

# **RS200**

## **OWNER'S MANUAL**

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# Introduction

Congratulations on the purchase of your new RS200.  
The RS200 was designed by Phil Morrison and launched in the UK at the beginning of 1996.

<b>Designer</b>	Phil Morrison	
<b>Length</b>	4.00m	13'0"
<b>Beam</b>	1.83m	6'0"
<b>Sail Area (main &amp; jib)</b>	11.52sq.m.	124sq.ft.
<b>Sail Area (asymmetric)</b>	8.29sq.m.	89sq.ft.
<b>Weight</b>	78Kg 172lbs	

## Important Note

The RS200 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.

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# Rigging and Sailing

By Phil Morrison (designer)

Your RS 200 will have been examined and checked both at the factory and by your dealer. The following is a step by step guide to rigging the boat for the first time and some general advice on sailing your new RS 200.

## Preliminary checks

As delivered the mast may be wrapped for transport please remove the wrapping carefully and perform some preliminary checks as follows:-

- (1) Check that the shroud 'T' terminals are correctly seated in their sockets on the mast and that they are securely attached to the end of the spreaders.
- (2) Ensure that the spreaders are angled slightly above horizontal with no slack in the shroud above the spreader. It is a good idea to secure the spreader ends with PVC (electrical insulating) tape to prevent them moving up or down the shroud
- (3) Wrap tape around any sharp edges on the spreaders or brackets to protect the spinnaker.
- (4) Attach a short length of shock cord between the shrouds approximately 300mm down from the top and passing around the jib halyard and forestay this will help prevent the spinnaker being trapped in the angle formed between the jib halyard and the mast under certain situations.
- (5) Check the spreader settings, spreaders should have been pre-set at the factory or by your dealer but the recommended initial settings are as follows:-  
Length of spreader measured from the wall of the mast to the shroud 390mm  
Distance from a line between the shrouds and the back of the mast 140mm
- (6) The main and jib halyards should be sorted out and dressed neatly down the mast
- (7) Check that the spinnaker halyard passes through the Twecker ring which is tied to a line which emerges from the front of the mast just above the forestay
- (8) Dress the spinnaker halyard down the mast in the manner described below

## Warning:-

The spreader settings recommended are safe general purpose settings. Most people should not find it necessary to deviate substantially from these positions. We have deliberately left the spreaders adjustable in the RS200 to enhance its potential as a racing boat and broaden the range of competitive sailors. Extreme settings, especially a reduction in the distance from the shrouds to the back of the mast, may lead to mast failure in strong winds.

## Stepping the mast

### Before stepping the mast

- (1) Check the surroundings for electrical power lines! On no account attempt to step the mast near electrical power lines or if there are any lines between you and the sailing water!
- (2) Check, all sheaves and pulleys rotate freely
- (3) Check the shrouds, forestay and halyards for damage or chafe, the spreaders for alignment and that the spinnaker halyard and Tweeker line move easily.
- (4) Fit any racing flag or wind direction indicator to the mast head.  
It will help if the boat and launching trolley are off the road trailer base when stepping and unstepping the mast as this keeps the boat as low as possible.

### Stepping the mast

- (1) Check the shrouds and forestay are free and ready to attach and that the mast step in the boat is clear of ropes and obstructions, the kicking strap rig tension and cunningham controls should all be aft of the step
- (2) Rotate the mast to the upright position whilst standing beside the boat adjacent to the mast step.
- (3) Try to ensure that the tenon at the base of the mast remains free of sand, grit or stones.
- (4) Lift the mast into position. If you are uncertain or there are strong winds it will be helpful if one crew member stands in the boat just behind the mast step. Be careful to keep forward of the launching trolley wheels when in the boat.
- (5) Ensure that the tenon is fully located, both in the step and between the two bolts. It should be a snug fit, any rotational play reduces the efficiency of the spreaders to control mast bend.
- (6) One crew member remains holding the mast.
- (7) The other crew member can then attach the shrouds.  
For a first setting locate the shrouds 5 holes down on the longer range of adjusters.
- (8) Secure the forestay to the large eye bolt at the bow using at least 3 turns of the lanyard and finally finishing off with 3 or 4 half hitches.
- (9) Do not over tension the forestay, a light tension sufficient to prevent the mast moving around excessively is sufficient.  
It is desirable that the forestay has some considerable slack in it once the jib is hoisted and tensioned. The windward performance of you RS 200 may be adversely affected if the forestay becomes tight whilst sailing!
- (10) Once the mast is stepped and secured tape all the rigging pins on the shrouds for extra security.
- (11) The clip on the Tweeker line, which exits from starboard side of the mast just above the gooseneck, should now be connected to a similar metal clip to be found near the inboard end of the spinnaker Sprit.  
The RS 200 mast is fairly light, most people will have little difficulty simply lifting the mast into place in the mast step as described. If you are short

handed, however, it is possible to step the mast with the shrouds already attached.

