

RS300

OWNER'S MANUAL

INTRODUCTION

Congratulations on the purchase of your new RS300. The RS300 was designed by Clive Everest and RS Racing and launched in January 1998.

Important Note

The RS300 is an exciting boat to sail and offers fantastic performance. It is a light weight racing dinghy and should be treated with care. **In order to get the most enjoyment from your boat and maintain it in top condition, please read this manual carefully.**

Whilst your RS boat has been carefully prepared, it is important that new owners should check that shackles, knots, mast step bolts etc. 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. Make sure that you have a basic tool kit with you the first time you rig the boat in case there are tuning / settings changes that you wish to make.

Thank you for choosing an RS. We are confident that you will be delighted with your boat and we look forward to meeting you "on the water".

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For further information, spares and accessories, please contact:

LDC Racing Sailboats
Trafalgar Close
Chandlers Ford
Eastleigh
Hants SO53 4BW

Tel. 023 8027 4500
Fax. 023 8027 4800
Email. Rs@ldcracingsailboats.co.uk

RIGGING INSTRUCTIONS

The RS300 is a very simple boat to rig. It will have been prepared prior to delivery with most of the controls rigged as far as possible. The following guide is a step by step process to rig the boat ready for sailing.

- 1).** Before rigging the boat, you should adjust the toe straps to suit your leg length and preferred hiking position. The forward and middle toe strap plates allow for both height and reach adjustment. There is a choice of two loops for the aft attachment point. Shorter sailors will need the straps fitted further outboard and tied down more loosely than tall sailors. Try different settings once you have sailed the boat because correct adjustment will make a big difference to your comfort and the strain on your legs!
- 2).** Join the two sections of the mast together. Thread the main halyard through the top sheave and lead both ends down to the bottom so that you can reach it when the mast has been raised. Lift the mast into the boat, inserting it carefully into the mast pot.
- 3).** Attach the boom to the mast by inserting the gooseneck bolt through the partners at the forward end of the boom and the hole in the mast. Finger tighten only.
- 4).** Position the vang (kicker) struts so that the black roller is located against the aft face of the mast. Ensure that the control lines are seated in the grooves around the outer ends of the roller.
- 5).** Slide the mainsail clew strap over the end of the boom, pass the outhaul through the clew cringle and hook the knot into the moulded notch on the aft end of the boom. Shackle the tack of the sail on to the lacing eye on the top of the boom at the forward end.
- 6).** Position the boat so that it is head to wind. Ensure the mainsheet and other control lines are loosened off. Tie the main halyard to the head of the sail. Feed the bolt rope on the sail into the track on the mast and hoist the sail. Care should be taken on hoisting to ensure that the sail feeds neatly into the track. Pull the rucks out of the bolt rope as you hoist. This will avoid any unnecessary damage to the sail. Ensure that the sail is pulled right to the top of the mast and jamb the halyard in the cleat on the front of the mast near the top. Clip the halyard tail to the elastic near the base of the mast, using theinglefield clips fitted. Coil up the loose halyard and tuck this inside the boom at the inboard end.
- 7).** Thread the cunningham control line around the outside of the boom, through the cringle just above the tack (middle cringle), through the double block on the top of the boom, back through the cringle, down outside the boom and tie on to the block on the control line already fitted in the boat.

- 8). Fit the rudder on to the transom. Ensure that the holding clip has grasped the rudder fitting. Check the bung is screwed in tight while you are there!
- 9). Tie a knot in the mainsheet so that it prevents the boom going out beyond 90 degrees to the centreline. You may wish to alter this later as you become more experienced in the boat – see ‘Sailing Tips’ in this manual.
- 10). When sailing, the daggerboard is held in position in the slot by shock cord. In order to insert the daggerboard correctly into the slot, it is possible to “open” the shock cord loop by pulling it forward and cleating it using the rope and cleat fitted on the deck in front of the slot. The daggerboard is then inserted so that the shock cord wraps around the front of the board. The rope holding the shock cord open should then be released so that the daggerboard is held in position.

