RS 500

OWNER'S MANUAL

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1. INTRODUCTION

Congratulations on the purchase of your new **RS 500** and thank you for choosing an RS product. We are confident that you will have many hours of great sailing and racing in this truly excellent design.

The RS 500 is an exciting boat to sail and offers fantastic performance. This manual has been compiled to help you operate your RS 500 with safety and pleasure. It contains details of the craft; the equipment supplied or fitted, its systems and information on its safe operation and maintenance. Please read it carefully and be sure that you understand its contents before using your RS 500.

This manual is not a course on boating safety or seamanship. If this is your first boat, or you are changing to a type of craft you are not familiar with, for your own safety and comfort, please ensure that you have adequate experience before assuming command of the craft. If you are unsure, your dealer or national sailing federation (the Royal Yachting Association) will be able to advise you of a local sailing school, or competent instructor.

Please keep this manual in a secure place and hand it over to the new owner if you sell the boat.

For further information, spares and accessories, please contact your local dealer or:

LDC Racing Sailboats
Trafalgar Close
Chandlers Ford
Eastleigh
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Tel. 023 8027 4500
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Email. rs@ldcracingsailboats.co.uk

EC DECLARATION OF CONFORMITY TO DIRECTIVE 94/25/CE

I declare that the craft described as:

RS 500

Bearing the Hull Identification Number:

G	B	L	D	C	5							0	6

Sail Number: _____

Conforms to EU Recreational Craft Directive 94/25/EC as amended by Directive 2003/44/EC

Annex 1 – sections 3.2 & 3.3 and Annex 6 – Module A

Module A – Internal Production Control – Self-assessment

ISO Standards	BS EN ISO 10087, 12217, 12215, 10240, 14945, 8666
Trade Marque	RS Racing
Type	RS 500
Design Category	C
Maximum Crew	2
Maximum Load	250kg
Overall Length	4.55m
Overall Beam	
Builders Name	LDC Racing Sailboats Trafalgar Close, Chandlers Ford, Hampshire, England
Date	__ / __ / __ (The date does not indicate the date of manufacture)
Signed	Name: _____ Position: _____

Signature: _____

2. SPECIFICATIONS AND DRAWINGS

Identification.

Your RS 500 can be identified by two numbers, one is the sail number and the other is the Hull Identification Number.

The sail number is the number by which you register your RS 500 with insurance companies, the class association and also when you sign on for events. Not only is the sail number on the mainsail itself; it is also embossed just below the top rudder fitting on the transom.

The Hull Identification Number, or HIN, is required by European law. Every new boat sold should display a HIN to show that it meets all the guidelines set by the European community and is safe to use up to the conditions mentioned in '3.1 Design Category'. Your RS 500 complies with European law to category C (explained later) and hence displays a HIN which is imprinted on the starboard side of the transom.

The HIN is purely to show that your RS 500 meets European regulation, and therefore should be referred to by its sail number.

Dimensions.

Length	4340 mm	14' 3"
Beam	1580 mm	5' 2"
Hull weight	82 kg	180 lbs

RS 500 *S rig*

Mainsail	Dacron	7.5m²	80sq ft
Jib	Dacron	3.6m²	37sq ft
Spinnaker	Dynalite	14.8m³	125sq ft

RS 500 *XL rig*

Mainsail	Mylar	9.5m²	100sq ft
Jib	Mylar	3.6m²	37sq ft
Spinnaker	Dynalite	14.8m²	150sq ft

3. SAFETY INFORMATION

Personal preparation and owner's responsibility.

Before attempting to operate the boat, ensure that you have appropriate experience to handle the boat safely in the anticipated sea and wind conditions, that all the crew have sufficient boating experience and that they are familiar with emergency procedures (man overboard recovery, towing, etc.).

Always check the weather forecast before leaving shore, and ensure that the predicted weather and sea conditions are suitable for the boat (see 3.1). Clothing should be suitable for the anticipated weather conditions and footwear appropriate for boating.

Before going afloat, all persons should be wearing a suitable buoyancy aid (life jacket or personal floatation device), which should be worn at all times when on the water. Note that in some countries it is a legal requirement to wear a buoyancy aid that complies with their national regulations at all times.

It is recommended that you carry a whistle or horn to attract attention in case outside assistance is required.

The owner/operator is responsible for the safe operation of the boat. His/her responsibilities include properly preparing and maintaining the boat and safety equipment, knowledge of the boat operation, safety training of the crew, following the navigation rules (including knowledge of the Collision Regulations and local navigation rules), care of the environment, insurance and where necessary registration.

3.1 Design Category.

The RS 500 is a Design Category C boat. The definition of this category is:

- Design Category: C – 'inshore'
- Description of Use: Designed for voyages in costal waters, large bays, estuaries, lakes and rivers.
- Wind Force: Up to, and including Beaufort **force 6**.
- Significant Wave Height: up to, and including **2 m**.

The RS 500 complies with this design category, subject to:

- The crew having suitable skill and experience.
- Satisfactory construction and maintenance of the boat and its equipment.

Users of this boat are advised that:

- All crew should receive suitable training.
- The boat should not carry more than the maximum load.
- Any water in the hull should be kept to a minimum.
- Stability is reduced by any weight added high up.

3.2 Loading.

The RS 500 has been designed to be sailed by no more than 2 people. However it is recommended that you do not exceed the maximum loading of 250 kg, including any equipment added to the basic rigged boat. To enable the boat to be righted safely the minimum recommended crew weight is 70 kg.

All the crew and equipment should be evenly distributed to ensure that the boat is upright and approximately level. Heavy items should be securely fixed to avoid movement when underway.

3.3 Safety Equipment.

It is your responsibility to ensure that all necessary safety equipment is obtained for the type of sailing you are participating in and it is readily accessible on board while the boat is in operation.

HINT

We recommend that you sail in a location where there is adequate rescue cover, should you get into any difficulty, especially whilst learning to sail your new boat.

3.4 Capsize Recovery.

No matter how stable and secure your RS 500 feels on the water, a capsize will be inevitable. Properly handled' a capsize can be fun and definitely not something to worry about. Like everything it is best practiced on a quieter day, and preferably with a safety boat to hand.