**Warning:-**

The forestay on the RS 200 is intended solely to support the mast when ashore without sails hoisted. Do not attempt to sail the boat without a fully hoisted and tensioned jib. Should the jib fall down or lose tension for any reason return to shore as quickly as possible sheeting the mainsail only lightly.

Normally, before lowering the mast:-

- (1) Un-reave the spinnaker halyard tail right back to the exit slot in the mast.
- (2) Make a large bowline in the fall of the halyard.
- (3) Pass the whole of the tail of the halyard through the loop of the bowline.
- (4) Keep hold of the bitter end of the halyard tail
- (5) Pull on the halyard where it exits from the mast slot, hoisting the bowline up the mast taking a loop of the tail with it.
- (6) When the halyard has got to the end of its travel the end can now be secured at the exit slot with a couple of half hitches.
- (7) Any remainder can be wrapped around the mast or used to secure the shrouds etc.

This method of securing the spinnaker halyard when de-rigging has the advantages of keeping everything tidy when lowering or stepping the mast. More importantly it does not require a lot of winding or coiling which helps to keep the halyard twist and kink free when sailing. The Sprit is fully rigged and set at the factory but you should see the sections below, on operating and rigging the Sprit for details of operation.

**Reaving the spinnaker halyard**

If you have dressed the spinnaker halyard on the mast as recommended above:-

- (1) Untie the hitches and pull the halyard down.
- (2) Keep the bowline on the end of the halyard and hook it over a handle of the launching trolley. This is a precaution to ensure the halyard is not inadvertently pulled up the mast, or worse still, pulled through the top sheave.
- (3) Feed the tail of the halyard directly from the exit slot forward through the outer (unsprung) pulley at the aft end of the sprit tube.
- (4) Pass it around the single block attached to the pole launch line, situated toward the front of the tube.
- (5) Pass it back through the fairlead and cleat at the inboard end of the sprit tube.
- (6) Lead the halyard tail, which is now the downhaul line, via the block fitted close to the port forward end of the centreboard slot and directly back to the turning block at the aft end of the spinnaker sock.

(7) When you attach the spinnaker (see:- Rigging the spinnaker), this line must be fed through the spinnaker sock to the chute mouth and tied to the downhaul patch on the spinnaker. A sail batten or stiff wire will help with this on the first occasion.

(8) Remember to pull the end of the spinnaker sheet or some other rope back through the sock when you subsequently de-rig in order to facilitate this action in future.

### **Hoisting the Jib**

When using a brand new jib for the first time carefully unroll it in a clean area and hold it out by the three corners:-

(1) Ensure that the eye in the luff wire at the head is correctly aligned with the attaching tape.

(2) Now whilst applying firm tension to the luff wire make a small lashing at the tack between the eyelet in the sail and the eye in the luff wire ensuring these are correctly aligned. (You cannot do this with the jib rolled as this twists the wire relative to the sail.)

(3) Leave the lashing quite slack at this stage you can adjust the tension once the sail is hoisted and the luff wire correctly tensioned.

(4) Attach the jib sheets, knotting the sheet rope at its centre through the clew cringle.

(5) At the boat, shackle the tack to the same eye bolt as the forestay ensuring the eye in the luff wire and the sail lashing are correctly aligned fore and aft without any twists.

(6) Shackle the jib halyard to the head of the jib, ensuring the jib or halyard are not twisted.

(7) Tape these two areas generously to prevent snagging the spinnaker.

(8) Hoist the sail by pulling on the jib halyard tail, which exits from a slot just beneath the gooseneck

(9) Hook the loop of wire which emerges onto the jib halyard tensioning purchase. It may help to obtain sufficient slack at this point if one crew member pulls firmly forward on the forestay.

(10) Ensure that the tensioning purchase is not twisted or fouling other systems (it should be the one closest to the mast).

(11) Pull on some rig tension, a generous heave should be sufficient.

(12) Stow the halyard tail in the halyard bag provided.

(13) Check that the forestay now has plenty of slack in it and that the jib is not twisting at the head. If it is, it may be necessary to lower the sail and turn the wire (undoing the temporary lashing) at the tack until the sail lies fairly well fore and aft.

