



# ODYSSEY II

1/23 SCALE RACING YACHT

## INSTRUCTION MANUAL

### WARRANTY

Thunder Tiger guarantees this model kit to be free from defects in both material and workmanship. The total monetary value under warrant will in no case exceed the cost of the original kit purchased. This warranty does not cover any components damaged by use or modification. Part or parts missing from this kit must be reported within 60 days of purchase. No part or parts will be sent under warranty without proof of purchase.

To receive part or parts under warranty, the service center must receive a proof of purchase and/or the defective part or parts. Should you find a defective or missing part, contact the authorized Thunder Tiger Service/Distributor nearest you.

### WARNING

The ODYSSEY II Scale Racing Yacht, its parts and its construction tools can be deadly weapons. Always exercise extreme caution when using this product. Improper operations may cause personal and/or property damage. Thunder Tiger and its distributor have no control over damages resulting from shipping, improper construction, or improper usage.

Thunder Tiger assumes and accepts no responsibility for personal and/or property damages resulting from the use of improper building materials, equipment, and operations. By the act of assembling this product, the user accepts all resulting liability. If the buyer is not prepared to accept this liability, then he/she should return this kit in new, unassembled, and unused condition to the place of purchase.

### Notice

This is not a toy. Assembly and operating of this boat requires adult supervision.

No.5553

## Introduction

Thank you for your purchase of the Thunder Tiger 1/23 Scale Racing Yacht. This yacht is both good for indoor display and outdoor sailing. With proper care taken during assembly, the Odyssey will provide you good performance and long service life. Please contact Thunder Tiger authorized distributor for tech support or customer service if you encounter any problem.

## Before Assembly

- > Read all directions thoroughly before assembly.
- > Check the parts against the parts drawing on page 3-4.
- > Always carefully apply CA instant glue on the glue area, avoid contacting the skin and eyes.
- > When mixing epoxy, apply equal volume from two bottles.
- > When tighten screws, be sure not to overtighten, as the metal thread will strip out or damage the plywood, plastic or Aluminum.

## Items Required for Completion

### Radio

ACE JAGUAR 2 CH Radio is highly recommended(No.8216). Available in 26, 27, 40MHz

#### Features:

- AM Digital Proportional Control
- Available in 2 ch
- Unique Ergonomically Transmitter Design
- Servo Reversing
- CH1 & Ch2 Trims
- Adjustable Neutral Position for Throttle
- LED Battery Level Indicator Light w/Low Power Flashing
- Easy Access Crystal
- External Charging Jack for Rechargeable Battery



No.8216

No.8114

Two STD Servos come with the Radio.

High impact material provides you more confident to do variety actions. Looking for the super precise operating performance? ACE R/C servo fully meets all your mind!

- The Most Reliable High Torque Motor
- Standard Size to Fit Most Model
- High Impact Material
- More Precise Operating Performance

#### S1903 STD Servo

**Torque (4.8V / 6V):** 41.7 / 52.8 (oz-in)  
3 / 3.8 (kg-cm)  
**Speed (4.8V / 6V):** 0.19 / 0.15 (sec/60°)  
**Size L x W x H:** 40.4 x 20.0 x 37.9 (mm)  
1.6 x 0.8 x 1.48 (inch)  
**Weight :** 47.4 / 1.67(g/oz)  
**Gear:** 4P

## Battery

### NiMH Conversion Kit

The kit quickly and economically converts dry battery radios to rechargeable NiMH operation. Enjoy the dependability and cost savings that NiMHs provide. Included are 12 AA 1100mAh cells and a dual charger.



No.2970 110V 2P  
No.2971 230V 2P  
No.2972 230V 3P

## Tools Required for Assembly



Needle Nose Pliers



Phillips Screwdriver, Med, Small



Hobby Knife



Scissors



CA Instant Glue



Drill Bit  
1/16", 1.8mm  
5/64", 2mm



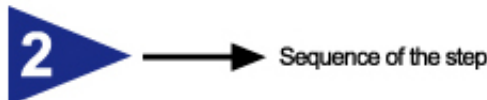
• Sandpaper (#400 grit)



• Rubbing Alcohol

## Assembly Step

In each step, the needed parts are shown the number right below. Locate all parts for the steps.

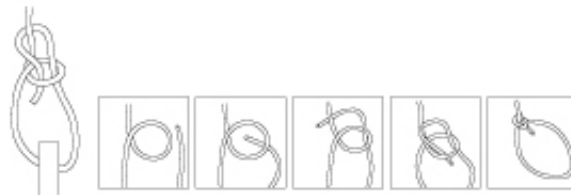


**Keel and Rudder Tube Assembly** → The section will be assembled in the step.

10 11 53 54 → Refer to the parts listing and locate the needed parts.

Clear a place on your workbench or table, and let's begin.

## Some Basic Knots



Bowline Knot

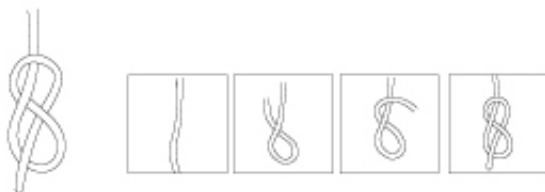


Figure Eight Knot



Reef Knot

**SCALE**  
**1:1**



6 3x5mm Screw (1)



7 2.6x5 Screw(2)



8 M4 Locknut (1)



9 M2 Nut (1)



1 2.6x20 Wood Screw (2)



2 3x16mm Sink Head Screw (1)



3 2x8mm Wood Screw (2)



4 2x5mm Wood Screw (14)



5 2x12mm Screw (1)



10 Keel Tube (1)



11 End Cap (2)



12 Clevis (1)



13 Steering Arm (1)



14 Wheel Collar (1)



15 Swivel (1)



16 Steel Ball (1)



17 Keel Shaft (1)



18 Keel Cover (1)



19 Keel (1)



20 Rudder (1)



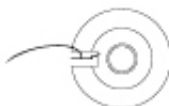
21 Rudder Pushrod (1)



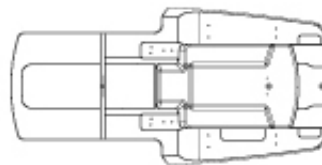
22 4-way Wrench (1)



23 PE String (1)



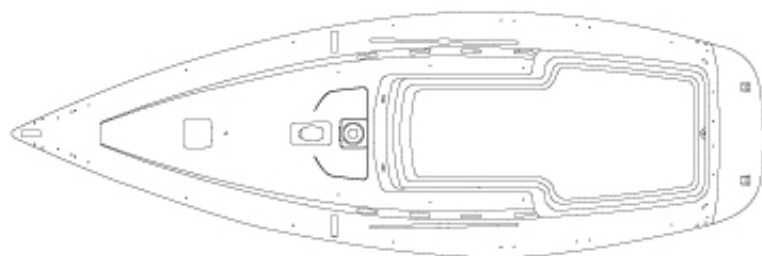
24 Black String (1)



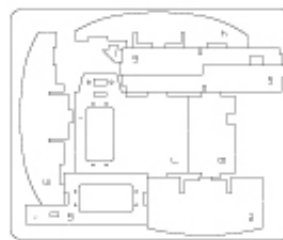
25 Hatch Cover (1)



26 Foam Tape (1)



27 Hull (1)



28 Servo Tray (1)



29 Mast A (1)



30 Mast B (1)



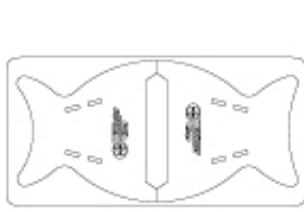
31 Mast Joiner (1)



32 Main Boom (1)



33 Jib Boom (1)



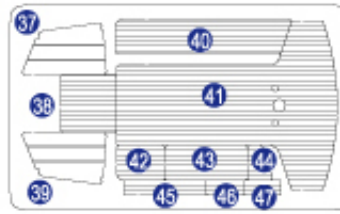
34 Stand A(2)



35 Foam Tube (2)



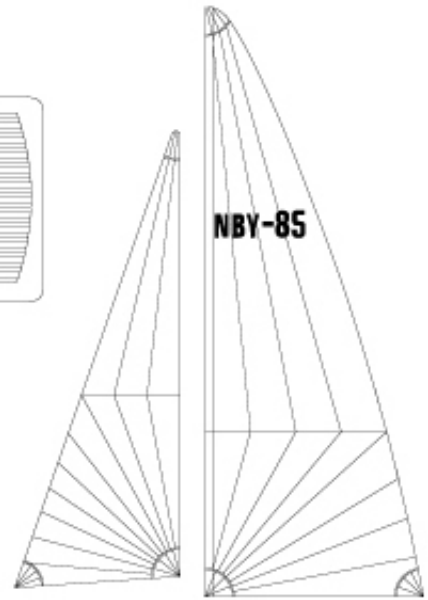
36 Stand B (2)



Deck Planking (1)

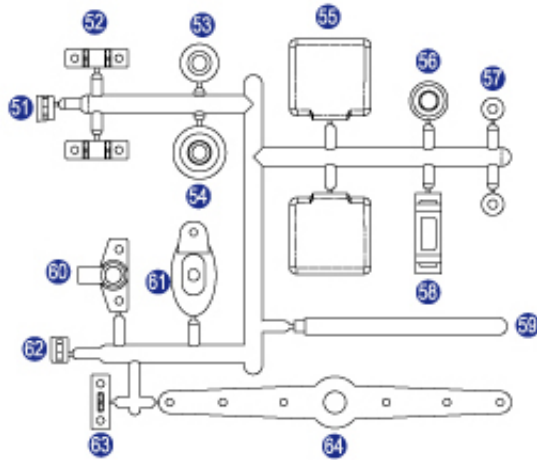


48 Decal (1)

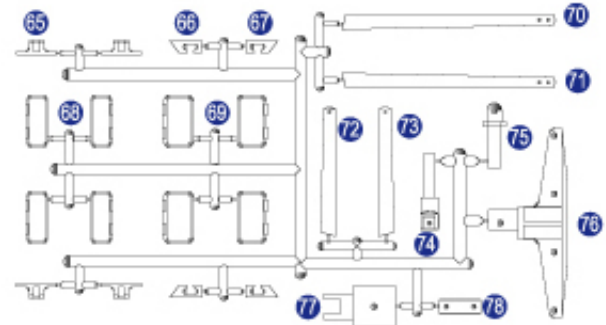


49 Jib Sail (1)

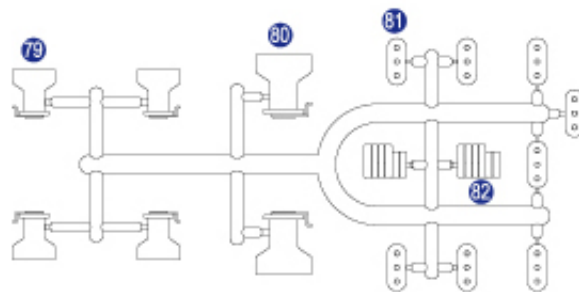
50 Main Sail (1)



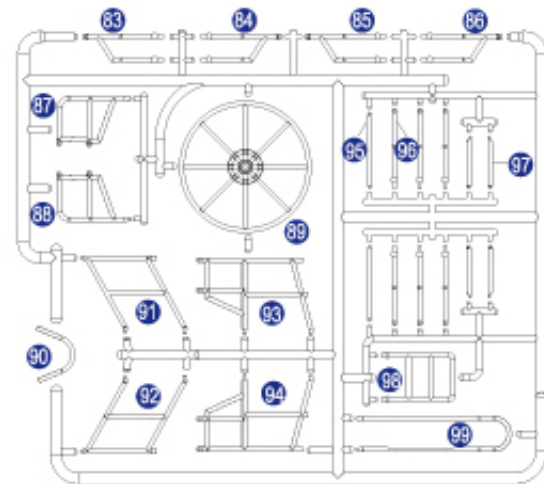
A Tree (1)