Recovery technique.

As the boat capsizes, you should endeavour to fall cleanly into the water, trying to avoid catching sheets, sails or toestraps as you fall. You should initially ensure that:

1. If you are using the spinnaker that it is fully recovered in the chute.
2. The main and jib sheets are both uncleated.

WARNING

If the boat has capsized "on top" of you, or "to windward" as it is known, there is more chance of the boat inverting and you should ensure that you and your crew are well clear as the boat fully inverts.

If are sailing with a crew, he or she should float in between the cockpit and the boom, awaiting instructions from the helm. Then you should proceed round to the transom to the centreboard.

If the boat has inverted:

Stand on the underneath of the gunwale (now facing upwards), adjacent to the centreboard. Using the centreboard, pull yourself onto the upturned hull. Stand up straight on the underside of the gunwale and pull back on the centreboard. As the boat starts to come up onto its side, try to climb onto the centreboard. Do not worry if you are unable to do so, you can climb onto it once the boat is floating on its side. Then proceed as if the boat is on its side.

If the boat is on its side:

Stand on the centreboard, holding onto the top gunwale with your feet close to the hull. Pull back on the gunwale edge, this should start to lift the mast out of the water and right the boat. Smaller crews may have trouble with this, in which case use the top jib sheet to lean back on and walk out from the hull along the centreboard until the mast starts to lift clear of the water.

Once again, practise makes perfect! Practising these techniques will speed up the process and you can develop your own techniques for righting from a capsize quickly and efficiently.

WARNING
If the mast is lying into the wind as you pull it up the boat will right quickly.

Once the boat is upright and you are in the water holding the gunwale edge, you can either pull yourself over the gunwale, grab the toestrap and haul yourself in or go around to the transom and climb in over there. To make this

easier, the crew they should be scooped up into the cockpit as the boat is righted (the “scoop method”). Once in the boat the crew can assist the helm to get back on board.

When you are confident in righting the boat, you may find it faster (especially in a race situation) to climb into the boat from the centreboard as the boat rights known as a ‘dry capsize’ (with the aim of staying dry!). Again practice this once you are confident!

Getting going again:

Once you are back aboard you will find the water quickly drains out the transom. It is worth taking time to sort yourself out, tidying sheets away, completely recovering the spinnaker, those kinds of things. Congratulations on a successful recovery!

3.5 Air Tank.

The RS 500 is equipped with a sealed buoyancy compartment just in case of capsize or swamping. The buoyancy compartment is formed by the hull and deck mouldings and consequently the following points should be noted:

- **Do not puncture the buoyancy compartment.**
- **Should the buoyancy compartment become punctured, do not use the boat until the compartment is properly repaired. If in any doubt, contact RS Racing for repair details.**
- **It is against class rules to add any fittings; you may have to replace fittings from time to time. Ensure that all fastenings are resealed properly using an appropriate sealant. If in any doubt, contact RS Racing for details.**

3.6 Man Overboard Prevention and Recovery.

Working deck.

The working deck of the RS 500, which is intended to be occupied when the boat is afloat, is the areas covered with a none slip coating (as seen in picture 3.1). These areas are:

- The entire cockpit floor, including kick-blocks and daggerboard case, from the aft end up to the mast foot.
- The top surface and outside edge of the side deck from the aft end to the shroud points.

Crew overboard recovery.

The RS 500 is designed to be sailed by two people. However, it can be sailed single-handed. If sailing alone it is recommended that you ensure adequate safety cover is in attendance before launching.

Should you fall overboard, whilst sailing alone, the boat will soon capsize allowing you to swim to it and follow the ‘righting from capsize’ procedures previously mentioned in this manual.

To recover a crew member from the water:

- The helm should bring the boat just downwind of the person in the water.
- The helm should balance the boat, using a combination of body weight movement and sail pressure.
- The crew should board the boat via the windward gunwale with the help of another member of the crew. Or it may be easier to board over the transom using the rear toestrap to help pull your self in.

HINT

By completing a recognised sailing instruction course, you will learn how to recover a man over board quickly and effectively. We recommend attending a sailing course if you have not already done so.

3.7 Use of an Outboard Engine.

The RS 500 has not been designed with the use of an outboard motor. Therefore any attempts to do so will void any warranty and RS Racing accept no responsibility for damage, loss or injury arising from such use.

3.8 Towing, Anchoring, Mooring and Trailing.

Towing.

Should it become necessary to tow your RS 500, you should follow the procedure below:

- Pass the towing line through tack bar and then tie securely around the mast as close to deck level as possible.
- Lower all the sails.
- Fully raise the centreboard.
- Stay at the tiller. In the event of rudder loss, sit well aft.

Anchoring.

The RS 500 is not designed or equipped for anchoring and this should not normally be attempted. You should remain in control of the boat at all times.

If there is no alternative to anchoring, the anchor line should be secured round the base of the mast (or wing tubes if mast has failed) and you should remain

in the boat at all times. If the boat must be abandoned when anchored, it is best left in the capsized position with the rig pointing downwind.

Mooring.

The RS 500 is not designed or equipped for mooring and this should not be attempted. You should remain in control of the boat at all times when afloat.

Trailing.

The RS 500 can be trailed behind the majority of cars. When trailing your RS 500 you should only use an approved trolley and road base. Tying down the boat to its trailer is important because too much or too little tension could result in damage. Follow the instructions below for safe trailing:

- Ensure the boat is located correctly on the trolley, with the gunwale supports up under the gunwales and the bow located in the bow snubber of the trolley.
- Ensure the trolley is properly located on the road base and the retaining pin is fitted.
- Tie the boat down to the trailer at the bow and across the middle. You only need to apply sufficient tension to hold the boat in contact with the trolley supports. Use padding material where any straps touch the deck.

HINT

It is always a good idea to tie the boat down when it is left in the dinghy compound to prevent any damage to you boat, or any other, in the event of strong winds.

4. COMMISSIONING

4.1 Preparation.

Your RS 500 comes complete with all the components necessary to take the boat sailing. In order to commission it, you will need the following tools:

- Pliers or a shackle key.
- Small, flat bladed screw driver.
- PVC (electricians) tape.