(14) Adjust the lashing at the tack so that the tension is just sufficient to remove the wrinkles in the sail cloth (it may be necessary to redo these adjustments after one or two sails as the jib and luff wire settle down).

(15) Finally pass the jib sheets through the jib fairleads and finish off with a figure of eight knot in the usual manner.

(16) If conditions permit cleat the jib to save it flapping and remember never leave any sails especially the jib and spinnaker flapping unnecessarily as this considerably shortens the life of the sail.

## Rigging the spinnaker

If conditions allow, it is simplest to rig the spinnaker with it partly hoisted and whilst the jib is up.

- (1) Identify the three corners of the sail, the tack is close to the sailmakers mark and should be attached to the tack line which is permanently fixed to the end of the Sprit, tie this on with a bowline.
- (2) Next attach the halyard to the head of the spinnaker (the corner with the narrowest angle), first checking that it is clear of the jib halyard and forestay.
- (3) Partially hoist the spinnaker and with the slack thus gained in the halyard/downhaul pull it out of the chute mouth and attach it to the downhaul patch on the spinnaker. Remember this line should go directly from the chute mouth to the spinnaker if the spinnaker is lying on the port side or around in front of the jib luff if the spinnaker is to starboard, it should **not** pass inside the jib luff in order to reach the spinnaker.
- (4) The spinnaker sheets should be fed under the kicking strap and boom but over the jib sheets and spinnaker halyard, passing directly across the boat between the ratchet blocks attached at each shroud anchorage. Take care to ensure that they are threaded the correct way through these ratchet blocks (the arrows indicate the direction of sheeting in, i.e. they should point into the boat). You can check this by holding the sheet on either side of the block and applying some load to engage the ratchet whilst moving the sheet back and forth.
- (5) Take the ends of the spinnaker sheets and bring them together at the jib luff ensuring that they pass **outside** everything to do with the jib and forestay and **inside** everything to do with the spinnaker.
- (6) Take both sheets to the spinnaker clew (the corner with the greatest angle.....the only one left!) ensuring one sheet passes around the jib luff and tie them securely making sure they are **inside the downhaul**. Keep these knots neat and tape the ends to avoid snagging the downhaul and jib luff when dropping the spinnaker. A tip is to tie one slightly large bowline to the clew spinnaker. A tip is to tie one slightly large bowline to the clew cringle and tie the second sheet to the loop of that bowline to prevent a large bunch right at the clew.
- (7) Finally if conditions permit try the sail on either gybe to ensure everything is rigged correctly and lower the sail pulling gently on the downhaul and carefully feeding the sail into the chute making sure it does not snag on the launching trolley handles etc.
- (8) Tape everything which may snag a wayward spinnaker.
- (9) Whether it was possible to check that the spinnaker was rigged properly whilst ashore or not; it is good racing practice to make a habit of hoisting the spinnaker and trying a gybe or two prior to the start of the race anyway.

## Hoisting the mainsail

- (1) With a brand new sail carefully unroll the sail in the boat or on a clean smooth surface and ensure the battens are fully inserted into their protectors

at the luff and securely tied into the sail. It is preferable, initially at least, to tie the battens in too tightly rather than too loosely. This helps to prevent the formation of wrinkles emanating from the battens in use. Other than this the sail is ready to hoist.

(2) Ensure that the boat is as near as possible head to wind. This is especially important with fully battened sails as point loads at the end of the batten tend to accelerate the wear on the luff tape if care is not taken when hoisting and lowering the sail. The use of candle wax or silicon spray in the luff groove from time to time is highly recommended, this will certainly ease hoisting and prolong the life of your sail.

(3) Do not attach the boom.

(4) Tie a permanent overhand knot in the end of the halyard for security.

(5) After checking that the halyard is clear attach it to the head of the mainsail by tying another overhand knot through the eye in the headboard. A bowline is not recommended as it wastes distance at the mast head, it is also a weak knot especially when tied in Kevlar.

(6) The exit for the main halyard is positioned on the port side of the mast, when hoisting try to avoid letting the halyard run through the Clamcleat. Hoist the sail taking care to feed the sail carefully into the metal feeder on the luff groove. You will notice that this becomes a little harder just after each batten as the tension in the sail cloth tries to force the bend into the batten. You will help this situation by holding the luff rope just below the feeder and pulling it forward of the sail track, this will force bend into the batten and take the load off the sail where it enters the feeder.

(7) Do not force the sail into the feeder, if it catches ease the sail down a little and then start again using the technique described above.

(8) When fully hoisted slip the halyard into the Clamcleat and stow the halyard tail in the stowage bag beneath.

