

Z420

Rigging Manual

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1. Unpacking and Preparation

Unpack the major parts listed below and lay them out on a soft piece of ground free of sharp objects. To avoid damaging contents, do not cut into packaging.

a. Hull

b. Spar Kit which includes:

- Mast
- Boom

c. Boat Kit which includes:

- Mainsail
- Mainsheet
- Jib
- Jib Sheet
- Spinnaker Spinnaker sheets
- Tiller/Hiking Stick Bow line
- Top Batten
- Rudder Assembly

.....
Tools: To rig your Z420 for the first time you will need the following:

- Knife
- 2 adjustable wrenches and/or pliers
- Electrical tape

.....
Note: All lines are as long as necessary for maximum purchase. LaserPerformance encourages you to customize line lengths for your sailing pleasure, but be sure to cut and burn ends to prevent fraying.

2. Assembling the Mast

1. Untie halyards and tie off free ends to the horn cleats so they won't be lost when stepping. (figure 1) Make sure the hoist end of the main halyard is aft of the spreader brackets and other rigging is forward. (figure 2)



figure 1



figure 2

2. To install the spreaders, remove the clevis pins and cotter rings and slide the end of each spreader with two holes into the bracket on the mast: with the thin edge facing aft on the mast. (figure 3)



figure 3



figure 4

3. Line up the holes and reinstall the two clevis pins and reattach the cotter rings. (figure 4)

4. Remove the clevis pins in the outboard end of each spreader and pull out the small clip. (figure 5)



figure 5



figure 6

5. After locating the port upper shroud, slide the clip onto it and back in to the port spreader: then reinsert the clevis pin. Repeat for the other starboard spreader. Double check there is no rigging running between the upper ends of the shrouds and spreaders. (figure 6)

6. For extra security, use tape around the ends of the shrouds and spreaders to keep the cotter pins from working loose. (figures 7 & 8)



figure 7



figure 8

3. Stepping the Mast

Warning: Make sure the bow of the boat is pointing into the wind and that there are No Overhead Electrical Wires in the Area!

1. Place the bottom of the mast against a solid object, lift the top end, and walk toward the bottom, raising it hand over hand until the mast stands vertical. Rotate the mast until the gooseneck points toward the stern. (figure 9)
2. Keep your hands a good distance apart and angle the mast into the step from the side, then lower the mast bottom onto the step. (figures 10 & 11)
3. Push the mast forward until it sits against the partners; if the bottom of the mast is secure the mast will stay in place leaning forward. (figure 12)
4. Attach the headstay to the forward clevis pin on the bow; then push the mast aft until the headstay supports it and attach the shrouds. They will not be very tight; the jib halyard will tension them properly when sailing. (figures 13 & 14)



figure 9



figure 10



figure 11



figure 12



figure 13



figure 14

4. Rigging the Boom

1. Lie the boom on the deck with the gooseneck fitting forward. Pull the clevis pin out from the mast fitting (figure 15) and line up the holes, then insert the pin. (figure 16)
2. Place something under the aft end of the boom to keep it from scratching the gelcoat while you finish rigging.



figure 15



figure 16

5. Vang

1. Attach the top block with twisted shackle, on the top purchase of the boom vang, to the boom bail. With the primary vang line, tie a bowline to the loose vang block. (figure 17)



figure 17

2. Lead the other end of the primary vang line through the top block from stern to bow: down to the center of the triple block mounted near the bottom of the mast. (figure 18)



figure 18

3. Lead the line back up and tie a bowline to the becket of the top vang block. (figure 19)

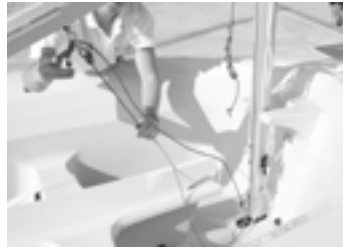


figure 19

4. Unwrap the tail of the vang control line from the post traveler bar. (figure 20)



figure 20

5. Lead one end forward through the port side of the triple block at the bottom of the vang cascade, from bottom to top. Lead the line up through the loose vang block, (figure 21) and down through the starboard side of the triple block, from top to bottom. (figure 22)