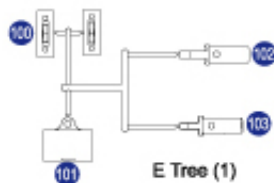
D Tree (1)



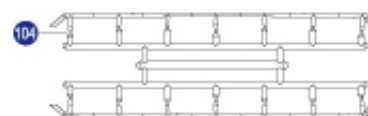
C Tree (1)



B Tree (1)



E Tree (1)



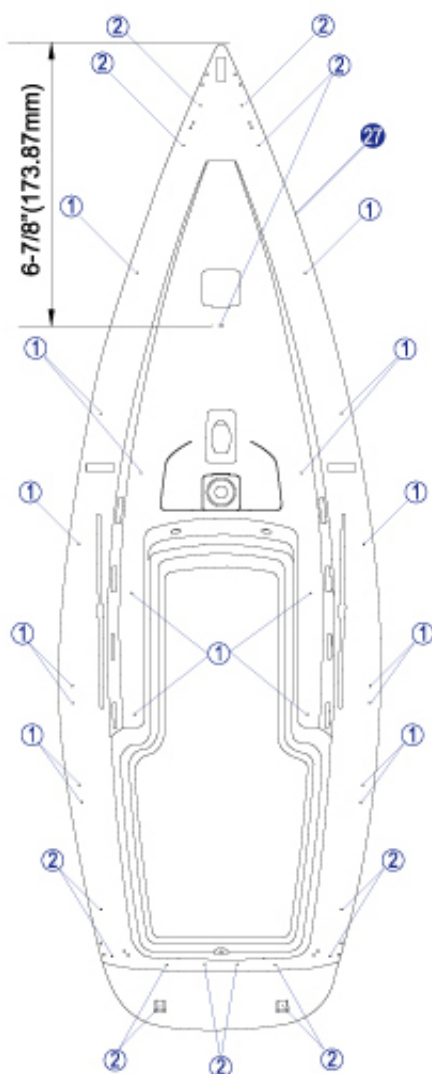
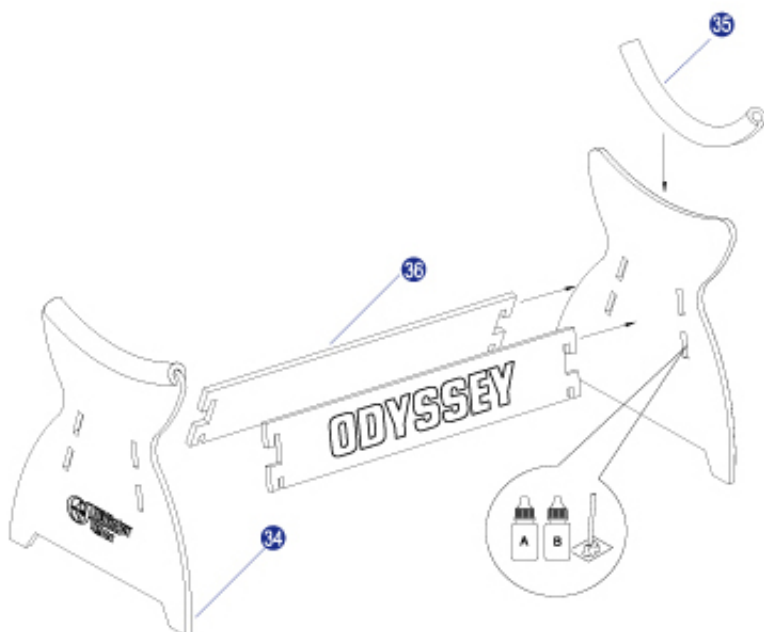
B' Tree (1)

1

## Display Stand Assembly

27 34 35 36

1. Locate the display stand parts , then assemble the Stand A **34** and Stand B **36** as shown at right. You may apply a thin bead of 5-min. epoxy at the joint before you insert them.
2. Locate the black Foam Tube **35** then use scissors to cut the foam tube so it can be installed on the hull support as shown. This will protect the hull bottom from scratches during construction and storage.
3. Now you can place the Hull **27** on the display stand during construction.
4. Refer to drawing and drill the holes with the indicated size of drill bit. For **1** is using the 1.8mm drill bit for **2** is using 2mm drill bit.

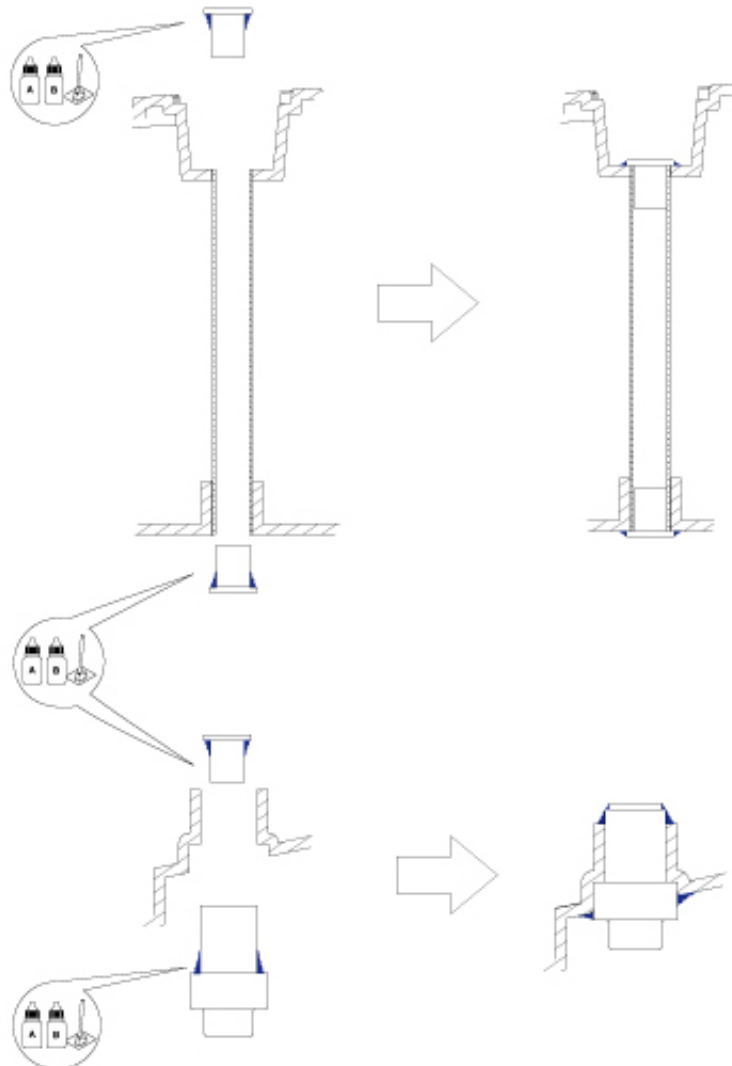
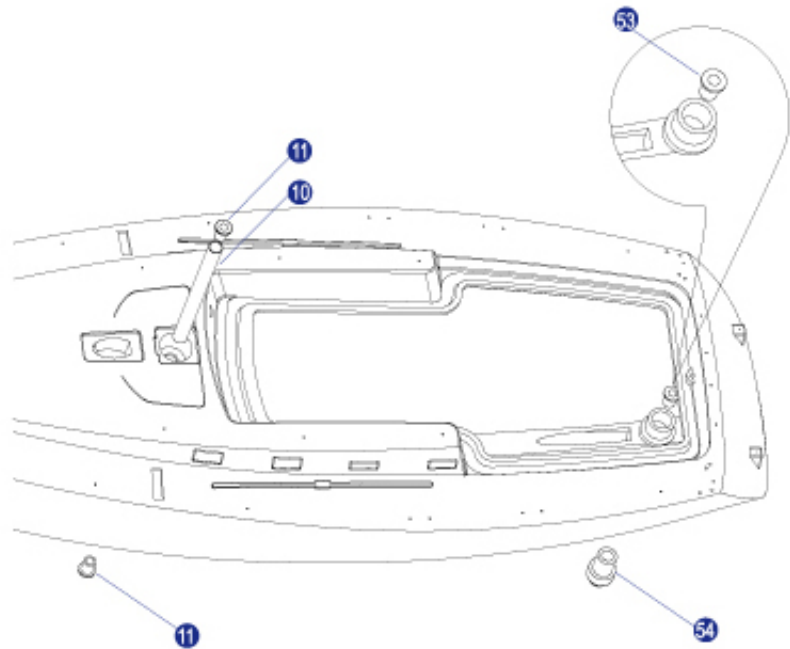


## 2

### Keel and Rudder Tube Assembly

10 11 53 54

1. Insert the Keel Tube 10 from hull top and reach the hull bottom then epoxy the End Caps 11 in place. Note: end caps are working as waterproof and epoxy will help to fill the gap between cap and tube. However, do not leave any excess epoxy on the inside the tube as it will be difficult to insert the keel shaft if there is any hardened epoxy inside.
2. Trial fit the Rudder Tube 54 in place, it might need to trim the hole so rudder tube can fit in just tight. Apply epoxy and glue the rudder tube in place. Next epoxy the End Cap 53 in place.