Familiarise yourself with the system whilst the boat is ashore, but do not actually put the daggerboard in place until the boat is afloat. It is a good idea to open the shock cord loop using the rope and cleat prior to launching, so that it is ready to take the daggerboard. The daggerboard is inserted at an angle so that the top of the board is forwards.

The boat is now ready to launch.

Warning – The RS300 is an exceptionally light boat. Once the sail is hoisted it is important that the bow be tied to the trolley to prevent it blowing off. In stronger breeze we also recommend anchoring the boat and trolley to a fixed point if you intend to leave it unattended.

RS300 Control Line Rigging

It is important that the three control lines are rigged correctly to ensure that the outhaul, vang and cunningham systems function correctly, and there is not any unnecessary damage to the hardware.

The top cleat with a fairlead is for the kicker line (supplied PINK). The line runs through the block mounted on the vertical surface and through the block attached to the kicker bobbin lines. The line then runs through the double block on the boom, using the side closest to the gooseneck. Run the line back to the opposite bobbin block, and trace the same route over the other side of the boat.

The middle cleat is for the cunningham (supplied PURPLE). The line runs through the outer pair of floor mounted blocks, through the upper sail cringle (not the reefing point cringle unless reefing the sail), down to the unused side of the double block on the boom, and back up through the sail cringle. The line then exits in reverse of the above.

The bottom cleat is for the outhaul (supplied YELLOW). Use the remaining floor mounted blocks, up to the block on the exposed line from the boom, and back down to the floor block.

The control lines tie off on the lacing eye inboard from the gunwale, back from the cleats.

TUNNING AND SAILING TIPS

The RS300 has a uniquely adjustable rig. It is possible to change the sail shape from full and powerful to board flat in the top half, with all stages in between. We have spent many hours perfecting the control in the RS300's mast and sail combination. It is well worth spending some time ashore and afloat to experiment with the rig and discover how to use the control available. Remember, with a boat like the RS300, control of the rig is fundamentally important not only to boat speed, but also ease of handling.

Once you have rigged the boat and hoisted the sail, assuming the wind is not too strong, tie the boat securely to the trolley and turn the bow slightly away from the wind. You can now sheet the sail in and look at the effect tension on the vang and cunningham make to the sail shape.

The vang is the all-important control on this boat. In all conditions the vang provides the majority of the leech tension. You need never attempt to sheet the boom in to the centreline – in most wind strengths it will be best sheeted so that the aft end is over the leeward corner of the transom.

Sheet the boom to this point and then try pulling on the vang progressively harder. You will see the mast bend, the vertical crease in the sail just behind the mast disappears and then the sail gets flatter until it is almost completely flat in the top section. Now try pulling on the cunningham control. This will remove the horizontal creases behind the mast. Whereas with many modern fully battened rigs, the cunningham is largely used to bend the mast and depower the rig, on the RS300 it is the vang which performs most of this task.

Even in light winds you should use enough vang tension to pre-bend the mast and take out the sail's fullness near the luff. In strong winds, not only does the vang bend the mast and depower the rig, but it also stops the rig bending forward at the top, causing boat handling problems when sailing off-wind. If in doubt – crank it on!

Having experimented with the rig on shore, you are now ready to launch the boat. Pick a day when the wind is not too strong because an unfamiliar boat is always more demanding than your previous dinghy! It is a lot more fun to go out and learn on your first sail, rather than go out to survive.

Launching

Wheel the boat into the water and float it off the trolley.

Turn the boat slightly away from head to wind. Stand in the water, on the windward side of the boat, near the front of the wing. Hold the gunwale with your aft hand and insert the daggerboard into the slot with the other hand. Ensure that it is correctly positioned through the shock cord retainer in the slot. Release the rope which holds the shock cord open. Push the daggerboard half way down.

It is easiest to climb over the stern when setting off. Ensure that the mainsheet is freed right off and turn the boat away from the wind until you can climb in over the stern. Push the rudder down half way as you climb aboard.