You may require other tools later, should you wish to make any settings or tuning adjustments to the boat and rig.

DO NOT use a knife or other sharp object to cut through packaging containing parts – you may damage the contents!

Whilst your RS 500 has been carefully prepared, it is important that new owners should check shackles and knots are tight. This is especially important when the boat is new, as travelling can loosen seemingly tight fittings and knots. It is also important to regularly check such items prior to sailing.

4.2 Unpacking.

Having unpacked your RS 500 you should check that you have all the items listed below and in picture 4.1 and picture 4.2 before throwing away any of the packing as there may be some small items still wrapped.

- 1 x RS 500 hull.
- 1 x mast.
- 1 x boom.
- 1 x gnav bar.
- 1 x rudder.
- 1 x rudder stock, with tiller extension.

- 1 x main sail.
- 1 x jib.
- 1 x spinnaker.
- 1 x rope pack – consisting of:
    - 1 x mainsheet.
    - 1 x jib sheet.
    - 1 x spinnaker sheet.
    - 1 x rudder downhaul and block.

Picture 4.1 – RS 500 equipment.

Picture 4.2 – RS 500 rope pack

4.3 Rigging the mast.

To complete this section you will require:

- The mast
- A flat bladed screw driver.

Fitting the spreaders.

It is worth taking time over this part to ensure it is correctly completed. Improperly fitted spreaders will result in strange sailing characteristics and may even result in failure of the mast.

1. Carefully unpack the spreaders from the top of the mast, being sure not to damage any of the securing split rings.
2. Unwind the shrouds and forestay from around the mast and unwrap from the packaging.
3. To fit the spreaders, refer to table 4.1 below and to the following page as to how to and where to fit the pins.
4. Finally, tape up all the securing pins and rings to prevent them from being damaged or damaging the spinnaker.
5. Hook the shroud t-terminal into the lower set of holes near the top of the mast.
6. Hook the trapeze line t-terminal into the upper set of holes near the top of the mast.

Class	Bracket Connection Pin		Outer End		
	Primary	Adjuster	End cap pos'n	Wire Dia.	Visible Holes
RS 500	Fwd	3B	Aft	3.0mm	0

Table 4.1 Spreader pin positions.

Now the mast is ready to be put up in the boat, or *stepped*.

REMEMBER

Check that both ends of the main halyard, jib halyard and spinnaker halyard are tied off at the bottom end of the mast so they are within easy reach when the mast is stepped.

Vernier Adjust Spreader Instructions

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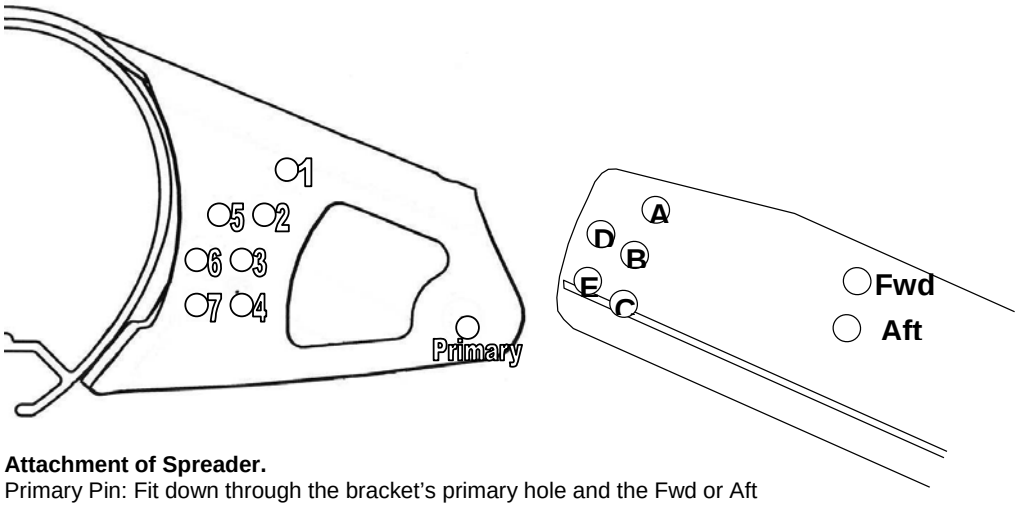
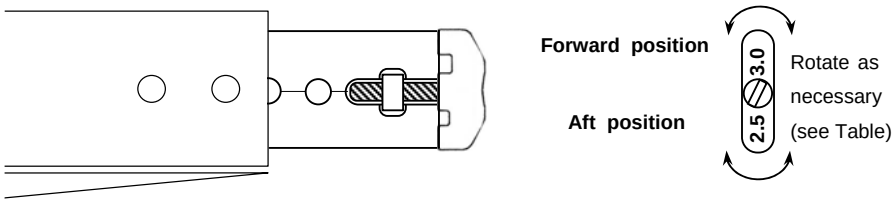


Attachment of Spreader.
Primary Pin: Fit down through the bracket's primary hole and the Fwd or Aft spreader hole as required.
Adjuster Pin: Fit down through a hole 1 to 4, and through A to C or through a hole 5 to 7, and through D to E.
Please see the table on the previous page for the specific positions.



Spreader Ends
Spreader End Cap:
The spreader end cap incorporates two shroud wire slots to give a tight grip on either 2.5 or 3mm wire. The sizes are identified on the front face of the end cap (See diagram above). To find which wire slot you require for your mast, please see the table below.
The end cap can also be rotated so that the shroud can be positioned at either the forward or aft position of the spreader end (see diagram above). To find out which position is required for your mast, please see the table below.
To attach the shroud, slacken the end screw, rotate the end clamp if necessary, then insert the shroud. Ensure that the shroud is tensioned between T-Terminal and spreader tip, then tighten the screw firmly. This method "locks in" the dihedral angle.