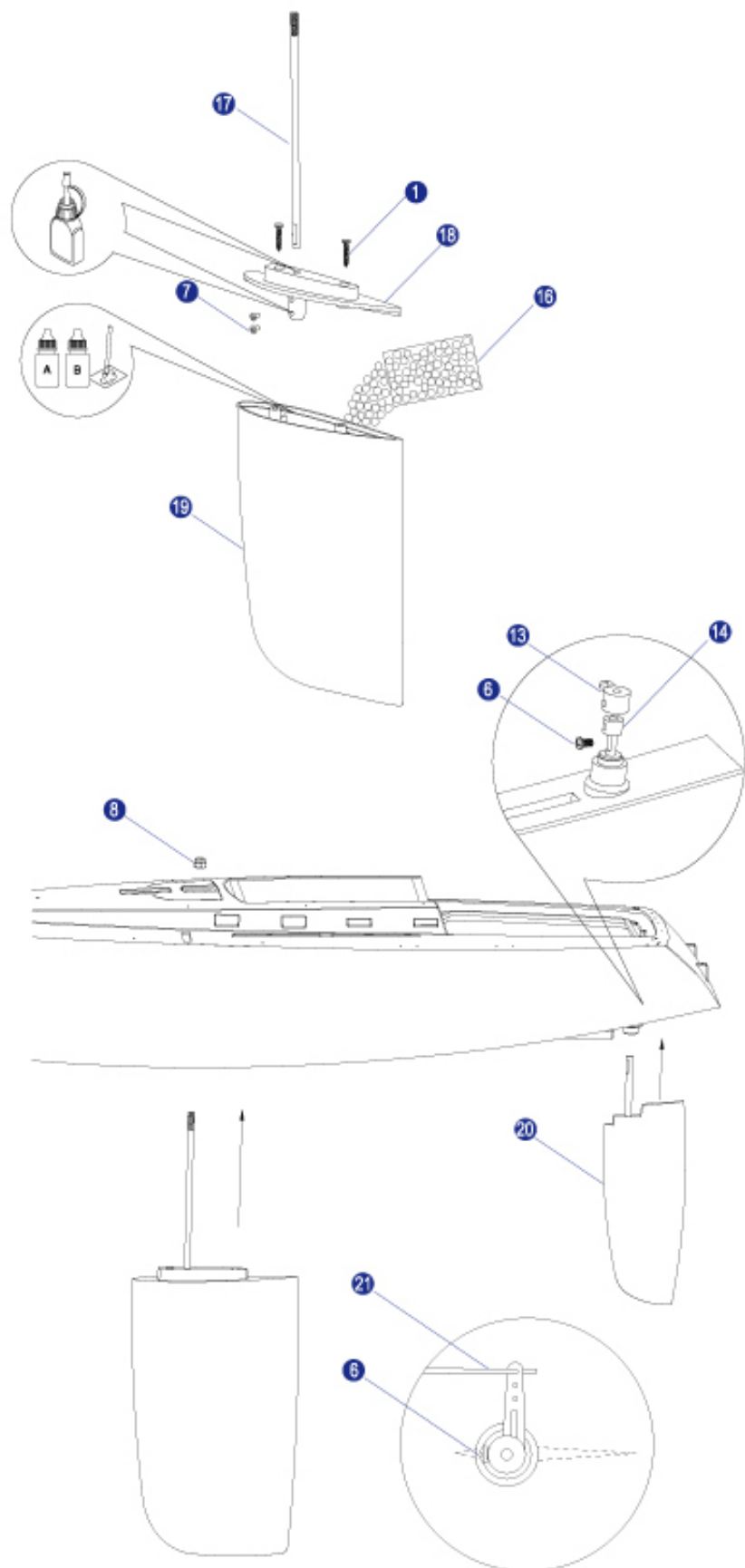


## 3

### Keel and Rudder Assembly

1 6 7 8 13 14 16 17 18  
19 20 21 22

1. Insert the Keel Shaft **17** through the Keel Cover **16**, secure the shaft firmly with two 2.6x5mm Screws **7** then apply CA glue around the hole as shown to make sure the shaft is secured firmly. Next put the Steel Balls **16** into the Keel **19**, trial fit the cover in place, once satisfied then apply enough epoxy to keel and secure it with 2.6x20mm Wood Screws **1**. Wipe off the excess epoxy. Note the working time is only 3 min. as epoxy will be cured in 5 minutes.
2. After the epoxy is cured, insert the keel shaft in place, trim the contact area if necessary. Make sure the keel fit into the hull properly. Secure the keel with M4 Locknut **8** by using the furnished 4 Way Wrench **22**.
3. Install Rudder **20** in place by securing the Steering Arm **13** and Collar **14** with 3x5mm Screw **6** as indicated. In this step you will need to connect the Pushrod **21** by threading the Z-bend end to steering arm first then secure the arm as illustration. Note: the pushrod and rudder should perpendicular to the steering arm.



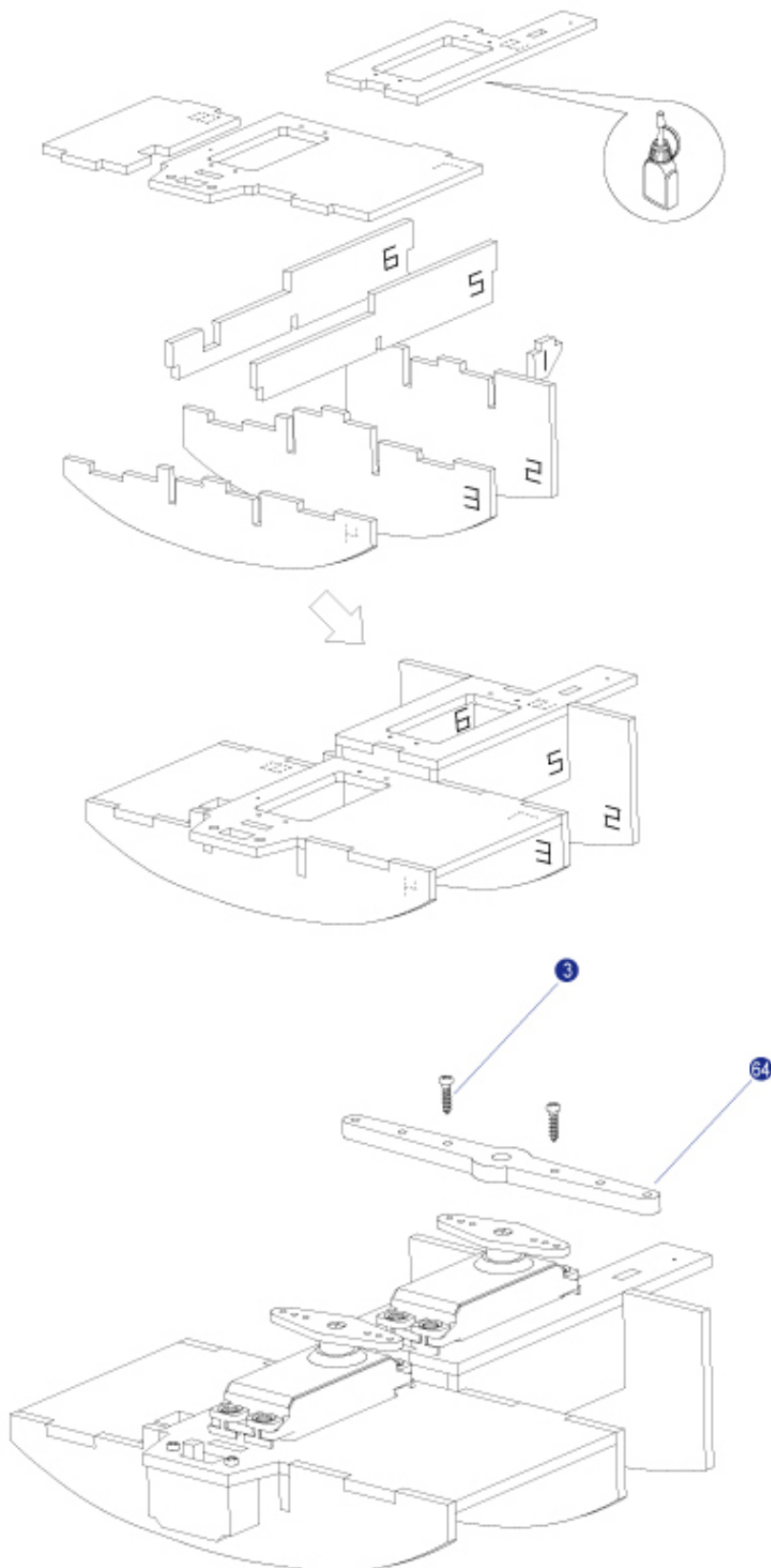


## 4

### Servo Tray Assembly

3 28 64

1. Locate the die-cut plywood sheet **28** then use thick CA to assemble the servo tray as shown.
2. Refer to servo manual and install the servo mounting hardware then secure the servos in place. Note the servo orientation.
3. Install the switch in place.
4. Secure the servo arm on the servo with two 2x8mm Wood Screws **3**.



## 5

### Radio Installation

12

1. Cut two sail control lines.

Main Sail Control Line 16" (40cm)  
Jib Sail Control Line 24" (60cm)

2. First thread the jib sail control line through the hole on the deck as shown, then pull the line from the hull inside, tie a Bowline knot to the right end of Servo Arm before gluing the servo tray in place.

3. Second thread the Main sail control line to the left end of the servo arm and tie a bowline knot.

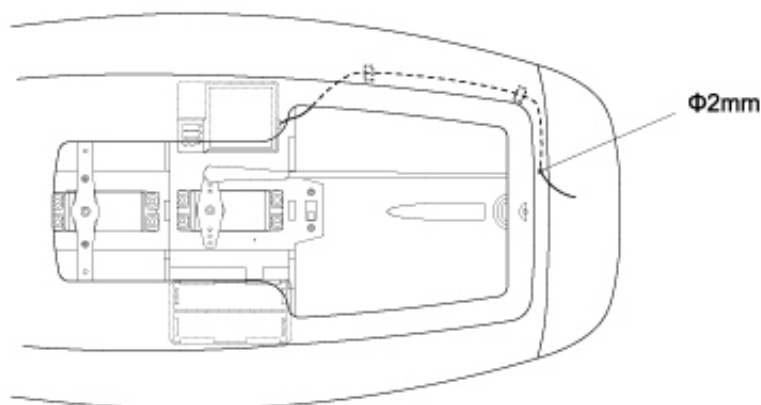
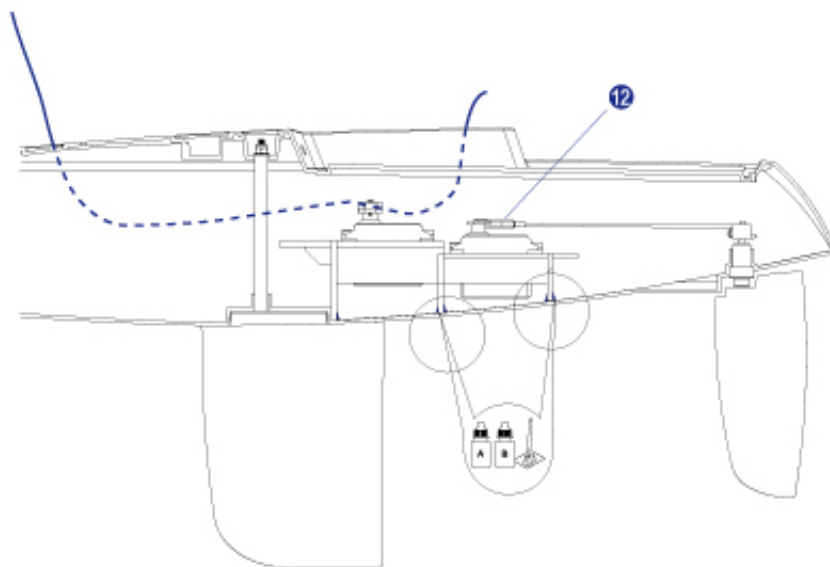
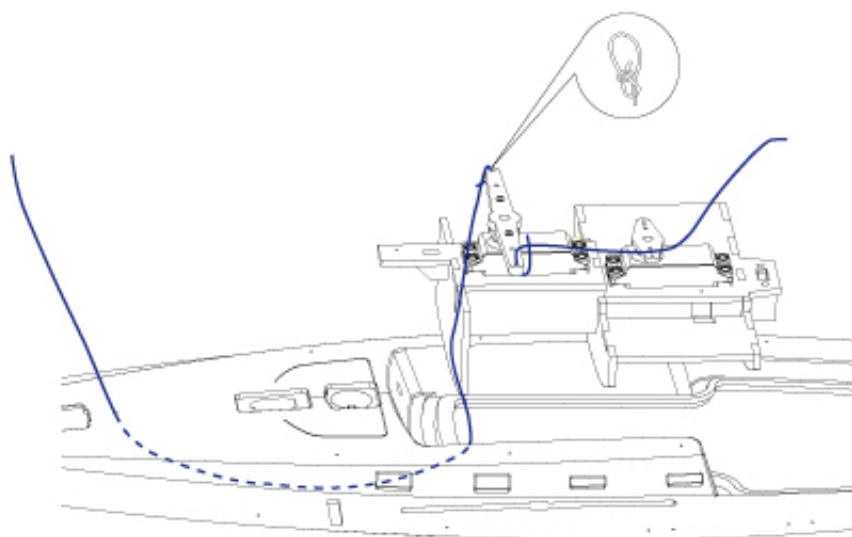
4. Slightly sand the glue area inside the hull then apply enough epoxy to glue servo tray in the hull, this will enhance the adhesion. Note the servo tray former will just against the keel well.