figure 21

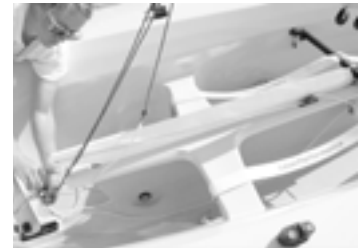


figure 22

6. Then lead both ends of the vang control line aft through the 2 pictured turning blocks (figure 23) and up through the cam cleats. Finish by tying a stopper knot in both ends of the vang control line. (figure 24)



figure 23



figure 24

6. Mainsheet

1. Thread one end of the mainsheet through the center of the forward mainsheet block in the boat and tie a stopper knot. (figure 25)



figure 25

2. Lead the other end of the mainsheet up through the forward block on the boom from aft to forward. (figure 26)



figure 26

3. Continue down, leading through the forward mainsheet block in the boat: from forward to aft. Continue up, leading through the rear mainsheet block on the boom: from forward to aft. (figure 27)



figure 27

4. And finally, leading the loose end down through the mainsheet ratchet block from forward to aft, so the ratchet engages when pulled taught. (figure 28)



figure 28

Tie a stopper knot in the end and make sure the mainsheet is clear of any knots.

7. Jib

1. Remove the clevis pin just aft of the headstay, (figure 29) line up the jib tack between the holes and reinsert the clevis pin. (figure 30)



figure 29



figure 30

2. Shackle the jib halyard to the head of the sail.

3. Find the mid-point of the jib sheet and feed it, as a loop, through the clew of the sail. (figure 31)



figure 31



figure 32

4. Pass both ends through the loop keeping the end length fairly even. (figure 32)

5. Bring each end back through a jib fairlead, inside the shrouds towards the cleats and finish with a stopper knot. (figure 33)

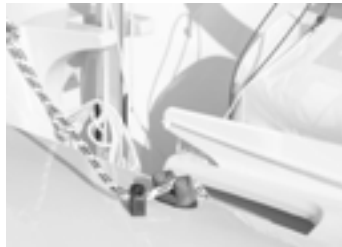


figure 33



figure 34

6. Make sure the jib sheets will run free and pull up the halyard. (figure 34)

7. When the sail is most of the way up, you will discover the halyard is attached to the becket on a block (figure 35); pass the tail of the halyard down through the cheek block near the heel of the mast, up through the block and down to the cleat. (figure 36)



figure 35



figure 36

8. Tension the jib halyard and the cleat end, then hang the halyard coil between the halyard and the mast, above the cleat. (figure 37)



figure 37

8. Mainsail

1. Unroll the mainsail near the boom. Locate the tack slug (figure 38) and slide it into bottom track area of the mast, and slide down. (figure 39)



figure 38



figure 39

2. Locate the clew slug and slide it into the aft end of the boom track. (figure 40)



figure 40



figure 41

3. Pull the clew aft and attach the outhaul by inserting the bob through the clew and securing to the end of the boom. (figure 41)

4. Locate the aft end of the main halyard and attach it to the head of the mainsail. (figure 42)



figure 42



figure 43

5. Make sure the mainsheet and vang will run free and hoist up the sail, as you feed it into the sail track. (figure 43)

6. Once the sail is near the masthead, you will find a stainless ring tied into the line. Pass the free end the halyard through the ring so a loop is formed. (figure 44) Use it as a purchase to hoist the sail fully, when you are ready to sail.



figure 44



figure 45

7. Cleat off the halyard, and hang the coil between halyard and mast. (figure 45)

9. Cunningham

1. The cunningham is attached to the port side of the mast. Lead the loose end from the port side to the starboard up through the grommet (figures 46 & 47) in the luff of the mainsail and back down to the clam cleat on the starboard side of the mast. (figure 48)

2. Tie a stopper knot in the end to prevent it working loose.



figure 46



figure 47



figure 48

10. Autobailer and Plugs

1. Before launching check that the elastic is secure for the auto bailer (figure 49) and make sure tennis balls are snug against the transom. (figure 50)