Length Adjustment:
The position is described by the number of adjustment holes visible (e.g. In the diagram above there are 1 ½ holes visible). **Please see the table below for your class specific positions.**

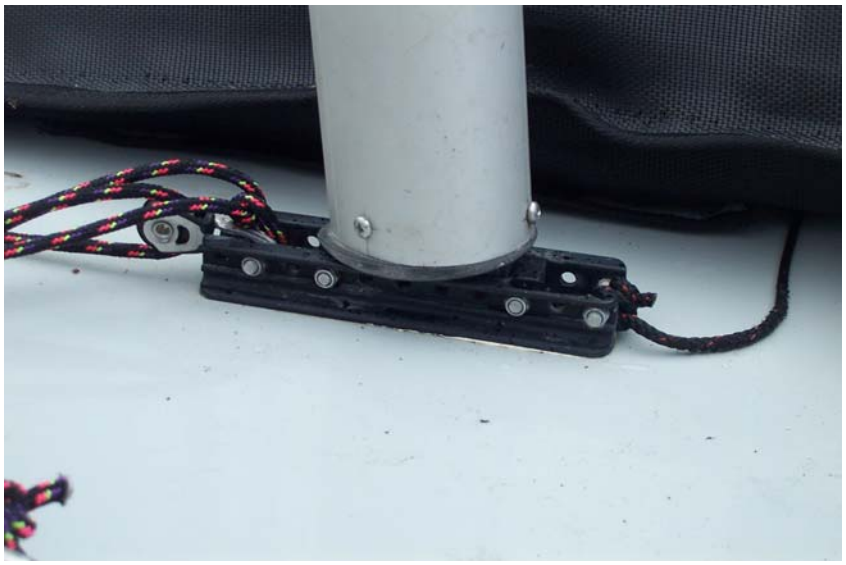
Security
All clevis pins must be fitted with the flat head on top, and locked with a split ring. Tape all split rings, pins and the outboard end of the spreader extrusion. This will reduce chafe on the mainsail and prevent flailing sails/halyards becoming damaged.
Self-amalgamating tape is best, but pvc electrical tape is an adequate alternative.

4.4 Stepping the mast.

Before stepping the mast, make yourself familiar with how the “foot” (bottom end) of the mast will fit into the “step” (fitted to the boat).

The mast foot has two rectangular blocks on the bottom, separated by a groove. Both these blocks will fit between the block at the front of the mast step and the bolt in the middle of the step (see picture 4.3 and 4.4).

Picture 4.3 The mast step and foot.



Picture 4.4 The mast foot correctly located.

It is easier to step the mast with two people, however it can be done single-handed. We will show you both methods.

Stepping the mast single-handed.

1. Ensure the mast step area is free from any blocks or rope.
2. Lay the mast along the boat with the foot near the bow.
3. Attach the shrouds to the shroud plates, using the upper most hole.
4. Lift the mast out of the boat and stand it up next to the boat.
5. Lift the mast (vertically) over the gunwale and into the boat, placing the foot into the step in the correct position.
6. Holding the mast upright, take the forestay in your spare hand and pull it forwards.
7. Keeping tension on the forestay, walk forwards to the bow and attach the forestay to the rig tension cascade.

Now the mast will stand up by itself.

REMEMBER

If the wind is blowing, there will be a lot of pressure on the top of the mast making it wave around. Consider finding somebody to help if you feel you will struggle!

Picture 4.5 Stepping the mast single-handed.

Picture 4.6 Fitting the forestay.

Stepping the mast with two.

This is a much easier way of stepping the mast, especially if it is windy at all.

1. Ensure the mast step area is free from any blocks or rope.
2. Lay the mast along the boat with the mast foot near the bow.
3. Attach the shrouds to the shroud points using the upper most holes.
8. Lift the mast out of the boat and stand it up next to the boat.
4. One person should climb into the boat and stand either side of the mast step, taking care not to stand behind the trolley wheels as the boat will tip up!
5. The first person should then pass the mast to the person stood in the boat.
6. The first person then guides the mast step into place
7. The first person then takes forestay and attaches the rig tension cascade.

Picture 4.7 Raising the mast.

Picture 4.8 Raising into place.

Now the final rig adjustments can be made.

1. Attach the lower shrouds to the mast.
2. Lower the main shrouds in the shroud adjusters to hole 4, this is a good starting point .
3. Attach the lower shrouds to the forward set of chain points so they are just slack.
4. Pull on the rig tension cascade firmly, enough so that the rigging is taught. This should make the lower shrouds go tight. If it does not then

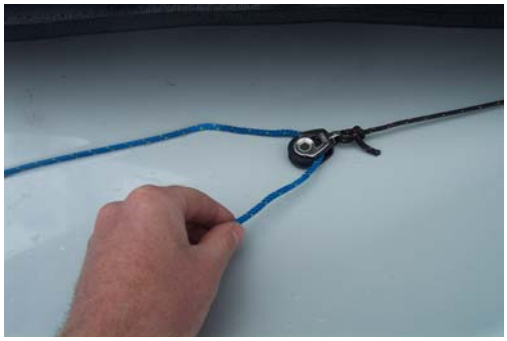
you will need to let the rig tension off, adjuster the lower shroud position and try again.

4.5 Rigging the spinnaker halyard.

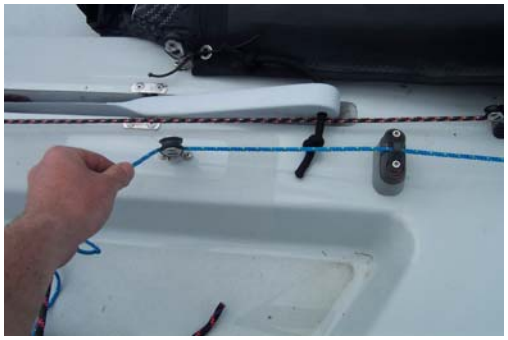
When the spinnaker halyard it is pulled it will hoist the spinnaker but also pull the bowsprit out too. This achieved by the spinnaker halyard running through a block tied to the bowsprit launch line.