5. Thread the clevis 12 on the pushrod then snap onto the servo horn. Make sure the servo and rudder are in neutral position. Adjust the clevis if necessary.

6. Connect the radio system following the manufacturer instructions. Place the receiver in the radios compartment at the right side and Battery holder at the left side of servo tray.

7. The normal dry cell is not last long, we would suggest you to replace NiMH battery so you can sail the boat for a longer time.

8. Tape the receiver antenna wire to underside of the deck then drill a 2mm hole as indicated. Thread the antenna out of Hull.

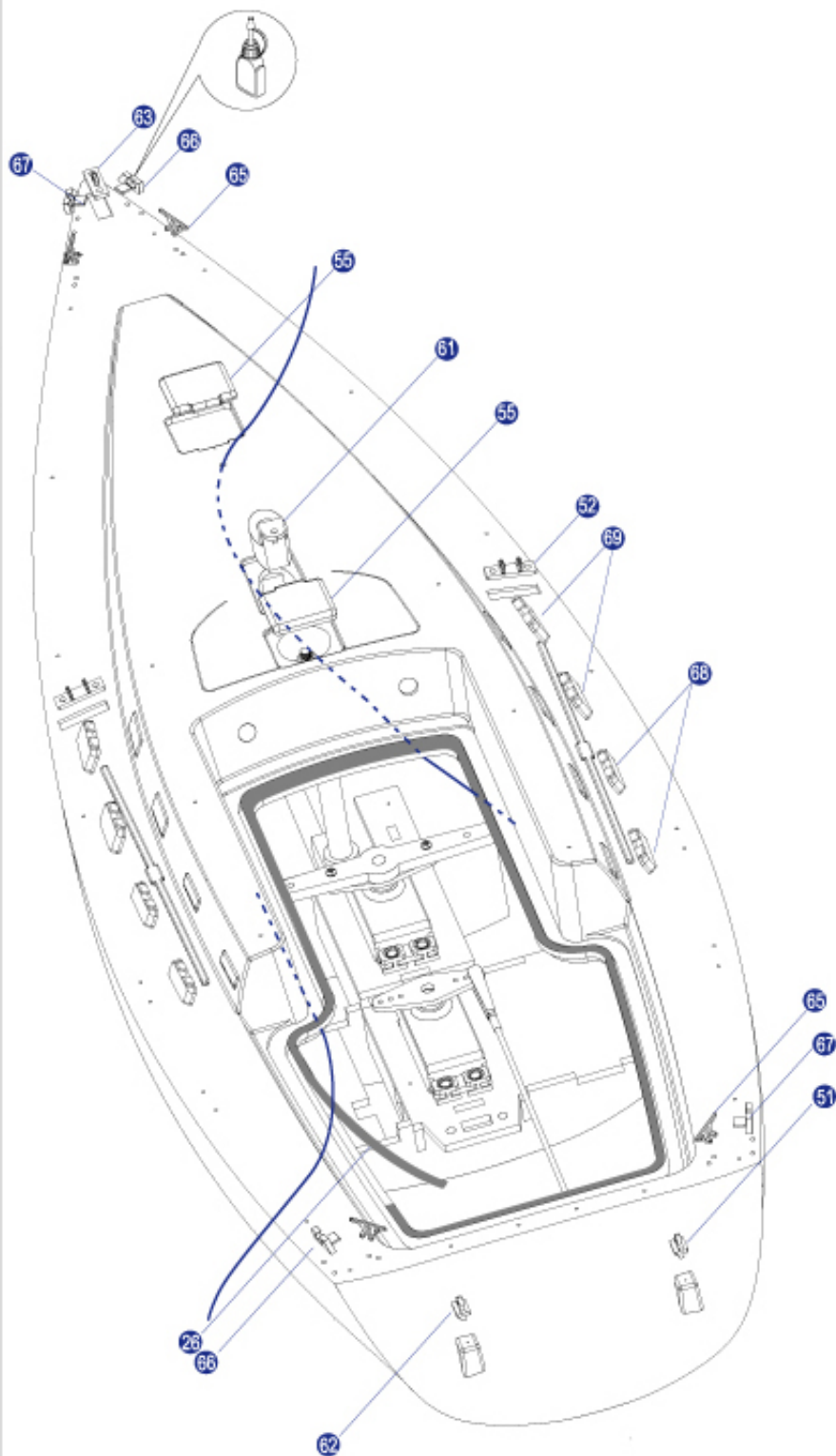


## 6

### Decoration Assembly

26 48 51 52 55 61 62 63  
65 66 67 68 69

1. Secure the Chain Plates **51** **52** **62** **63** and the decorations **65** **66** **67** with CA glue on the mold dot as shown.
2. Refer to box photo and apply all decal **48** to the hull, Porthole **68** **69** and Hatch Window **55**. CA the porthole in place. You may use double side tape for the hatch window in case you would remove or secure the locknut for keel.
3. Epoxy the Mast Mount **61** in place as shown. Make sure there is no epoxy inside the mast mount as the mast will install in later.
4. Place the strips of Foam Tape **26** in groove around hatch opening as shown.

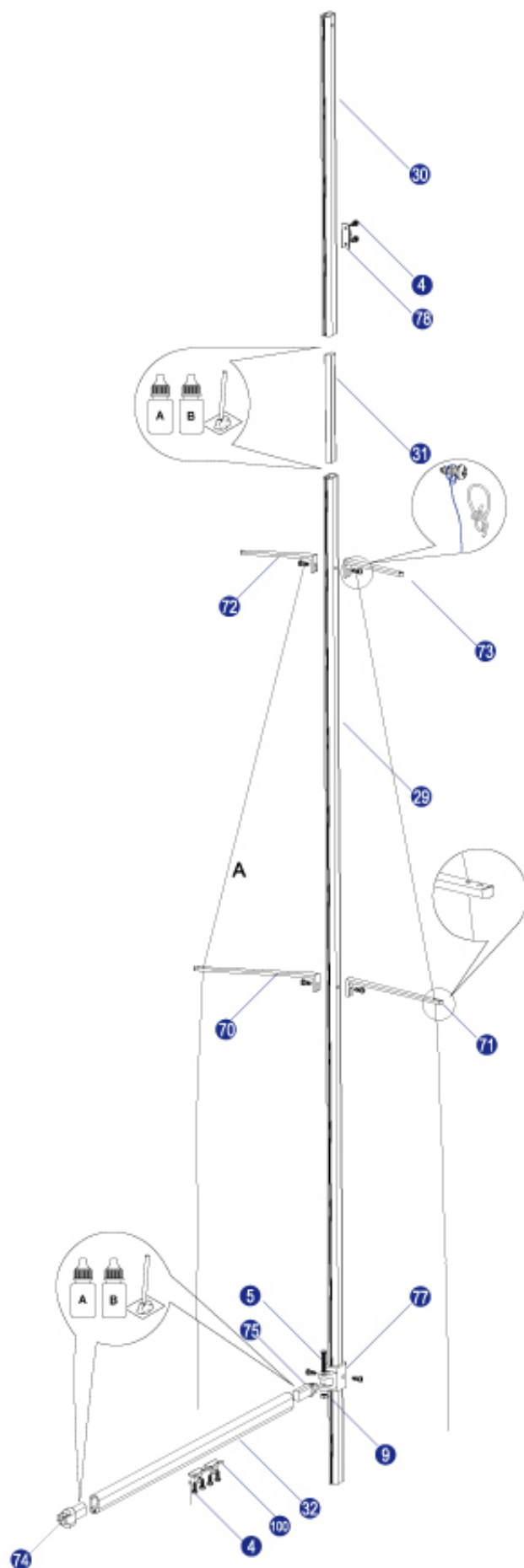


## 7

### Main Mast Assembly

4 5 9 29 30 31 32 70  
71 72 73 74 75 77 78 100

1. Secure the two Ends **74** **75** onto the Main Boom **32** with CA glue or epoxy.
2. Secure the Chain Plates **78** **100** on the main boom and Mast B **30** with 2x5mm wood screws **4** respectively .
3. Cut two pieces of black strings **24** in length of 35"(90cm), then make a Bowline knot at the 2x5mm Wood Screw **4** .
4. Install all Spreaders **70** **71** **72** **73** in place as illustration with 2x5mm wood screws. Thread the rigging string through the second hole of the Spreaders **70** **71** .
5. Assemble and Main Mast A **29** and B **30** with the Mast Joiner **31** and Boom Joiner **77** . Secure the boom joiner with 2x5 mm wood screws.
6. Install the main boom on the boom joiner with 2x12mm Screw **5** and M2 Nut **9** . Keep the main boom moves freely.

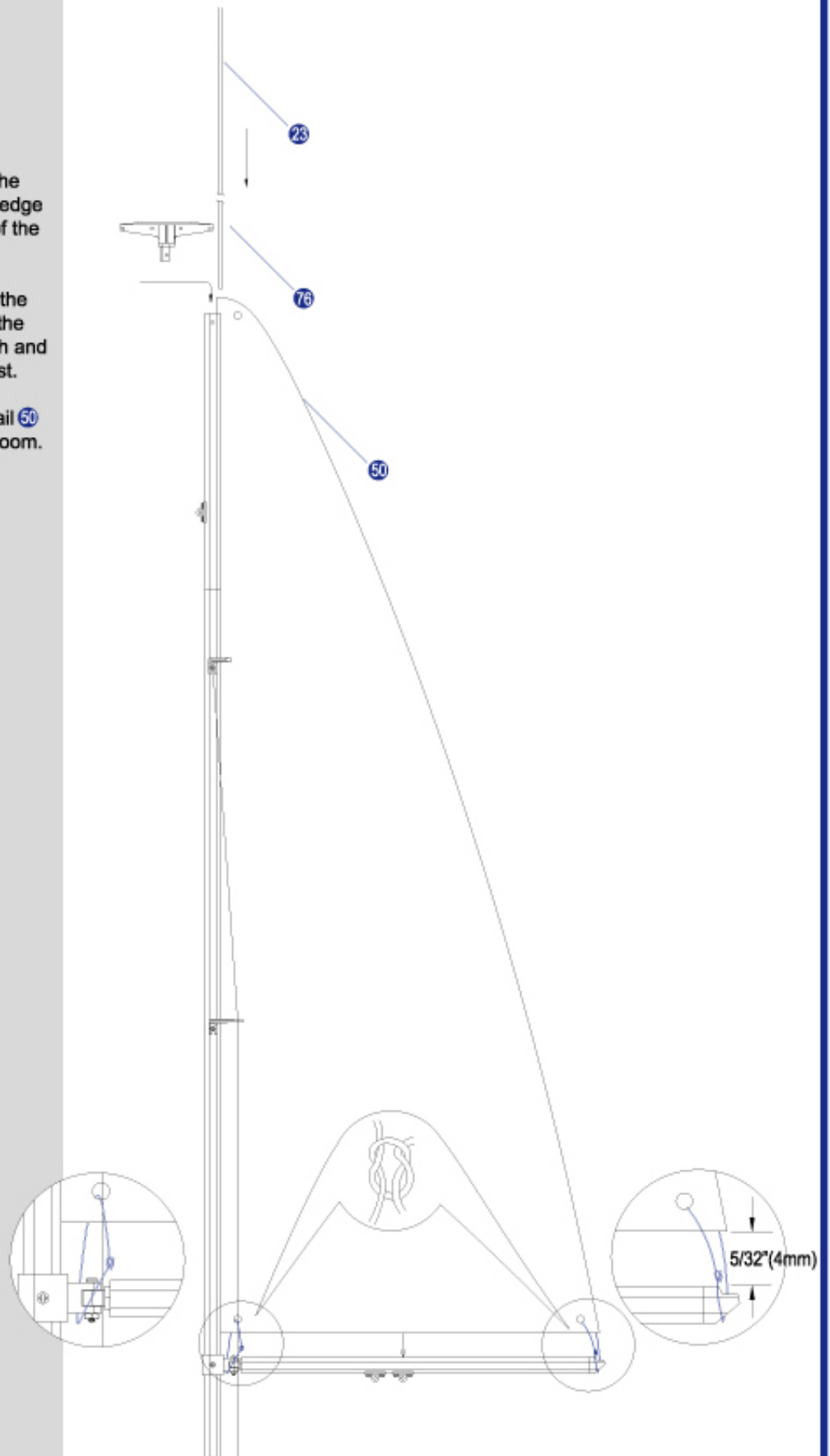


## 8

### Main Sail Attachment

23 50 76

1. Thread the PE String 23 in the sheet, next slide the leading edge of main sail into top groove of the mast.
2. Install the Head Crane 76 to the mast. Make sure that all the leading edge of sail is smooth and securely in the groove of mast.
3. Now you may tie the Main Sail 50 with the black string on the boom. Reef knot is Suggested.