(9) Secure the tack around the mast using the webbing and buckle provided.

(10) Ensure that the cunningham eye purchase is untwisted and connect this by passing the knotted end of the single line through the higher cringle in the sail and locating the knot into the short length of sail track available above the jib exit slot immediately under the gooseneck.

(11) Pull fairly hard on the cunningham control and release, now pull hard on the main halyard once again and re-cleat, this helps remove stretch in the halyard.

### **Rigging the boom and mainsheet**

(1) Check and adjust if necessary the position of the sliding eye attachments for the central mainsheet block and kicking strap, ensuring that the latter is very firmly screwed home. These may be adjusted to suit your personal preferences however the following positions are recommended as a guide:- mainsheet at 1030 mm and kicker at 380mm, measured from the inboard end of the boom to the centre of the eye.

(2) After sailing your RS 200 in a variety of conditions, and you are satisfied these positions are correct, a small hole drilled in the underside of the boom track where the slider screw locates will ensure these fittings do not slip under load.

- (3) Attach the kicking strap purchase to the eye on the boom ensuring it runs freely and is clear of twists.
- (4) Reave the mainsheet. Tie a figure of eight knot in one end of the mainsheet then pass the other end through the fairlead on top of the swivelling mainsheet cleat, through the ratchet block in the opposite direction to the indicating arrow and up to the central block on the boom. From here feed the mainsheet through the slot in the underside of the boom until it emerges at the outboard end, thence through the block at the end of the boom. Finally pass it through the loop in the centre of the aft bridle and tie a simple overhand knot to prevent it pulling back through.
- (5) You may wish to tie a further fig.8 knot in the helmsman's end of the mainsheet, positioned so that the boom will not hit the shroud with the mainsheet released. This saves wear and tear on the boom and mainsail and could prevent a broken boom or mast in the event of a capsize in strong winds.
- (6) If not already supplied by your dealer you are recommended to fit a gybing rope as follows:- tie one end of a piece of rope approx. 900mm long to the centre boom eye and make a bowline in the other so that the loop encircles but does not restrict the fall of the mainsheet. This rope enables the helmsman to pull the boom over positively in a gybe rather than pulling on the mainsheet.
- (7) Normally the mainsheet and kicking strap may be left permanently attached to the boom for ease of use.

### **Fitting the rudder**

- (1) Fit the tiller extension to the end of the tiller, the flexible joint on the extension locates in the fitting provided on the tiller and is locked in place by rotating the cover plate.
- (2) The tiller extension, as supplied, is certainly long enough for most tastes. If you find the extension on the long side it is perfectly acceptable to trim it to length by cutting off the outboard end.
- (3) Ensure the extension is properly located then wrap tape around the cover plate and tiller as a precaution against accidental release.
- (4) Ensure the down haul line is released and fully raise the rudder blade in the stock.
- (5) Adjust the wing nut pressure so that the friction will safely hold the blade up.
- (6) Pass the tiller and extension under the mainsheet bridle and slide the rudder assembly onto the transom fittings.
- (7) Check that the rudder retaining clip engages correctly over the lower gudgeon.
- (8) Immediately prior to launching ensure the tiller extension is clear of the mainsheet

## **Attaching the boom**

As the boom can be readily attached whilst the mainsail is hoisted, you will find most owners do not attach the boom until they are just ready to launch and soon release the clew on coming ashore. You will find this makes the sail a lot more manageable and removes the potential danger from an uncontrolled boom.

When ready to launch you should attach the boom to the mast and sail as follows:-

- (1) Release the outhaul line near the inboard end of the boom so there is about 500mm of line available at the outboard end.
- (2) Slip the inboard end of the boom onto the gooseneck.
- (3) From the aft end of the boat maintaining slight forward pressure so that the boom does not fall off the gooseneck, lift the outboard end of the boom to the clew of the mainsail.
- (4) Engage the clew slider into the slot on the top of the boom and pull aft.
- (5) Thread the outhaul line through the clew cringle and locate the knotted end in the 'V' notch at the end of the boom.
- (6) Tension the outhaul to the desired setting. A setting allowing about 50mm draught in the foot of the sail will make a good starting point.

## **Adjusting the centreplate friction**

The friction pad which holds the centreboard in position is pre-set at the factory after a few sails it may be necessary to adjust this setting:-

- (1) Whilst the boat is on the launching trolley and trailer base raise the bow of the boat as far as it will go.
- (2) Armed with a good "Posidrive" screwdriver and a short piece of wood or plastic approx. 25 x 5 mm in section get under the boat near the forward end of the centreboard slot gasket.
- (3) Insert the piece of wood through the slot in the gasket and rotate it to spread the gasket.
- (4) The two screws locating and compressing the centreplate friction pad should be readily visible
- (5) Adjust the friction pad as desired screwing in to increase centreplate friction.