1. Under the spinnaker sock at the bow you will find the bowsprit outhaul line and block (see picture 4.9). Pull on this block and you will see the bowsprit pull out to its sailing position.
2. Take the loose end of the spinnaker halyard, from the block at the base of the mast, forward through the bowsprit outhaul block and then back to the spinnaker halyard cleat (see picture 4.10).
3. Thread the end of the halyard through the cleat and through the hoist block (see picture 4.11).
4. The halyard then runs over the top of the centreboard and through the spinnaker drop block on the other side of the centreboard case. This time being thread through form back to front so the tail will then go up the spinnaker chute (see picture 4.12).

Picture 4.9 The bowsprit outhaul block.



Picture 4.10 Threading the spinnaker halyard.



Picture 4.11 The spinnaker halyard cleat.

Picture 4.12 The spinnaker downhaul block..

4.6 Rigging the boom.

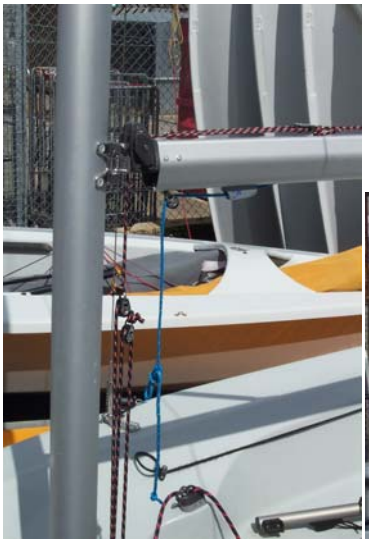
To complete this section, you will need:

- The boom.
- The Gnav (“vang” backwards, as it is working upside) bar.

1. Connect the gnav bar to the slider at the front end of the boom (see picture 4.13). Note: the slider fitted may look different to the picture but it still works in the same way.
2. Connect the front of the boom to the gooseneck on the mast (see picture 4.14).
3. Connect the upper end of the gnav bar to the bracket on the mast above the gooseneck (see picture 4.15 and diagram 4.1).
4. Tie the gnav line to the cascade in the boat (see picture 4.16).

Picture 4.13 Connecting the gnav to the boom.

Picture 4.14 Connecting the gnav to the mast



Picture 4.15 The gnav control line.

Picture 4.16 The gnav fully rigged.

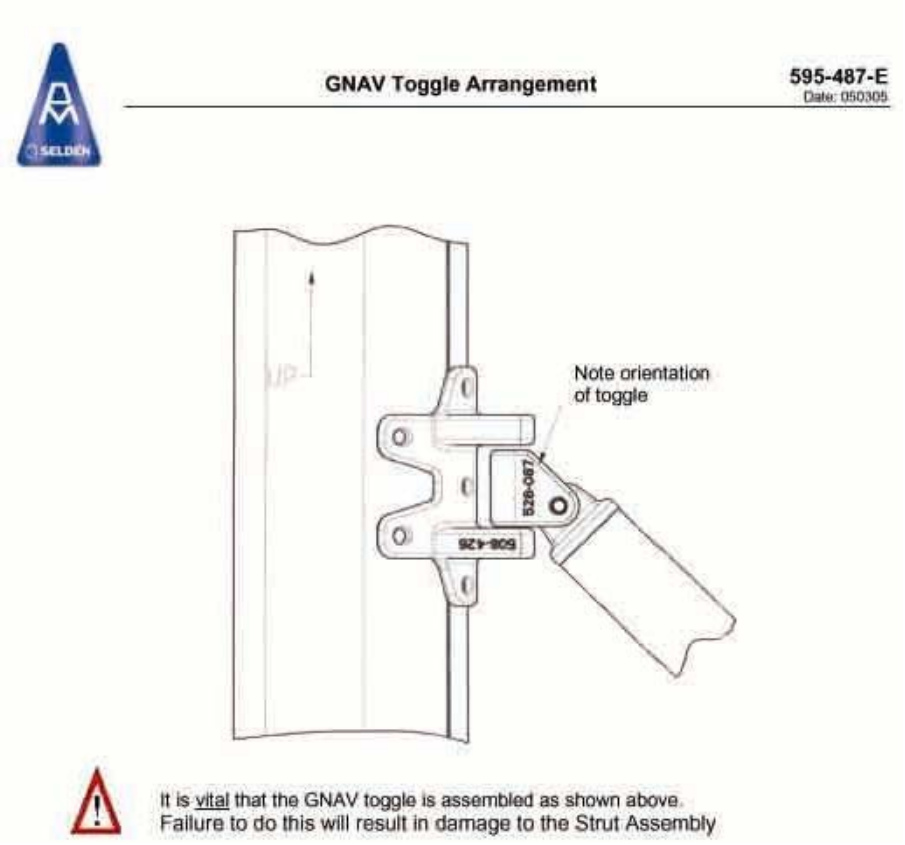


Diagram 4.1 Mast/gnav orientation.

4.7 Hoisting the jib.

To complete this section, you will require:

- The jib.
- The jib sheets.

1. Unroll the jib and connect the tack (lower forward corner) to the bow fitting using the tack tie provided (see picture 4.17). The height of the jib away from the bow is a tuning item and is covered more in section 5 ‘sailing hints’.
2. Attach the head of the jib to the jib halyard (see picture 4.18).
3. At the base of the mast, pull the jib up using the halyard. When the halyard is pulled all the way up, cleat it in the cleat just above the mast foot.

Picture 4.17 The tack of the jib

Picture 4.18 Connecting the rig tension.

1. Tie one end of the jib sheet to the p-clip located between the jib fairlead and jib cleat.
2. Pass the other end through the clew of the jib and back through the fairlead and jib cleat.
3. Pass the jib sheet across the boat.
4. Repeat step 1 but in reverse this time, so going through the jib cleat first.

Picture 4.21 Jib sheets.

4.8 The rudder.

To complete this section, you will require:

- The rudder.
- The rudder stock.
- The rudder downhaul and block.