## 9

### Main Sail Rigging

81

1. Attach the main mast assembly to the main mast mount.

2. Cut 4 pieces Rigging Strings 80 in length as shown for use in this step.

Mast String A x 1	86"(220cm)
Forestay String B x 1	39"(100cm)
Backstay String C x 1	43"(110cm)
Backstay String D x 1	13"(33cm)

#### 3. Mast String A

Thread the Mast string A from the first hole of lower Spreader through the upper Spreader tip, then the mast top hole, back down to the upper Spreader tip and finally back to the first hole of the lower Spreader .

Thread the string through the first hole of the String Adjuster 81, then the second hole. Next thread through the chain plate then make a Bowline knot on the third hole. Keep adjuster is about 50mm to the Chain Plate. Do the same procedure on the other side of the string A . Same way to make adjusters on A' string which you did in step 7. Now you can adjust the tension of A and A' string .

#### 4. Forestay String B

Make a Bowline knot at the head crane tip as shown. Do the same way as Mast String A to thread adjuster and chain plate.

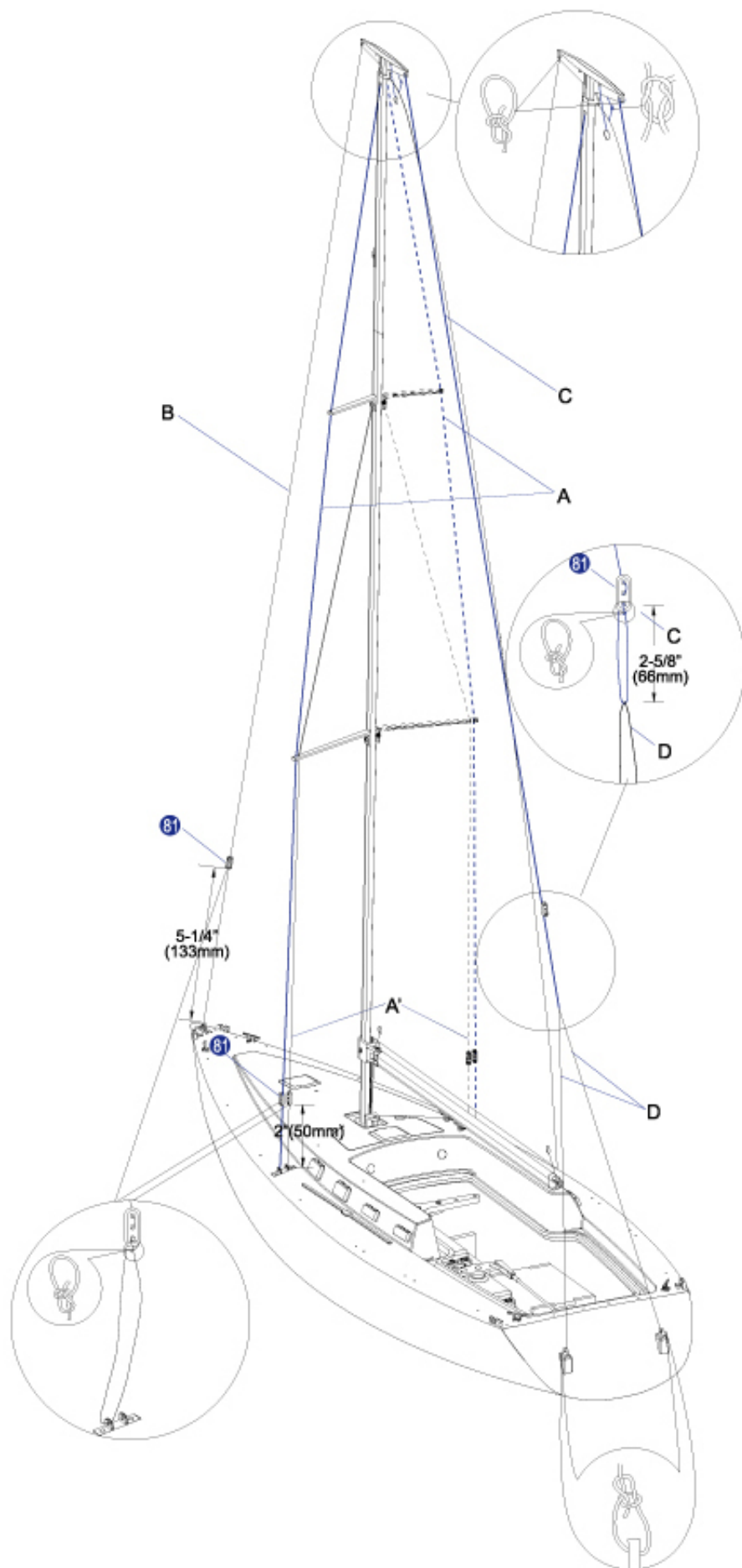
#### 5. Backstay String C

Cut a piece of black string in length of 4"(100mm) then tie the main sail on the head crane as illustration.

Thread the Backstay String C to another side of the head crane tip, make a Bowline knot then thread String C through adjuster the same way as string A. Keep adjuster is about 66mm in length to the end of the string.

#### 6. Backstay String D

Make a Bowline knot on the chain plate at the stern then thread Backstay String D through String C, adjust the tension and make the same knot at another chain plate. Adjust the tension on the String C adjuster.