## Sailing the RS 200

Your initial perception of the RS 200 will depend to a large extent on your previous dinghy experience. If you are used to small light weight dinghies then the 200 will hold few surprises. However, if you are relatively inexperienced and used to the more intrinsically stable kinds of dinghies found in sailing schools you may find her lively feel a little disconcerting at first. This is primarily a function of her lower weight and narrower waterline relative to her overall beam. If you feel this to be the case, simply avoid sailing in strong winds for the first few sails. You will rapidly become acclimatised to these characteristics and should quickly begin to appreciate the advantages of sailing a light responsive racing dinghy. You will notice that although the boat feels lively and responsive she still remains controllable at all times, provided you provide the correct input of course! You may find it helpful to remember that helm and crew will need to move about more than in larger heavier boats. Similarly, that correct steering plays as much a role in keeping the boat upright as playing the sheets, especially off wind with the spinnaker up. It is just these characteristics that make the RS 200 the ideal boat to hone those sailing skills and provide the long term excitement and satisfaction of competing in a challenging racing dinghy.

Prior to leaving the shore make a quick check of the cockpit to ensure that all ropes, sheets, tiller and extension are clear and free running. If it is light wind or you are likely to spend some time at low speed insert the bung in the self bailer hole at the back end of the centreplate case.

Remember to lower a little centreplate as soon as possible and fully lower the rudder by pulling on the downhaul line as soon as you have enough depth of water. Avoid applying a large load to the tiller when the rudder blade is not fully down as this can put considerable loads on the stock and fittings. Try to sail the boat away from the beach using the sails and heel of the boat to guide her. Once safely in deep water and clear of other boats tighten the wing nut on the rudder stock if necessary, this helps to eliminate extraneous movement and maintain a positive feel especially in strong winds. Don't forget to slacken the wing nut before coming ashore!

You will find that with the rudder blade fully down the helm should be both light and responsive. If at any time the helm becomes heavy, suspect that the rudder has lifted and check that it is fully down. Should you prefer a little more feel to the helm in particular in light weather, then you can of course deliberately let the rudder come back a small amount. The movement required is very small indeed and probably best achieved by attaching small packing pieces to the inside of the rudder stock just below the lower fitting, where the rudder blade touches when fully down.

Sheet in and enjoy your sail. Give yourself and the crew time to get used to the feel of the boat initially, allow plenty of time for manoeuvres. Check the main sheet and jib sheet cleats are the right height for ease of operation, the toe straps are adjusted for best sitting out position, you are comfortable with the tiller extension length. Try a few gentle tacks, you will probably be

surprised how fast she can tack and you may need a little time to get used to pushing the tiller extension in front of you, Laser style, as you start the tack. Don't try to take it round the back, it won't go! Try some gybes, in any wind you will find the gybing line described above most useful for pulling the boom over and that just the right amount of rudder correction is required coming out of the gybe.

## **Setting the fore and aft sails**

The following are helpful generalisations to guide the relatively inexperienced. Further advice and information is available in subsequent sections to help you get the best racing performance from your RS200.

### **The jib**

Once hoisted and a firm but not ridiculous tension is applied to the rig the only adjustment necessary is to position the jib fairleads. By and large if the rake has been set up as suggested in 'stepping the mast' then a middle position should not be far out. The jib has a fairly narrow sheeting angle and consequently the crew should be careful not to over sheet the jib. In most conditions the jib should be set as closely as possible yet allowing the leach to take a slight curve in sympathy with the shape of the mainsail. There is no hard and fast rule, only practice and experience will find the correct setting for all conditions. Observation of the telltales will go a long way to helping find the correct setting. When the jib is correctly set these should all respond pretty well in unison, if you have difficulty in achieving this then try moving the fairleads a little fore and aft as follows:-

If the top leeward telltale tends to collapse before the others then ease the sheet a little (by little read 1cm or so), if this causes the foot of the jib to get significantly fuller then move the fairleads aft. If the top windward tell tale tends to lift well before the others then sheet a little harder or if this has little or no effect then move the fairleads forward. In very light and in strong winds the fairleads should be moved a hole or so aft of the optimum to encourage the leach to open. The RS 200 is fundamentally a pointing boat; so even in moderate winds the top windward telltale should lift a fraction before the others and the boat generally sailed to windward such that all windward tell tales are lifting a little.