As soon as the boat is in deep water, luff the boat until the sail is flapping and pull the rudder right down using the downhaul line under the tiller. Jamb it off in the cleat. If possible, reach over the stern and tighten the wing nut on the rudder stock. Next, push the daggerboard all the way down.

You are now ready to sail the RS300 and no matter what the wind strength, you will be impressed by the boat's acceleration and lively feel.

Upwind Technique

The boat is designed to be sailed with about 100mm of stem (bow) in the water. You will need to sit well forward, near to the front of the wing. In light winds it is fast to sit even further forward and immerse the stem even more.

Do not be tempted to over-sheet the mainsail. With the boom over the leeward corner of the transom, the boat will still point very high.

As described earlier, progressively increase the vang tension as the wind increases and you need to depower. Do not tension the cunningham in light winds, but steadily increase the tension as you use more vang.

Sail the boat upright. You will find that the rig works extremely well as gusts hit, allowing the head of the sail to flick open and depower. If you need to spill more power it is best to point up, rather than ease the sheet. In bigger gusts, it may be necessary to do both in order to keep the boat travelling fast.

Tacking

There is nothing unusual in the technique for tacking an RS300. Steer positively into the tack. Ease the mainsheet as you cross the boat so that you can come out of the tack sailing reasonably free (this is especially important in stronger winds). Pass the tiller extension around the back of the boat. Step smartly across the boat placing your new forward foot on the kick block as far forward as possible. Cleat the mainsheet when you are on the new tack and swap your tiller and mainsheet hands. Sheet the mainsheet back in as the boat speed increases.

Try to stay well forward in the boat (especially in light winds) as you go through the tack.

Bearing away

Bearing away in light winds requires no special technique, but in stronger breezes preparation is the key.

Ease the vang a little, but keep enough tension on so that the rig stays flat and in control. If in doubt, leave the vang on – the end of the boom is very high so there is no danger of catching it in the water.

Bear away a little to increase speed and slide back down the side deck. In strong winds, get right to the back corner of the deck with your feet under the aft toe straps.

Keep the boat upright, free away the mainsheet and steer downwind.

Running Technique – Light Wind

Free the mainsheet until the boom is at 90 degrees to the centreline. Move well forward in the cockpit. A comfortable position is to kneel on one knee in front of the mainsheet jammer facing forward, with the tiller extension held in your windward hand. In this way you are ready to move if required as the boat heels either way.

Steer to keep the boat under the rig! If the boat heels to windward – head up. If it heels to leeward – bear away.

Ease the cunningham right off and ease the vang until a vertical crease in the sail just begins to appear behind the mast and then pull a bit back on.

Leave the daggerboard down.

Advanced Technique

Move the knot in the mainsheet so that the boom can go out beyond 90 degrees. Sail the boat by the lee. The air flow will be reversed across the sail, flowing from leech to luff. This technique allows the boat to be sailed very low downwind, maximising the VMG to the leeward mark.

The boat will feel very unstable when sailing as above. It has a tendency to roll to windward and if the flow keeps changing direction across the sail it will be difficult to stay in control. Get used to sailing the boat conventionally and only experiment with running by the lee and reversing the flow when you are fully confident!

Running Technique – Strong Wind

Sit right aft.

Keep on plenty of vang tension, so that the top of the rig is more supported.

Run reasonably square downwind, but keep the main sheeted in a little.

Steer positively to keep the boat flat and under the rig. This is most important.

If the bow is driven down in gusty conditions, head up to increase lift and, if possible, also pull in the mainsheet a little. In waves, steer carefully to avoid driving straight into the wave in front. Head up to hit the wave at an angle whenever possible.

Gybing – Light Wind

Bear away into the gybe and roll the boat to windward as you do so. Grasp the falls of the mainsheet and pull the boom over.

Step across the boat and roll it back upright tweaking the mainsheet as you do so. This will power the boat out of the gybe very effectively due to the very low drag hull shape.