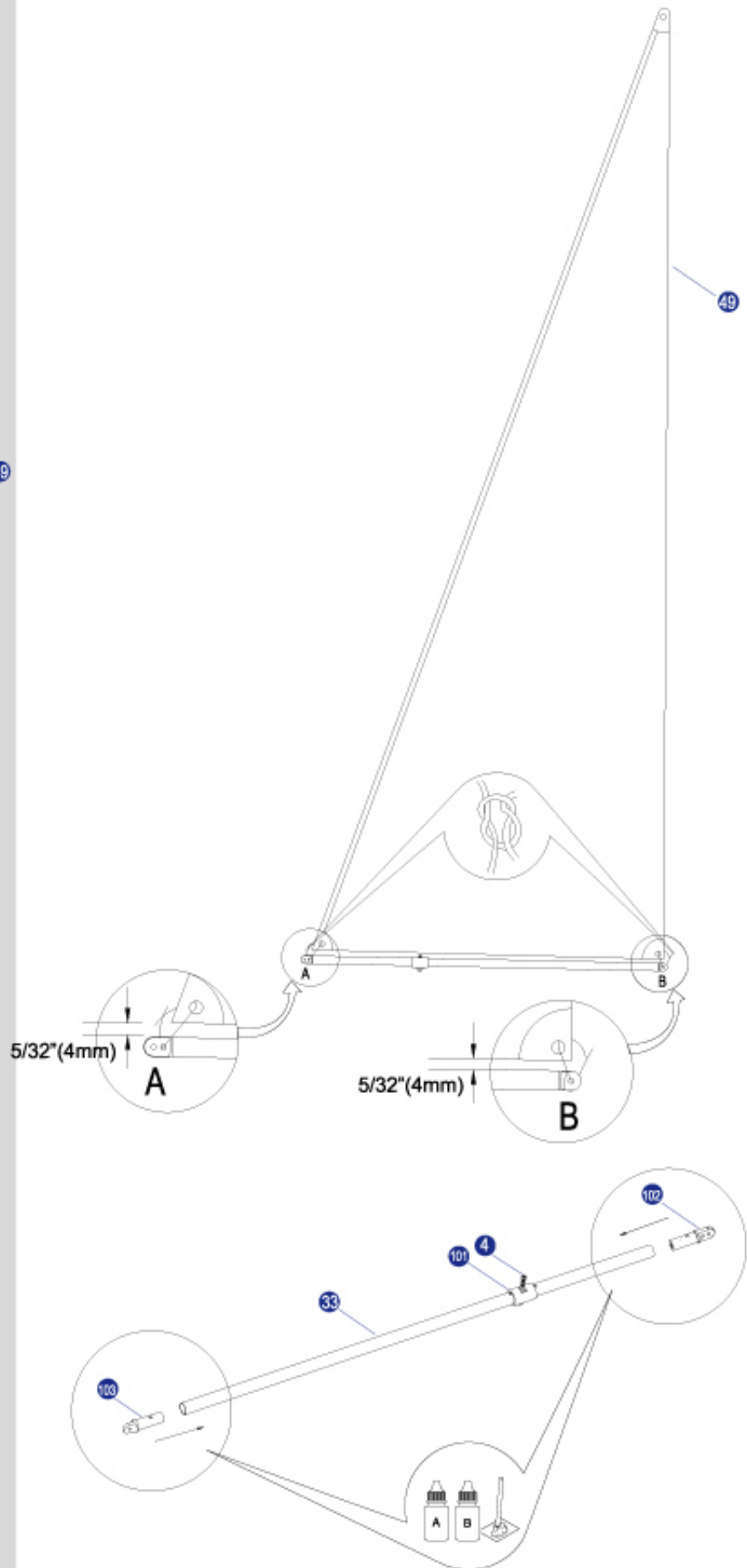


## 10

### Jib Boom and Jib Sail Assembly

4 33 49 101 102 103

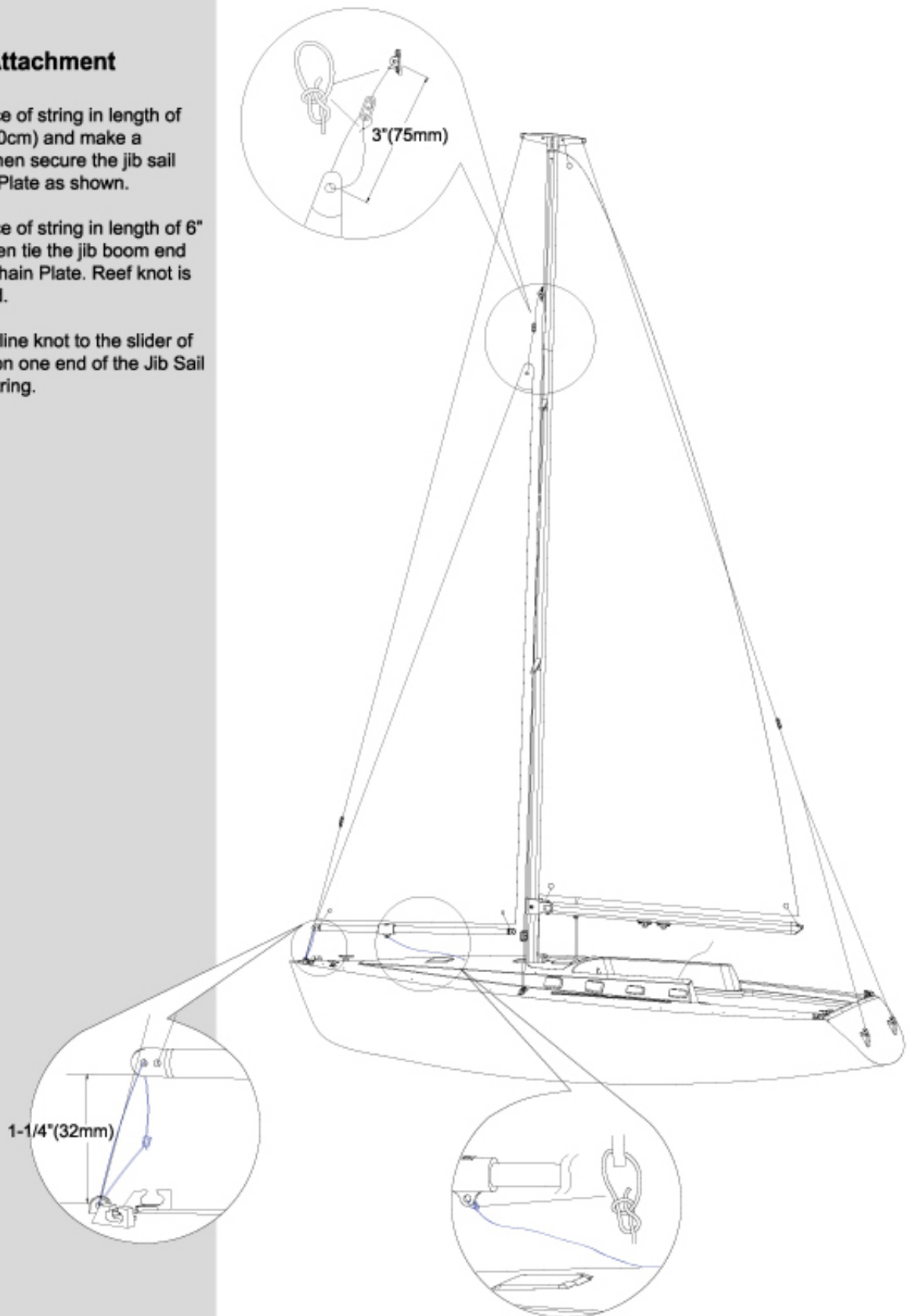
1. Place the Plastic Slider **101** on the Jib Boom **33** as illustration then secure the slider at the second hole with 2x5mm Wood Screw **4**.
2. Epoxy the two Jib Boom End **102** **103** in place. Note the orientation of the ends.
3. Use black string to tie the Jib Sail **49** on the boom. Reef knot is suggested.



## 11

### Jib Sail Attachment

1. Cut a piece of string in length of 11-3/4" (30cm) and make a adjuster then secure the jib sail on Chain Plate as shown.
2. Cut a piece of string in length of 6" (15cm) then tie the jib boom end on Bow Chain Plate. Reef knot is suggested.
3. Tie a Bowline knot to the slider of jib boom on one end of the Jib Sail Control String.



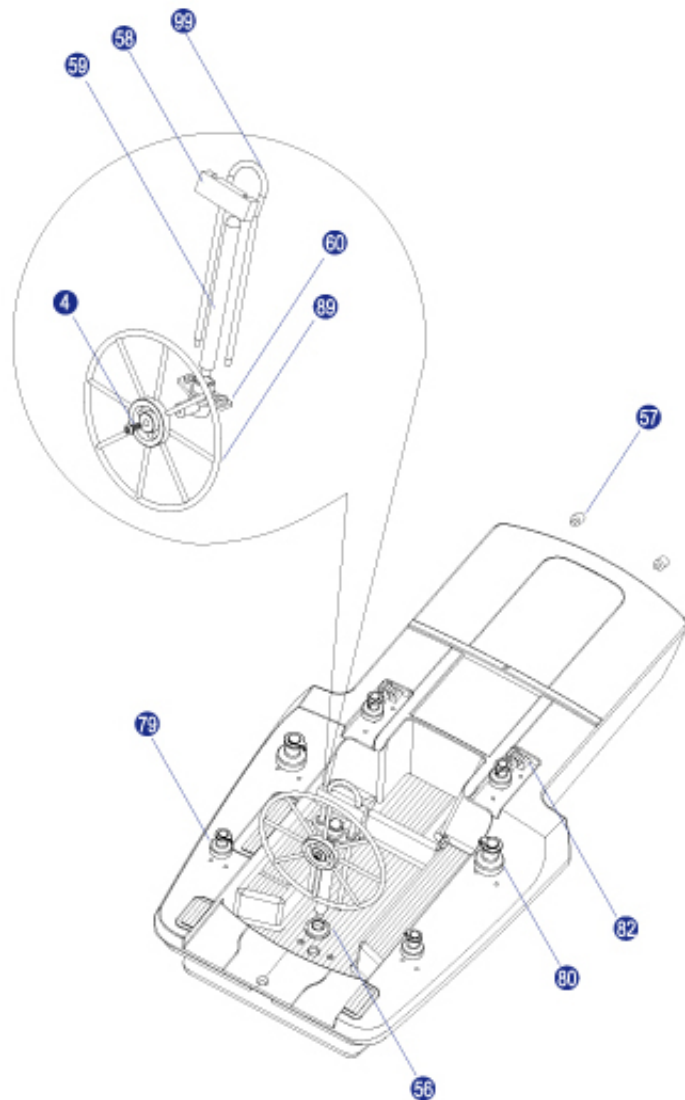
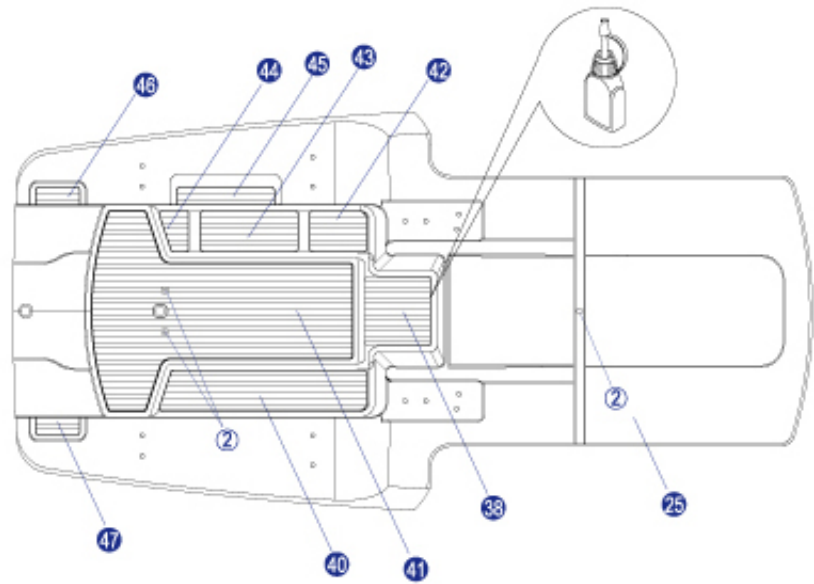


## 12

### Hatch Cover Assembly

4 25 38 40 41 42 43 44  
45 46 47 56 57 58 59 60  
79 80 82 89 99

1. Locate the Deck Planking then use CA to glue them on the Hatch Cover 25 as illustration. Refer to drawing and use 2mm drill bit to drill the holes.
2. Install Steering Wheel Retainer, 60, Steering Wheel Stand A 59, B 99, and Instrument Panel 58 together by using CA instant glue, then secure Steering Wheel 89 on steering wheel retainer with 2x5mm Wood Screw 4. Set it aside and wait final assembly.
3. Secure the Winch 79 80, Steering Wheel Base 56, Decoration 82 and Hatch Cover Retainer 57 with CA glue on the mold dot as shown. Then glue the steering wheel stand on the steering wheel base.

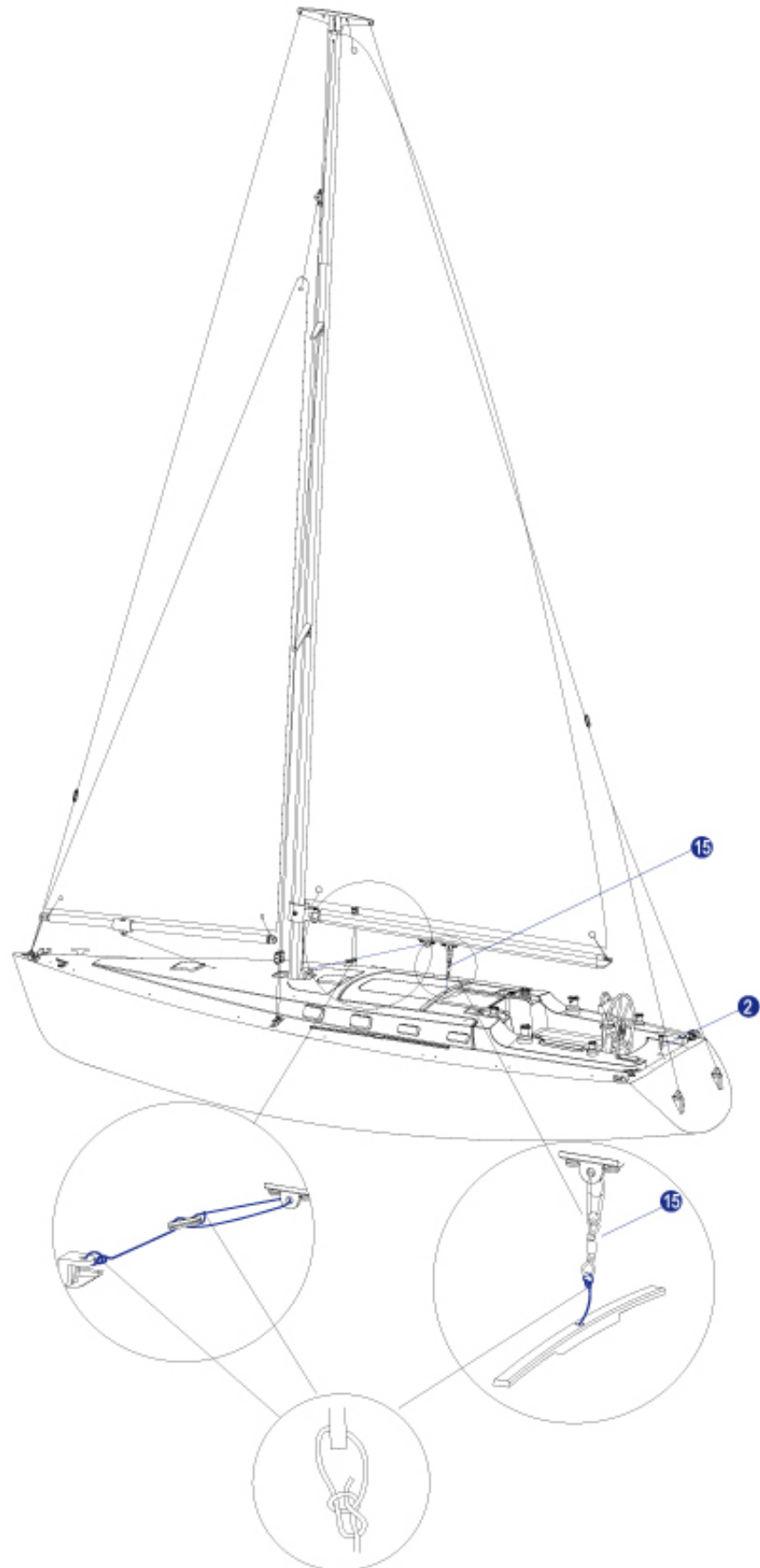


## 13

### Attaching the Rigging Snaps

2 15

1. Thread one end of the Main Sail Control String through the hole of the hatch cover, then attach the hatch cover assembly in place, secure it on the hull with 3x16mm Sink Head Screw 2 .
2. Cut a piece of black string in length of 10" (25cm) , make a bowline knot on the mast mount. Thread the string through the first hole of the string adjuster, then the second hole. Next thread through the Chain Plate on the boom as shown then the third hole of adjuster, make a bowline knot again.
3. Tie a bowline knot to the Swivel 15 on the end of the main sail control string but keep the string about 1-5/8"(40mm) out of the deck. Then snap the swivel on the another chain plate of the mast boom.