### **The mainsail**

To windward in all but the most extreme conditions the mainsail should be sheeted close to the centreline. To this end the length of the mainsheet bridle should be adjusted in order to optimise this across the wind range. Adjust the clew outhaul so that it just takes the slack out of the foot of the sail. Only ease it when off the wind or when looking for that extra bit of power in say moderate winds and a choppy sea, and then only a little. You may pull it tight once overpowered especially on flat water.

In most conditions sheet the mainsail solely with the mainsheet, the kicking strap should remain slack and only come into play when the mainsheet is

eased or in strong winds. Up until the wind strength when you are effectively overpowered all of the time use no cunningham tension at all, basically sail on the mainsheet constantly adjusting the tension to keep the upper part of the mainsail correctly sheeted. Use the upper leach telltale to help you determine this. Beware of under sheeting the mainsail, from experience many people, even experienced hands, who are new to fully battened mainsails tend to under sheet the sail with a consequent loss in pointing ability. The combination of large upper roach and modified aerodynamics mean that considerably more tension and less twist is required for the optimum performance. Obviously it is still possible to overdo it, but be prepared for the best performance to be when the upper leach telltale spends more of its time collapsed than flying.

As you start to become overpowered, especially in gusty conditions, parry the gust by luffing slightly and easing the mainsheet for a moment. If the gusts are particularly viscous or prolonged you may set the kicker so that it is very lightly tensioned when the sail is sheeted fully in and comes under load as the main is eased. This further helps to bend the mast and improves the responsiveness to the gusts.

As the wind increases further to the point where you are almost continuously having to ease power start to pull some tension on the cunningham control, bearing in mind that you should always aim to be slightly overpowered rather than under powered. "Rig for the lulls and not for the gusts".

You will find that the cunningham is much more effective in de-powering the fully battened sail than it is in a conventional soft sail. Use just sufficient kicking strap tension to maintain the pointing required. Ultimately you may end up with full cunningham and considerable kicking strap tension, by now it will be very windy indeed! Don't forget to ease some kicker before you bear away or you will put unfair loads on the lower mast. If things deteriorate to survival conditions you will probably find extra super cunningham tension and virtually no kicking strap tension to be the easiest set up to control.

## **Off wind**

Ease the cunningham away completely. Adjust the kicking strap to the best setting. Due to the unsupported deck stepped mast, this will have to be a compromise between reducing twist and over bending the lower mast.

If overpowered on a tight reach with the spinnaker set remember to ease the kicker to allow the upper sail to twist open and spill wind. If trying to survive or just lay the mark on such a leg don't forget the cunningham can be used to further flatten and de-power the main.

Use of the outhaul will normally be restricted to maximising power on two sail reaches.

## **Setting the spinnaker and operating the Sprit**

To hoist the spinnaker in reaching mode - ensure the check line knot is clear of the "V" notch alongside the halyard cleat and pull on the spinnaker halyard until the sprit is fully extended and the halyard is hoisted to hounds height (the tweaker line should be

taught). Ensure the downhaul line is free to follow the spinnaker out of the chute ( you are not standing on it). Unless something becomes fouled the sprit should have precedence over the halyard as it has a 2:1 purchase advantage. Sheet in using the appropriate sheet. Check again that the halyard/downhaul is not caught and distorting the spinnaker

Now treat the spinnaker virtually like a large jib.

As with a jib or a conventional spinnaker for that matter pay attention never to over sheet the sail. The spinnaker sheets should be played constantly in an attempt to keep the luff of the sail just on the edge of collapse. With practice at the onset of a gust especially on a tight reach the luff of the sail can be partially rolled to help keep the boat on a level keel and travelling at her maximum speed.

It is a characteristic of the asymmetric spinnaker that it will develop considerable lee helm at times particularly if the main has to be eased to any extent. For this reason it should never be necessary to raise the centreboard when reaching and is perfectly acceptable to sail the boat with a slight heel to leeward to obtain a neutral helm. The hull shape has been designed with this consideration in mind.

## **Gybing**

Gybing an asymmetric spinnaker is simplicity itself but as with most manoeuvres there are a few simple tricks which can help with the efficiency of the process.

