer's seal and date of sale in the warranty card.

3. All components of the catamaran fall under warranty for 24 months.

4. Since this warranty applies only to defects in material and quality of work, it does not apply to normal wear and tear or damage caused by:

- neglecting, lack of maintenance, accident, improper operation of catamaran;
- using an auxiliary device or component that is not manufactured or sold by us;
- alteration or removal of any component of the catamaran.

5. Warranty service does not include accident or its consequences, or costs in such cases as towing, launching, the costs of towing and storage, the phone fee, or any type of lease, inconvenience, waste of time or any expenses (loss), and others, as result of any destruction (damage).

6. Buyer must provide the access to product for warranty service, must deliver the product for checkup by an authorized dealer, which will repair the product. If required service is included in this warranty, inspection and repair will be arranged. Otherwise, the repair costs are borne by the buyer.

Any product or component, which delivered by the purchaser for inspection and repairing, must be thoroughly washed and dried.

7. Our obligations that fall under this warranty will be limited to repair or replacement of the defective part of the component or components that will be needed to compensate for any defects that result from defects in materials or quality of work, as specified in the warranty.

We reserve the right to change the design of any product without assuming any obligation to modify any product previously manufactured.

WARRANTY COUPON

Model	Ducky 16	Serial number:	
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Certificates / Standards	CE
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Owner:
Full Name

acquainted with these operating instructions and warranties.

.....
/ Signature of the owner /

Date of sale		Dealer stamp
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Warranty repairs № 1
№ 2
№ 3