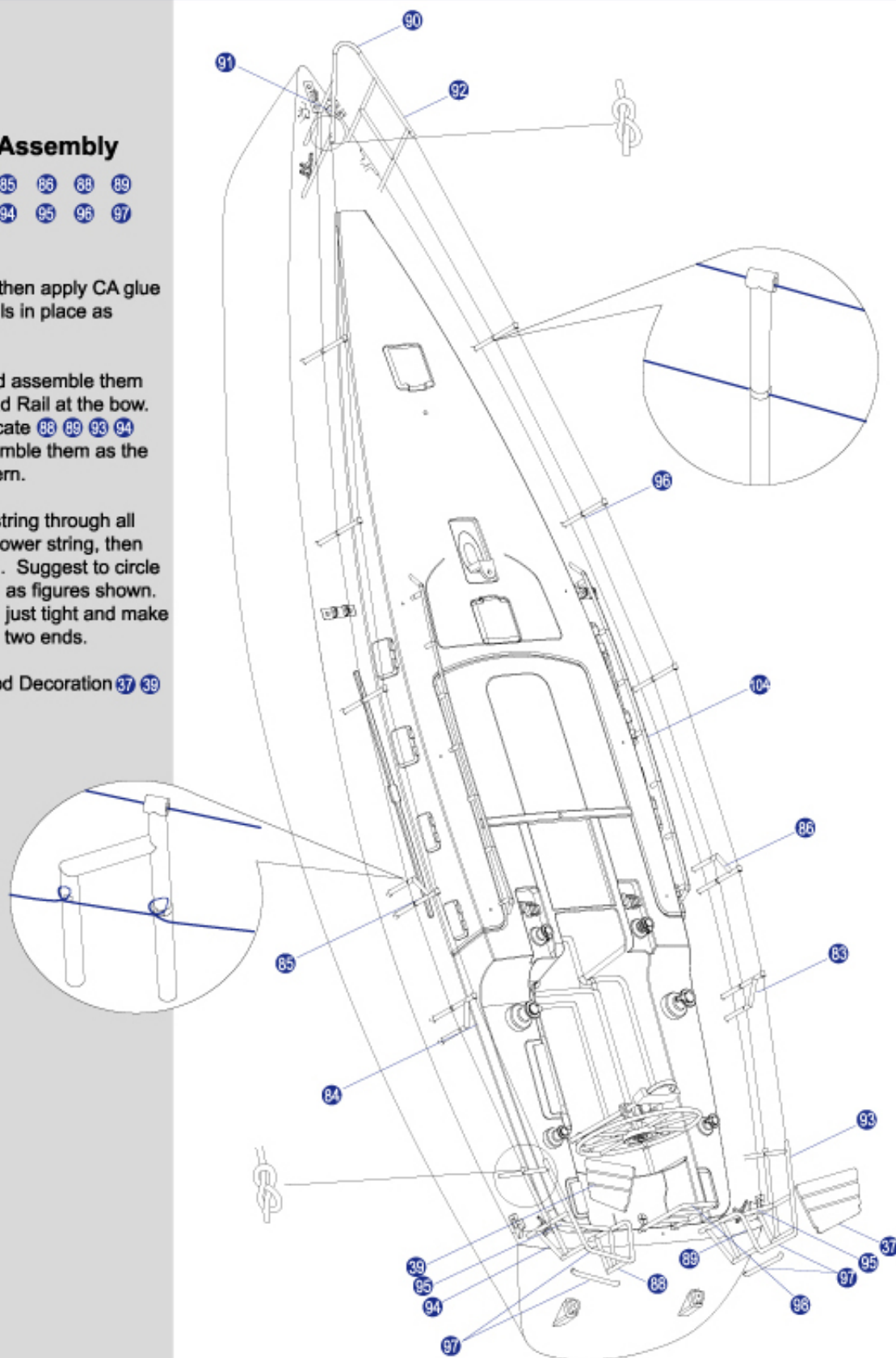


## 14

### Hull Fittings Assembly

37 39 83 84 85 86 88 89  
 90 91 92 93 94 95 96 97  
 98 104

1. Trial fit the rails then apply CA glue to secure the rails in place as illustration.
2. Locate 90 97 and assemble them carefully as Head Rail at the bow. Same way to locate 88 89 93 94 95 97 then assemble them as the Taffrail at the stern.
3. Thread the rail string through all rails, start from lower string, then the higher string. Suggest to circle around each rail as figures shown. Adjust the string just tight and make figure 8 knots at two ends.
4. Glue the Plywood Decoration 37 39 in the taffrail.



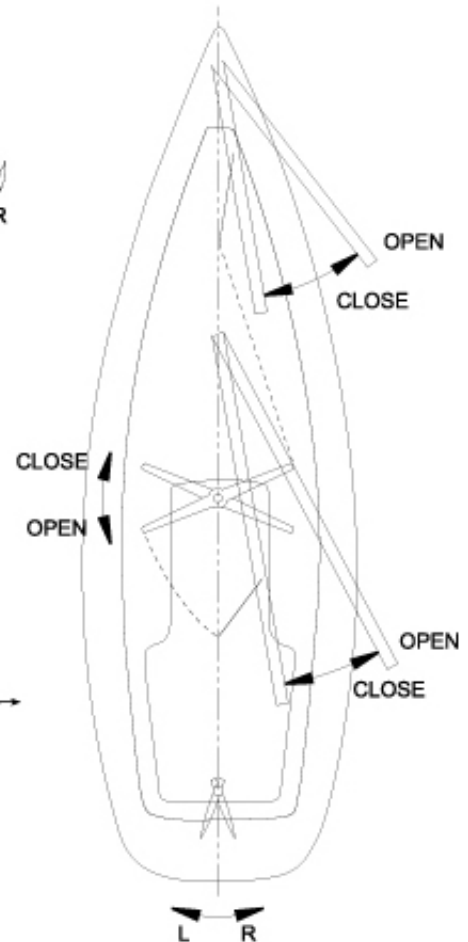
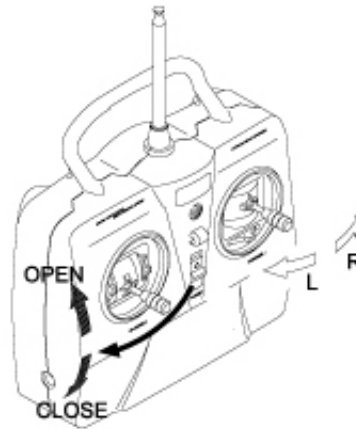
## Preparations for Sailing

Before sailing your ODYSSEY II for the first time, take note of the following:

- A. Make sure that your transmitter antenna is extended completely. Make sure that the receiver antenna is completely uncoiled (either inside or outside the hull).
- B. Always turn the transmitter on before the receiver, likewise, turn the receiver off before the transmitter.
- C. Check that each sail, line, snap, and fitting is properly installed and adjusted.

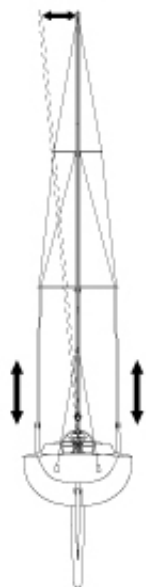
### CAUTION:

Periodically check all knots if loose and the inside of the hull to make sure that there is no excessive accumulation of water. Suggest to test the boat in light-middle wind, stronger wind will bend the boat very much, properly control the angle of main sail and operate the yacht in light-middle wind is recommended.



## Tuning Your ODYSSEY II for Proper Operation

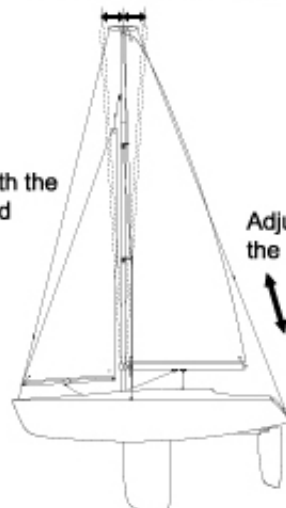
Straighten any left or right leaning of master



Tighten or slacken the adjuster in order to straighten the mast.

Straighten any forward or backward inclination of master

Adjust with the jib halyard



Adjust with the backstay.

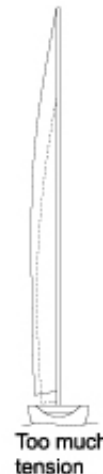
1. If your boat carries weather helm, incline the mast a bit forward.
  2. If your boat carries lee helm, incline the mast a bit backward.
- Refer to the explanation of weather helm and lee helm below



Too little tension



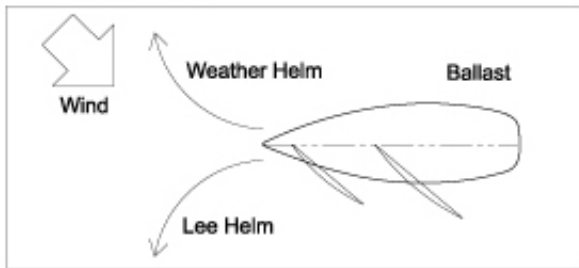
Proper adjustment



Too much tension

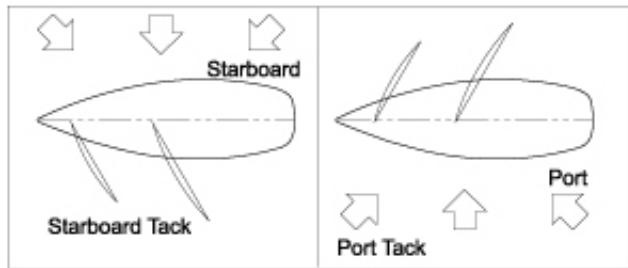
Maintaining an optimum sail profile is important for both speed and control. You may need to make some finer adjustments to your tuning to obtain the sail profile you want. The sail profiles shown in the figure are viewed from behind.