They are not going to like hearing this but the helmsman holds the key to a perfect gybe! The speed with which you enter the gybe and the amount by which you allow the boat to round up after the boom has crossed over affect the success of the gybe fundamentally. Don't bear away too quickly. Try to bear away smoothly allowing the crew sufficient time to adjust the sheets and maintaining speed. In preparing for the gybe the crew should have released the old jib sheet and set the new one loosely on the windward side then taken as much slack out of the new spinnaker sheet as possible. The crew should resist the urge to let go of or ease the old sheet too far. In fact it will help if the crew gives the old sheet a final tug in at the last moment before the boom goes over and subsequently sheets in smartly on the new sheet. Coming out of the gybe if the conditions allow the helmsman should permit the boat to round up sufficiently to fill the spinnaker as quickly as possible before bearing away smoothly to the new course. Timing is the essence and practice makes perfect.

**To hoist in running mode** - locate the check line knot in the "V" notch and pull on the spinnaker halyard until the spinnaker has reached the top ( in this case the sheave box above the hounds). Pull on the windward sheet and set as if goose winging a jib. Setting the spinnaker goose winged on the run is not easy, it requires accurate course control and co-ordination but can have marked performance advantages particularly in restricted and tidal waters. It certainly adds another fascinating dimension to down wind tactics. The finer points of goose-winged running are still to be discovered.

**To change from reaching to running mode** - ease the sheet to unload the spinnaker, then release a good armful (1 metre - 3ft.) of halyard and retract the sprit by pulling on the check line. Locate the knot on the "V" notch and finally take up any slack in the halyard. With practise it may be possible to release the correct amount of halyard initially so that final adjustment is not necessary however too much is better than too little at first.

**To change from running to reaching mode** - probably best accomplished before hardening up onto the reaching course - as before ease the sheet to unload the spinnaker, then release a good armful of halyard (this allows the Tweeker line take up to pull the halyard down to the hounds) release the Check line from the "V" notch and pull on the spinnaker halyard again until the sprit is extended and sail hoisted to the hounds.

**Lowering the spinnaker in either mode** - release the halyard and allow to run free then haul quickly and firmly until the spinnaker is fully recovered into the chute and the pole retracted. It helps avoid bunching and the downhaul becoming entangled in the sheet knots if the sheet is not released too early in this process; give it to the helmsman or try standing or sitting on it until the spinnaker is entered into the chute mouth.

## **Rigging the Sprit**

Internal lines should be rigged as shown on the attached diagram.  
To set the correct lengths proceed as follows:-

- (1) Tack line - fixed length sufficient to tie to spinnaker
- (2) Launch line - should emerge through the slot in the outertube, pass anti-clockwise around the adjacent cheek block and tie off to a single block. The length should be such that this block is fully forward when the pole is retracted (check there is sufficient movement to fully extend the pole).
- (3) Tweeker line - comes out of the inboard end of the pole and passes around the inner (sprung) block and is connected by the clips to the end of the Tweeker line which emerges from the mast just above the gooseneck. To ensure the correct lengths the pole should be fully extended and locked out. The Tweeker line coming from the pole should then be pulled as far as it will go and the clip tied off close to the sprung block. The Tweeker line and clip from the mast should now be tied off tightly so that the spinnaker halyard is held firmly into the mast at the hounds. Check that with the pole retracted the spinnaker halyard can go fully up the mast (the clips have sufficient travel between the sprung block and the mast exit slot) and that with the pole extended there is no significant slack in the Tweeker line.
- (4) Tweeker line take up elastic - this should be tensioned so that the Tweeker line still has as much tension as possible when the sprit is retracted yet the elastic is never over-stretched when the Tweeker line

is tensioned. Check this by pulling on the Tweeker line and ensuring the internal plastic ring can travel right to the inboard end of the sprit.

- (5) Check line - simply exits from the inboard end of the sprit and outer tube, although it is also used to attach the end of the take up elastic it is not meant to move so ensure it is knotted both ways. a further knot should be placed in the Check line so that it can be engaged in the "V" notch in the base plate to prevent the sprit from going out. The line should be left long enough that the end does not disappear into the sprit outer tube when the sprit is extended.

## By Richard Woof – the builder

There are four key areas of care:

1. Keep your dinghy well drained and ventilated
2. Wash with fresh water (internally and externally) on a regular basis
3. Have damage repaired promptly.
4. Tie your dinghy correctly to the trailer for towing

### **1. Keep your dinghy well drained and 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 and self bailer.
- 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 by the self bailer to prevent water draining from the cockpit and filling the undercover. Do not leave the undercover on for long periods.
- d) Trailer cradles should be covered with a free draining material, in order to prevent an osmotic cell. All recent RS trailers are supplied with a ribbed rubber cradle liner. If your trailer cradles do not have this, a rubber kit is available through your RS dealer.