1) Undo the plastic wing nut on the rudder stock and remove the bolt.
2) Slide the rudder into the stock making sure to feed the rope over the small roller fitted in the stock, and out under the tiller.
3) Line up the hole in the rudder with the hole in the rudder stock.
4) Push the bolt through the stock and rudder, making sure to line up the head of the bolt with the recess in the plastic washer. Also that the little lugs on the plastic washer line up with the holes in the stock. *It may need a little tap to get it through!*

5) Refit the plastic wing nut and tighten. The nut should be tight enough to stop the rudder slopping about in the stock, but not tight enough as to make it hard to rotate the rudder.
6) Tie the rudder downhaul block onto the rope that you threaded into the stock (see picture 4.22).
7) Take the rudder downhaul rope and tie one end to the cleat at the front end of the tiller.
8) Thread the other end through the rudder downhaul block and then back through the cleat (see picture 4.23).
9) Tie a nice stopper knot in the end.

Picture 4.22 The rudder fitted in the stock.

Picture 4.23 The rudder downhaul fitted.

4.9 Hoisting the mainsail.

To complete this section, you will need:

- The mainsail (either *S* or *XL*).
- The mainsheet.

1. Tie one end of the mainsheet through the middle of the block at the end of the boom using a stopper knot (see picture 4.24).
2. Then take the other end through the block on the strops on the back of the boat, passing from front to back.
3. Run the mainsheet back up through the block at the end of the boom, passing from back to front.
4. Run the mainsheet along the under side of the boom, ensuring it is passed through the webbing loops (these stop the mainsheet hanging down when it is slack).
5. Pass the mainsheet through the block in the middle of the boom, passing from back to front.
6. Finally, thread the mainsheet through the centre ratchet block (the block is an automatic ratchet block so pull on both ends of the rope to engage it and check you have threaded it the correct way, using the arrow for guidance) and then through the mainsheet cleat. Tying a stopper knot in the end.

Picture 4.24

Picture 4.25

Picture 4.26

1. Unroll the mainsail.
2. Tie the end of the main halyard that comes down the mast to the top of the mainsail (see picture 4.27).

Picture 4.27 Tying the main halyard.

3. Put the top of the sail into the opening in the mast track, just above the gooseneck.
4. Holding the sail in line with the mast, pull on the other end of the main halyard.
5. Pull the sail up to the top of the mast. You will need to keep the sail in line with the mast to make pulling it up easier, especially where the batten pockets are.

6. With the sail almost to the top, slide the mainsail clew slug into the track on the top of the boom (see picture 4.28).
7. Pass the end of the outhaul rope through the corner of the sail and clip it on the end of the boom (see picture 4.29)
8. Ensure that the main halyard rope is in the cleat and pull the sail to the top. Pull on the bottom corner of the sail to check it is properly cleated.
9. Tidy the main halyard and stow it in the bag under the spinnaker sock.
10. Fit the tack strap around the mast.

Picture 4.28 Mainsail slug.

Picture 4.29 Outhaul.

The downhaul is already tied to the mast, so all you need to do is pass the end of the rope through the bottom eyelet in the mainsail and then down through the cleat on the back of the mast (see picture 4.30).

Picture 4.30 The downhaul.

4.10 Rigging the spinnaker.

To complete this section, you will need:

- 1 x RS 500 spinnaker.
- 1 x spinnaker sheet.

1. Unpack the spinnaker.
2. Tie the tack of the spinnaker to the 'tack line' that emerges from the end of the bowsprit (see picture 4.31). The knot that is already in the tack line needs to be left in place as it determines how far the bowsprit comes out.

3. Tie the end of the halyard to the head of the sail (see picture 4.32).
4. Take the spinnaker downhaul line (the other end of the halyard), which is rigged up the chute and with the spinnaker on the starboard (right) side of the boat pass the end through the ring on the sail from bottom of sail to top of sail direction (see picture 4.33).
5. Run the downhaul up the sail and pass the end through the ring in middle of the sail from bottom of sail to top of sail direction.
6. Run the downhaul line up the sail and tie it off on the upper patch (onto the cross of webbing) (see picture 4.34).

Picture 4.31 The tack of the spinnaker.

Picture 4.32 The head of the spinnaker.

Picture 4.33 Lower downhaul patch.

Picture 4.34 Upper downhaul patch.

- Find the middle of the spinnaker sheet and double it over to form a loop.
- Pass this loop through the eyelet at the clew of the sail.
- Pass the rest of the sheet through the loop and pull it tight (see picture 4.35).
- Still with the spinnaker on the starboard side, thread one end of the spinnaker sheet through the block by the shroud point on the starboard side, in the direction of the arrow (see picture 4.36).

- Take the other end of the spinnaker sheet and pass it around the forestay and into the block on the other side. Tie the two ends together.

Picture 4.35 Tying the spinnaker sheets.

Picture 4.36 The spinnaker sheet block

- Pull the spinnaker from one side to the other, as if you were gybing, to see if anything is twisted.
- Finally, pull the spinnaker down into the chute.

4.11 Completion.

Now you are almost ready to go 500 sailing. All that is left to do is:

- Fit the rudder to the back of the boat.
- Tidy the halyards away.

1) To fit the rudder, simply line up the pins with the fitting on the back of the boat and push down until the retaining clip ‘clicks’ into place. The rudder may be difficult to get on at first but all it will need is a simple waggle from side to side whilst pushing down.
2) To remove the rudder, simply push the retaining clip in and pull up on the stock.

3) Coil the main and jib halyards neatly and stow them in the Velcro pocket fitted on the underside of the spinnaker sock.

Now you are ready to go sailing in your RS 500!

5. SAILING HINTS

5.1 Introduction.

The RS 500 is a very rewarding boat to sail, and to fully appreciate its handling you should be comfortable with the basic techniques of sailing small boats. If you lack confidence or feel a refresher is in order, then there are many fully recognised sailing schools which can offer refresher courses in trapeze and asymmetric technique.

The following are simply hints to aid your enjoyment of your new boat and should in no way be considered a replacement for a recognised course in dinghy sailing. Choose a fairly quiet day with a steady wind for your first outing to build your confidence and familiarise yourself with your new boat.

5.2 Launching.

With the sails fully hoisted and the rudder attached to the transom, the boat should be wheeled into the water, keeping it head to wind as far as possible. If you have a crew, he or she can hold the boat head to wind whilst the trolley is stowed ashore. If it is gusty it may help for the crew to hold the boat at the shroud to help keep it upright.