2. Ensure that forward and aft plugs are closed and there is no water inside the hull. (figures 51 & 52)



figure 49



figure 50



figure 51



figure 52

11. Rudder and Centerboard

To install the rudder downhaul system,

1. Thread the provided short rudder downhaul line through the leading edge of the rudder blade. (figure 53) and out the starboard side. (figure 54)
2. Tie a figure eight stopper knot in the aft end. (figure 54)
3. Line up the top hole of the rudder head with bottom hole of the rudder blade. (figure 55)
4. And Insert the rudder pivot bolt: place provided washer then nut and tighten with a wrench. Make sure the pivot rudder bolt is tight enough so the blade will pivot freely. (figure 55)



figure 53



figure 54



figure 55



figure 56

Note: BE CAREFUL NOT TO CROSS THREAD THE EYE BOLT INTO THE INSERT WHEN FITTING.

5. Pass the short downhaul line up through the center of the rudder head, over the top forward bolt with sleeve and forward through the groove (figure 56), and tie a bowline to the elastic loop. Attach the long downhaul line to the elastic loop with a bowline. (figure 57)
6. Slide the rudderhead gudgeons onto the pintles (figure 58); then slide the tiller onto the rudder head. (figure 59)
7. Tighten the long rudder downhaul line and cleat to the tiller. (figure 60)
8. Once you have launched the boat into the water, pull the centerboard downhaul line to pivot the centerboard to the down position and secure with the downhaul bungee. (figure 61)



figure 57



figure 58



figure 59



figure 60

Warning: If the centerboard is not secured and fully retracts during a capize, the boat will invert and there is a risk of entrapment.



figure 61

12. Care, Maintenance and Service of your LaserPerformance Product

Before rigging your boat, read and familiarize yourself with the 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 supporting 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. 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 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.

13. Examination Report



HPI Verification Services

Examination Report

This is to certify that the product listed below conforms to the requirements of the
Recreational Craft and Personal Watercraft Directive
2013/53/EU, Module A1 - Annex II of Decision 768/2008/EC

Certificate Number HPIVS/R1179-002-I-01
Date of Issue 31-May-2017

Manufacturer Laser Performance (Europe) Ltd.
Station Works
Long Buckby
NN6 7PF
United Kingdom

Product Description Z420

| | | | |
|-------------------------------|--|--------------------------|------|
| Description of Product | Rigid Hull, Cruising boat - Planing - Sail | | |
| Design Category | C | No of hulls: | 1 |
| Length (m) | Max. (L _{max}): 4.24 | Hull (L _H): | 4.24 |
| Beam (m) | Max. (B _{max}): 1.68 | Hull (B _H): | 1.68 |
| Maximum Load | People: 2 | Mass (kg): | 210 |
| Displacement (kg) | Light Craft: 91 | Max. (M _{LC}): | 301 |

Check this certificate is genuine



This report confirms that HPIVS have assessed the craft against ER 3.2 'Stability' & 3.3 'Flotation'. The manufacturer is responsible for compiling Technical Documentation for all the other requirements.

Managing Director

Technical Manager

This certificate is supported by a report bearing the same certificate number.
This certificate is the property of HPI Verification Services Ltd. & may not be amended or issued to others.
The manufacturer must inform HPI Verification Services of any changes that affect any of the assessed Essential Requirements. Failure to do this will invalidate the Certificate.

The applied conformity assessment module does NOT allow the client to affix the Notified Body's identification number on the product.



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Tel +44 1491 822818
Fax +44 700 600 6631
Email enquiries@eucertification.com
www.eucertification.com

HPI Verification Services Ltd.
The Manor House
Howbery Park, Wallingford
OX10 8BA, United Kingdom



LaserPerformance NORTH AMERICA

PO Box 1409
Norwalk, Connecticut 06856
USA
CustomerCare@LaserPerformance.com

LaserPerformance EUROPE

Station Works Long Buckby
Northamptonshire NN6 7PF
United Kingdom
CustomerCare@LaserPerformance.com

LaserPerformance INTERNATIONAL

Unit A1, 22nd floor
MG Tower
133 Hoi Bun Road, Kwun Tong,
Hong Kong
CustomerCare@LaserPerformance.com

www.laserperformance.com



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