## Mast Adjusting



### Weather Helm and Lee Helm

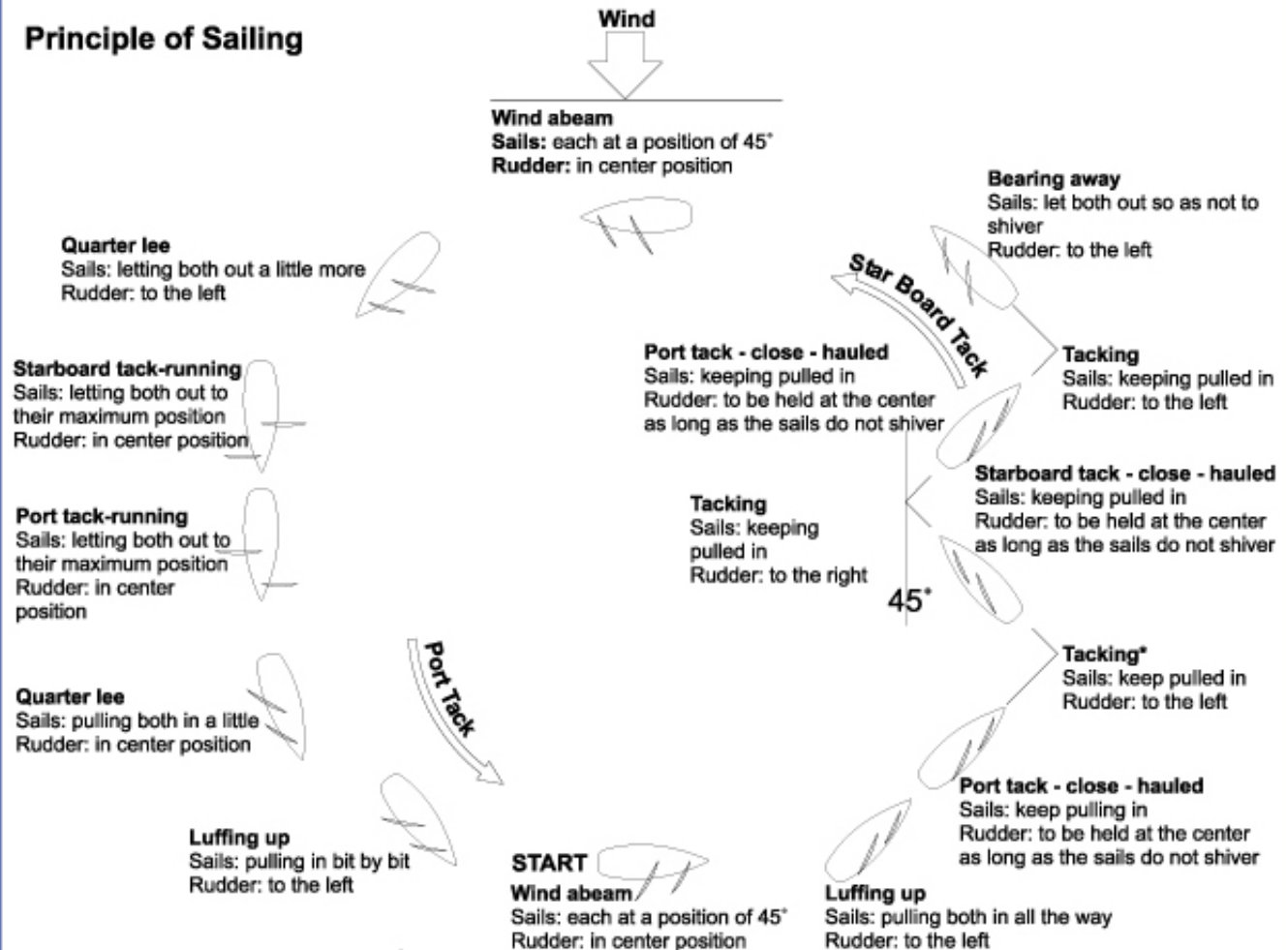
With the Rudder in line with the Keel, if the boat tends to turn windward, it is said that the boat carries weather helm. If it tends to turn leeward, it is said that it carries lee helm. The situation in which the boat shows neither tendency is called balanced helm. In general, a boat carrying a slight weather helm is better in performance than one carrying lee helm or having balanced helm. Therefore, after adjusting the boat to balanced helm re-adjust it so that it carries slight weather helm.



### Starboard Tack and Port Tack

The right side of the boat is called starboard and the left side of boat s called port. When the yacht sails with the wind cross the starboard and the mainsail is on the port side, it is said that the boat is on a starboard tack. When it sails with the wind cross the port and with the mainsail on the starboard, it is said that boat is on a port tack. You can sail on a starboard or port tack when sailing close-hauled (i.e. windward), wind abeam (i.e. leeward).

## Principle of Sailing



### Other Tips

- \* Sail your ODYSSEY II only in still bodies of water. Never sail your boat in running water such as streams or rivers, as it is easy to lose control of your boat.
- \* Do not sail ODYSSEY II in very heavy winds.
- \* If you will be operating your ODYSSEY II in the same area as other R/C craft, be sure that you are all on different frequencies to help avoid any mishaps.

LAND

## PJ6221 Hull



Hatch Cover (1)



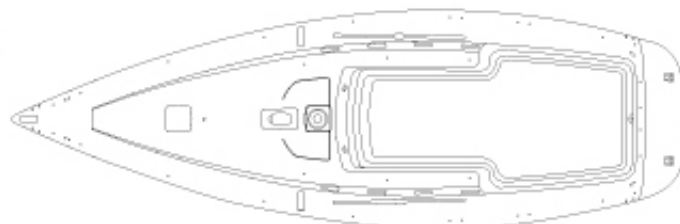
Foam Tape (1)



Keel Tube (1)

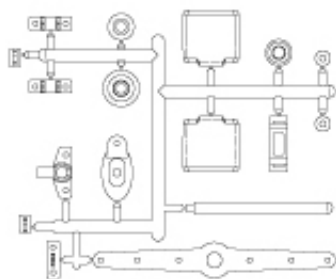


End Cup (2)



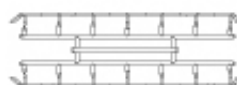
Hull (1)

## PJ6226 Decoration Set A

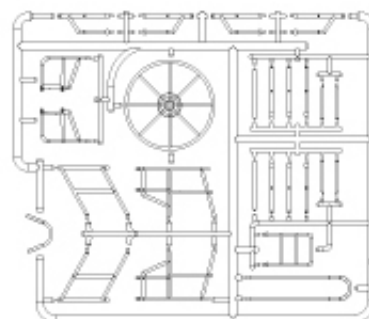


A Tree (1)

## PJ6227 Decoration Set B

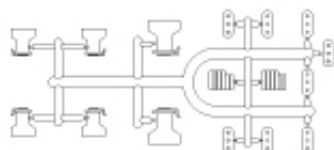


B Tree (1)



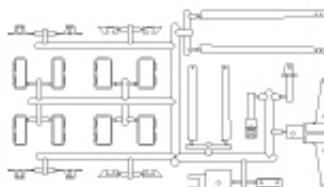
B Tree (1)

## PJ6236 Decoration Set C



C Tree (1)

## PJ6228 Decoration Set D



D Tree (1)

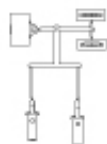
## PJ6235 Boom



Main Boom (1)



Jib Boom (1)



E Tree (1)

## PJ6224 Rigging String



Black String (1)



PE String (1)

## PJ6237 Hardware



4-way Wrench (1)



M2 Nut (1)



2x5mm Wood Screw (14)



3x16mm Sink Head Screw (1)

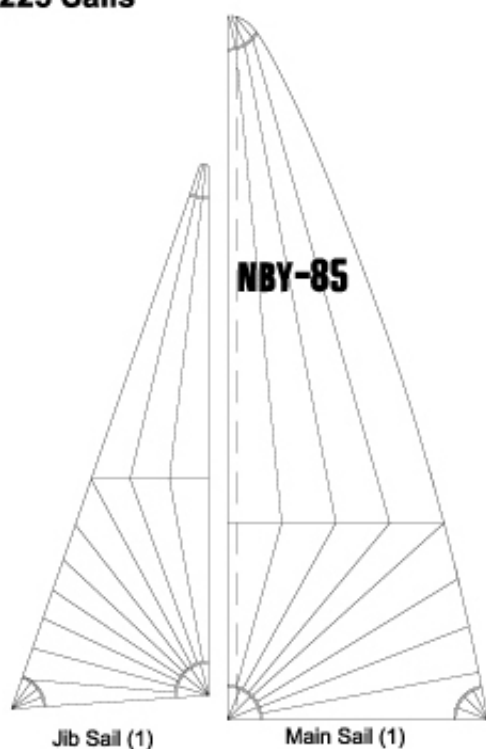


2x8mm Wood Screw (2)

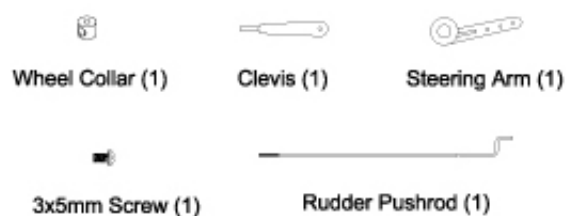


2x12mm Screw (1)

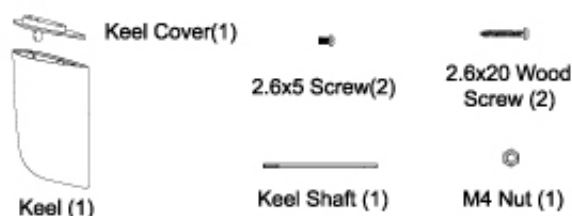
## PJ6225 Sails



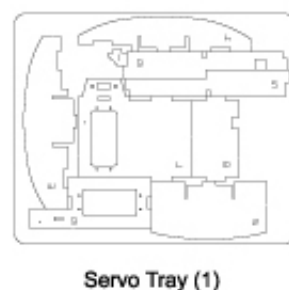
## PJ6233 Rudder Linkage



## PJ6230 Keel



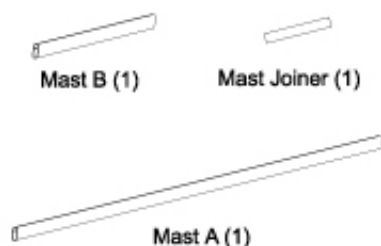
## PJ6229 Servo Tray



## PJ6232 Rudder



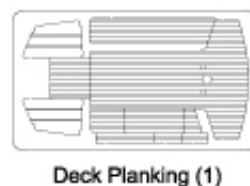
## PJ6234 Mast



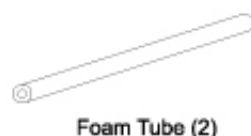
## PJ6231 Steel Ball



## PJ6222 Plywood Decoration



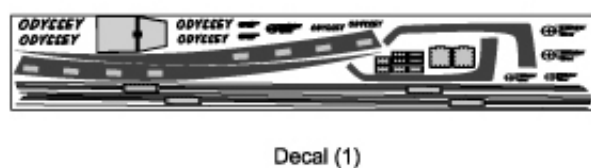
## PJ6239 Foam Tube



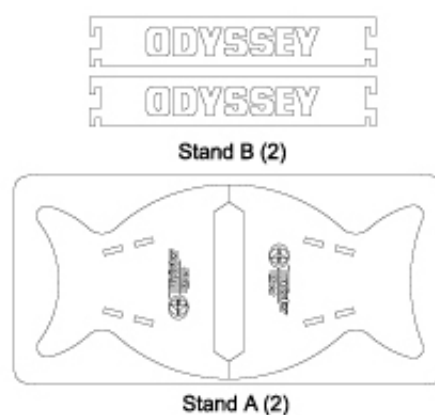
## PJ6062 Swivel



## PJ6238 Decal



## PJ6223 Boat Stand



# ODYSSEY II

1/23 SCALE RACING YACHT

**No.5553**

**Specifications:**

Length: 24.01"(610mm)

Beam: 7.87"(200mm)

Sail Area:268.2 sq.in.(17.3dm<sup>2</sup>)

Mast Height: 31.10"(790mm)

Overall Height: 41.34"(1050mm)

Overall Weight: 3.5 lb.(1.6Kg )