Gybing – Strong Wind

Always gybe at full speed as this gives the boat more dynamic stability and reduces the apparent wind in the sail.

Sheet the sail so that the boom is at approximately 70 degrees to the centreline. Ensure the boat is upright and steer positively into the gybe. Grasp all the falls of the mainsheet and pull the boom over as the boat turns through the gybe.

Run across the boat on your feet and aim to come out of the gybe on a broad reach rather than a square run so that there is no tendency for the boat to roll to windward. Swap tiller hands, pick up the sheet and sail away on the new gybe.

Returning to the Shore

Raise the daggerboard half way. Uncleat the rudder downhaul and loosen the wing nut on the pivot bolt. Lift the rudder blade half way with your arm over the stern if possible.

If you are landing back on a lee shore, it is advisable to lower the mainsail and blow ashore under a bare mast.

To lower the sail, ease the mainsheet, cunningham and vang. Position the boat on a beam reach. Release the halyard from the shock cord and pull it outwards and downwards to release it from the cleat. Move back in the boat for greater stability and luff to help gather the sail in the boat as it comes down.

Righting the Boat from a Capsize

The RS300 has a sealed mast which is buoyant and makes the boat unlikely to turn turtle during a capsize. This makes the boat very easy to right.

If you are able to climb over the side onto the daggerboard as the boat goes over, then simply ensure that the mainsheet is uncleated, right the boat and climb back into the cockpit in front of the wing as it comes up.

If you fall into the water, do not swim around the boat to the daggerboard. The buoyant mast means that you can climb onto the mast and over the top onto the daggerboard. This saves time and energy and means that you will always be able to right the boat from stood on the daggerboard rather than having to drag yourself onto the board from in the water.

Reefing the Mainsail

The RS300 mainsail is fitted with a reefing point to ensure that your enjoyment of the boat continues as the wind increases. Reefing the mainsail reduces very little of the actual sail area, but instead moves the head of the sail approximately 300mm down from the top of the mast. The mast is very flexible in the top section, and in strong conditions, forward bend of the mast can promote pitching of the bow and make sailing downwind very difficult. By moving the head of the sail down from the top of the mast, forward bend is reduced.

Shackle the tack of the sail to the boom using the middle cringle (normally Cunningham point). Using a small length of rope, tie the clew of the mainsail to the aft end of the boom using the middle cringle. Tie as tight and as close as possible. Reeve the outhaul line through this cringle as well. Hoist the sail as normal, and pull the halyard tight. You will have to move the ingfield clip on the halyard to hook it into the boat. Connect the Cunningham in the standard manner but use the top cringle. You will need to use lots of Cunningham to pull the creases out of the sail, but in reef-worthy conditions this is not problematic!

Use lots of vang to control and depower the sail as necessary.

In extreme conditions, the higher clew cringle can be used to raise the height of the boom to assist tacking and further reduce power.

Getting It Right !

The RS300 is like no other boat on the market, and its performance and responses are way ahead of anything that you are likely to have experienced in the past.

The key is perseverance. Even elite sailors take some time to get to grips with the RS300s power delivery and characteristics. This is perfectly normal, and indeed the mastering the boat is as much fun as sailing it. Do not be disappointed if your first few outings are particularly challenging, this is what makes the RS300 so special.

For training and coaching schedules in your area, contact the RS Class Association (see page 12)

Best of Luck!

CARE AND MAINTENANCE

Hull

Keep your dinghy drained and well ventilated

The RS300 is made using epoxy resin, so is less prone to water absorption than a polyester hull. Nevertheless, it is advisable to take care because the gel coat is polyester and water absorption could cause blistering and a 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. The key, therefore, is to store the boat properly ashore.

- a) Ensure the boat is kept at an angle to allow water to drain away.
- b) Use a breathable polycotton, acrylic or cotton duck cover.
- c) If leaving an under cover on the boat, ensure that the transom is open for drainage and that there is a hole below the daggerboard slot to allow water to drain.