5.3 Leaving the beach.

The easiest way to get going is for the helm to hop aboard while the crew holds the boat. The helm should put a little centreboard down, and move back to his normal position and pull gently on the rudder downhaul to lower some rudder blade. He then may instruct the crew to push the bow off the wind and climb in. The crew will then lower the centreboard as depth allows.

As soon as you are deep enough, make sure you lower the rudder blade fully by pulling the downhaul hard. You know it is fully down if you feel a gentle ”thud” as the front face of the blade hits the front face of the stock. Cleat the downhaul and tidy it by winding it around the tiller, pull the sails in and you are away!

HINT

If you are using the jib, then pulling this sail in first will ensure the bow continues to swing away from the wind.

For best affect you should ensure that you and your crew position yourselves to effect the best trim (fore and aft), and heel (sideways). In general the crew should always be on or in front of the mainsheet swivel jammer, and the helm aft but up close to it. When planing, the helm and crew should move further aft The boat should always be sailed as upright as possible.

HINT

As a general rule sit further forward in lighter winds and further aft in stronger breezes.

5.4 Sailing close-hauled and tacking.

When sailing as close as possible to the wind, it is important to get the boom close to the centreline. The gnav (strut kicker) should also be firmly tensioned for upwind work. Either do this before leaving the shore or by quickly luffing head to wind.

The jib should be sheeted fairly firmly upwind – pull it in bar tight and then ease 2 ins of sheet – that is as tight as it ever gets and is right for the moderate winds, but will need easing a bit more for the lighter winds or when it is breezy. Sail to the jib tell-tails, keeping the leeward one streaming and the windward (nearest) one either streaming or lifting upwards.

You should hold the tiller extension across your body – with a knuckle upwards grip, and you can then use one or two fingers as a temporary cleat when adjusting the mainsheet.

As you tack, let the boat start to roll towards you before you cross the boat, and push the extension across in front of you, turning round forwards, and sitting down again with the extension round behind your back. Swap hands when you are settled, making use of the mainsheet cleat.

If the boat slows right down and feels lifeless when close-hauled, as a general rule it pays to ease both sheets and bear off away from the wind for a while to get the boat going again.

5.5 Downwind and gybing.

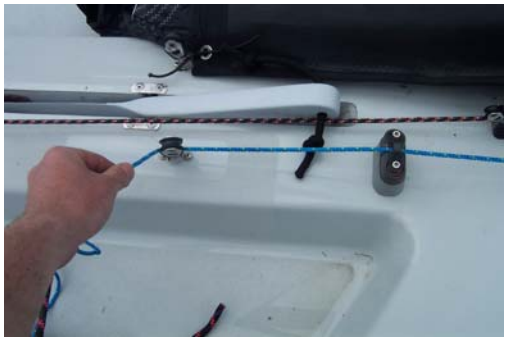
When sailing offwind both sails should be eased as far as possible, with the same rules applying to the tell-tails, unless the wind is aft of the beam, when you should ease all the way unless either sail lifts near the luff.

When gybing you pull the tiller towards you, and again as you cross the boat you push the extension across in front of you. The boom will often not want to come across until you are well through the gybe so it often pays to give the mainsheet a tweak to initiate the gybe, or the crew can “encourage” the boom over! Swap hands after you are settled on the new gybe. The crew should always concentrate on moving smartly to keep the boat as upright as possible.

5.6 Using the spinnaker.

If you are inexperienced in using spinnaker then chose a fairly quiet day for you first excursion with it. It will more than double your sail area, and should be treated with a healthy degree of respect!

For your first hoist you should be sailing downwind on a broad reach, with the wind on your quarter. Your crew should stand astride the centre capping, and hoist the spinnaker from the right hand halyard block (see picture 5.1).



Picture 5.1 Hoisting the spinnaker.

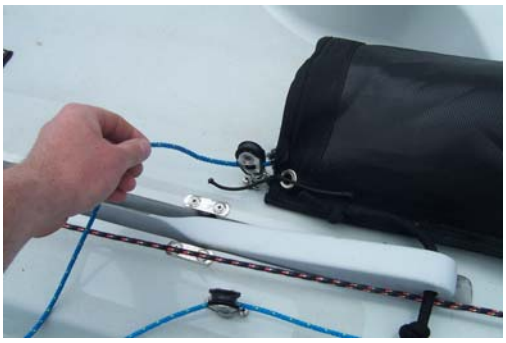
The halyard pulls the pole out at the same time, and so as the halyard comes to a stop when hoisted all is ready to go. The crew should now pull gently on the sheet, whilst the boat is luffed up gently and the spinnaker will soon fill.

Spinnakers may be effectively used from a close reach to a broad reach, and thus to get downwind one should become adept at gybing. Tacking is not possible with the kite set. For best affect the sheet should always be eased as far as possible, so that the luff is just on the point of curling.

Gybing with the spinnaker is fairly straightforward: Think of it exactly as a big jib, and it should be pulled across as the main comes across. Pull across as soon as possible as delay or allowing the kite to flog may result in an “hourglass” effect. As soon as it has been pulled in and filled with wind it should again be immediately eased for maximum efficiency and speed.

Dropping the spinnaker is the reverse of the hoist: The boat should be borne off to a broad reach, and the slack in the downhaul, pulled in from the left hand halyard block, taken up (see picture 5.2). As it goes tight the halyard should be popped out of the cleat and the spinnaker then pulled sharply into

the chute. Dropping the spinnaker on tighter reaches is harder, requiring more effort on the downhaul (the end of the halyard that pulls the spinnaker down).



Picture 5.2 Dropping the spinnaker.

HINT

The spinnaker can "bunch up" when entering the chute, and this can be minimised by keeping some restriction on the sheet and thus stopping the clew getting sucked in with the main body of the spinnaker.

When the spinnaker is fully lowered it is always worth tidying the sheets and halyard to keep the cockpit area sorted.

6. MAINTENANCE

6.1 Boat Care.

The RS 500 is made of FRP (fibre reinforced plastic), a fibre glass cloth and polyester resin. This is stiff and light, but will dent if subjected to point loading. The boat should be supported ashore on a recognised RS trolley, as the hull may distort if not supported properly.