Wash with fresh water

Fresh water evaporates far more quickly than salt water, so if your dinghy has been sailed in salt water wash it off thoroughly. The fittings will also work better if regularly washed.

Damage

Hull damage falls into three categories:

- a) **SERIOUS** e.g. Large hole, split, crack or worse. Don't be too distressed! Get the remnants back to RS Racing – most problems can be repaired by an RS expert.
- b) **MEDIUM** e.g. Small hole or split, gel crazing. If this occurs during an event, sailing can often be continued as long as leaking can be prevented by drying the area and applying a strong adhesive tape. **CAUTION** – if the damage is close to a heavily loaded point then a close examination should be made to ensure joints and the laminate are fit for the prevailing conditions. Get the damage properly repaired as soon as possible.
- c) **SMALL** e.g. chips, scratching. This type of damage is obviously not life threatening but needs attending to. Firstly to keep the boat looking good and secondly to prevent water ingress into the laminate. This type of damage can be repaired by the owner, using the correct RS gel coat.

Tying down

Tying down your RS300 to its trailer is important because too much or too little tension could result in damage. Only use an RS approved trolley. The boat is well located on its trolley, so you only need apply sufficient tension to hold the boat in contact with the supports.

Tie the boat down at the bow and across the middle in the region of the trailer wheels. Pad the deck where the straps touch.

Ensure the top and bottom sections of the mast are taped together to avoid them splitting during transit.

Foils

The foils are GRP 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 RS padded foil bags will be a worthwhile investment.

Spars

The mast is a carbon composite structure and is in two parts which sleeve together. Separate the two parts regularly and wash with fresh water. Apply a thin layer of vaseline to the sleeve. Check the sheave at the mast head for wear.

The mast is finished with a coat of two pack polyurethane varnish. This protects the laminate against UV degradation in sunlight. It is advisable to apply a new coat of varnish once a year. Lightly sand the mast to help the new varnish bond to the old.

The boom is aluminium alloy. Wash regularly and check the fastenings of all fittings are secure. Remove the boom from the mast when leaving the boat in a dinghy park, to prevent electrolytic action between the carbon of the mast and the boom jaws. Leave the gooseneck bolt in the boom, not the mast.

Sail

The sail should be rolled and stored dry, out of direct sunlight.

When using a new sail for the first time, try to avoid extreme conditions because high loads on a new sailcloth can diminish the racing life of the sail.

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.

Repairs should be temporarily made using sticky number cloth or sail repair tape and then returned to the sailmaker for a professional repair. Watch out for wear and tear, especially around batten pockets and bolt rope.

RS CLASS ASSOCIATION

www.rs-association.com

The RS Class Association is highly active and you really should join.

The **RS Racing Circuits** are the envy of the dinghy world, with great competition and a fantastic and friendly social life. The RS Association also organises **Training Events** throughout the year. **Social** highlights such as the RS Ball are not to be missed!

The Class Association produces regular, informative Newsletters, and a Yearbook. There is also an extremely comprehensive RS Association web site, part of which is only accessible to RS members.

In addition, the Association maintains the Class Rules, which are the “fabric” of any one design class. Without these the Class would disintegrate and values would tumble.

The Association relies on the support of the owners of the boats to financially survive. Membership costs only £33.00 per year (£15 for Youth membership) and without it, you won't even know what you are missing!

You should have received a membership application form with your new boat, but if not, please contact the RS Class Membership Secretary Jill Line on 01275 872466, jill@the-j-team.fsnet.co.uk, or see under 'Documents' on the website.

Members receive a voucher towards the cost of boat insurance with Noble Marine Insurance.

Any other queries about the Association should be directed to the RS Association Administrator, Heather Chipperfield, on 01590 610273, heatherc@rs-association.com.

INSURANCE

The Class Association has organised an insurance scheme with M A Noble Insurance Brokers. They are highly efficient to deal with and always fair when it comes to making a claim.

Contact Noble Insurance on:

Tel. 01636 707606

Fax. 01636 707632