Obviously in dealing with a marine environment, equipment gets wet, which in itself is not a problem. The problem starts when moisture is trapped for any length of time. The key, therefore, is to store the boat properly ashore.

Keep your dinghy drained and well ventilated.

All composite structures, no matter what they are made from absorb moisture which increases weight and under additional circumstances causes cosmetic blistering and raised fibre pattern. Obviously in dealing with a marine environment, equipment gets wet which in itself is not a problem. The problem starts when moisture is trapped for any length of time - e.g. a dinghy is left with a PVC cover on for several weeks, the cover fills with water and pulls the cover tight over the foredeck and sidedecks, the moisture trapped between the cover and the deck alters in salinity and creates the start of an osmotic cell.

To help avoid this situation

a) Ensure the boat is kept at an angle that allows water to run off the cover and internal water to drain out of tanks.
b) If using a PVC cover, make sure it is removed and the boat well ventilated at least once a week. Better still, get a breathable cover - polycotton, acrylic or cotton duck.

c) When using an undercover, make sure the cover has an opening in the bottom to prevent water draining from the cockpit and filling the undercover. Do not leave the undercover on for long periods.

Wash with fresh water.

Fresh water evaporates far quicker than salt water, so if your dinghy has been sailed in salt water, don't stop at the sails, fittings and external surfaces, wash the tanks out as well. This is not as daft as it sounds - all RS tanks are vented and sooner or later water will enter, particularly after prolonged capsizes. When this happens, drain the tanks and lightly spray a fresh water hose pipe into the tank to lift off the salt water and then the tank will have a much better chance of drying out.

Hull damage falls into three categories:

- **SERIOUS –** large hole, split, crack or worse. Don't be too distressed! Get the remnants back to RS Racing – most problems can be repaired.
- **MEDIUM –** small hole or split. If this occurs during an event, sailing can often be continued as long as leaking can be prevented by drying the area and applying strong adhesive tape. CAUTION – if the damage is close to a heavily loaded point then a close examination should be made to ensure the surrounding area will accept the loads. Get the damage professionally repaired as soon as possible.
- **SMALL –** chip, scratching. This type of damage is obviously not life threatening but needs to be attended to, firstly to keep the boat looking good and secondly to prevent water ingress into the laminate. This type of damage can be rectified by you the owner, if you wish. Buy the correct colour gel coat repair kit from your RS dealer and either wait for a dry warm day outside or preferably put your boat in a dry warm place under cover.

6.2 Foil Care.

The foils are FRP with a foam core. Look after them as you do the hull. Wash with fresh water regularly. Repair any chips as soon as possible.

If you intend to travel a lot with the boat, then an RS padded rudder bag would be a worthwhile investment.

6.3 Spar Care.

The mast, boom and bowsprit are aluminium. Wash with fresh water as often as possible, both inside and out. Check all the riveted fittings on a regular basis for any signs of corrosion or wear.

6.4 Sail Care.

Good racing sails today are expensive items, yet it is surprising how many people are prepared to neglect or mistreat them. The rules for correct sail care are easy and simple to implement.

1. The jib and mainsail should be stored dry, out of direct sunlight when not in use (Ultra-Violet light damages sailcloth), and rolled:
    a. Ensure there are no folds in the cloth as you roll the sail.
    b. If you do have a fold or crease, unroll the sail and let the crease drop out. DO NOT PULL IT OUT!! This action can tear sailcloth.
2. Asymmetric spinnakers should be stored dry and loose if possible, do not leave them in the chute with the corners hanging out! Do not dry spinnakers by allowing them to flap in the wind.
3. When using brand new sails for the first time, try to ensure that the conditions are not too extreme because the high loads on new sailcloth can diminish the racing life of the sail. This particularly applies to the Hard Dacron jib, which may get a lot of those 'Little white score marks'. Do not allow sails to flap unnecessarily. Where possible, take sails down between races and as soon as possible after sailing.

4. If your sail is stained in any way, try to remove it using normal detergent and warm water. Do not attempt to launder the sail yourself.
5. Repairs should be temporarily fixed using sticky number cloth or sail repair tape and then returned to a sail maker for a professional repair.
6. Check the batten tension regularly, slack battens can work their way out of the luff retaining caps and damage the sailcloth. The battens should be tensioned enough in the pockets so that when the boat is sailing there are no wrinkles in the batten pockets. Watch out for wear and tear, especially around the batten pockets and bolt rope.
7. Make sure that all shackles, pins and sharp objects that the spinnaker might travel over are well taped (preferably using PVC tape). Un-taped shackles or frayed wires are the most common cause of major tears in spinnakers.

7. WARRANTY

1. This warranty is given in addition to all rights given by statute or otherwise.
2. LDC Racing Sailboats warrants all boats and component parts manufactured by it to be free from defects in materials and workmanship under normal use and circumstances, and the exercise of prudent seamanship, for a period of twelve (12) months from the date of commissioning by the original owner. The owner must exercise routine maintenance and care.
3. This warranty does not apply to defects in surface coatings caused by weathering or normal use and wear.
4. This warranty does not apply if the boat has been altered, modified, or repaired without prior written approval of LDC Racing Sailboats. Any changes to the hull structure, deck structure, rig or foils without the written approval of LDC Racing Sailboats will void this warranty.
5. The use of the boat for commercial purposes shall void this warranty.
6. Warranty claims for materials or equipment not manufactured by LDC Racing Sailboats can be made directly to the relevant manufacturer. LDC Racing Sailboats warrants that these parts were installed correctly and according to the instructions provided by the manufacturer.
7. Warranty claims shall be made to LDC Racing Sailboats as soon as practicable and, in any event, within 28 days upon discovery of a defect. No repairs under warranty are to be undertaken without written approval of LDC Racing Sailboats.
8. Upon approval of a warranty claim, LDC Racing Sailboats may, at its expense, repair or replace the component. In all cases, the replacement will be equal in value to the original component.
9. Due to the continuing evolution of the marine market, LDC Racing Sailboats reserves the right to change the design, material, or construction of its products without incurring any obligation to incorporate such changes in products already built or in use.