### **2. 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.

### 3. Damage

Hull damage falls into three categories:

a) **SERIOUS** e.g. large hole, split, crack or worse. Don't be too distressed! Get the remains back to your RS dealer, most problems can be repaired by the builder.

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 off the area and applying a strong adhesive tape. Sail repair tape, duck tape or "denso" tape works well with the ends of the tape cut to a radius to prevent the corners peeling back. CAUTION - if the damage has occurred on or close to a heavily loaded point, then a close inspection should be made to ensure joints or laminate are fit for the prevailing conditions. If in doubt, ask an RS dealer. With this type of damage, get it fixed as soon as possible at your local RS dealer.

c) **SMALL** e.g. 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. Start by carefully drying the area to be repaired.

N E A T N E S S    A N D    C A R E  
I S    T H E    S E C R E T    O F    A  
G O O D    R E P A I R !

If the damage is a single scratch or score mark, make sure it is clean by gently re-scratching with the tip of a sharp craft knife. If the damage is more general, etch up with a medium grade abrasive - say 80 grit (no wet or dry paper because it will leave a grey discoloration). Blow off the dust, don't wipe; this may leave fluff or contamination which will spoil the quality of the repair. If your hand is not steady, mask around the prepared area with masking tape (always remove the tape while the gel coat is liquid)

The gel coat you get from the dealer has a wax additive in it so, when it cures, a tack free surface is produced. This tack free surface makes final shaping and finishing of the repair easier but also means that if you have to recoat the repair, the surface should be abraded or solvent wiped to remove the paraffin wax which helps create the tack free surface.

Stir the tin of gel coat, then decant a small quantity into a suitable container and add 2% catalyst. As a guide use 2 drops of catalyst (match head size) per full tin lid measure from an RS gel coat tin. Mix thoroughly and carefully apply to the repair area with a suitable instrument e.g. artist's brush, cocktail stick, match stick etc.

The speed of cure depends on temperature - on a warm day, the repair will be workable in 1-2 hours, if cooler, it may have to be left overnight. The shaping and finishing is done firstly with a file or fine abrasive 180 - 240 grit and then rubbing down with wet or dry abrasive 400 grade, then 600 grade, then 800 and finally 1200 grade. Finally polish with a proprietary polishing compound.

#### **4. Tying down your dinghy correctly**

Tying your RS dinghy correctly to the trailer is obviously important, but damage can be caused by tying down too tightly or too loosely. The boats are well located on their trailers and it is therefore only necessary to apply sufficient tension to hold the boat in contact with the cradles or keel and gunwale support. Tying the boat too loosely will allow it to move around on its supports, running the risk of scuffing the hull, but too tightly and there is a risk of structural damage. Do use ratchet straps unless they are used very gently.

# Sail Care Guide

## By Hyde Sails

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:
  - \* Ensure there are no folds in the cloth as you roll the sail.
  - \* 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.
6. Repairs should be temporarily fixed using sticky number cloth or sail repair tape and then returned to a sailmaker for a professional repair.
7. 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.
8. Make sure that all shackles, pins and sharp objects that the spinnaker might travel over are well taped (preferably using PVC tape). Untaped shackles or frayed wires are the most common cause of major tears in spinnakers.

# Racing and Race Tuning

## Setting up the RS200 - Rig checklist

### Light Winds

Rig Tension	Eased slightly.
Cunningham	Slack.
Outhaul	Tight, foot of sail just touching the boom.
Kicker	Slack when sheeted in, but with just enough tension to allow you to flick the battens when tacking.

### Light - Medium Winds

Rig Tension	Full tension, very tight.
Cunningham	Slack.
Outhaul	Eased in choppy water, foot of sail about one hand width from the boom. Tight in flat water.
Kicker	In choppy water, just enough tension to stop the boom skying when sheet is eased. Slightly more tension in flat water.

### Medium - Strong Winds

Rig Tension	Full tension, very tight.
Cunningham	Pull on lots when overpowered, but ease it off in the lulls.
Outhaul	Tight but not bar tight if it is choppy.
Kicker	Moderately tight so as to bend the mast a bit and control the amount of twist. More tension in flat water than in a chop.

### Strong Winds

Rig Tension	Full tension, very tight. Possibly rake mast back by tightening the shrouds.
Cunningham	Very tight except in the lulls.
Outhaul	Very tight.
Kicker	Very tight, but not so tight that the mainsail is prevented from twisting and opening at the head.

Your RS200 has been set up at the factory to the following rig dimensions which were taken from the winning boat at the 1996 National Championships:

Forestay Rig Tension - measured using ISP tension guage	25
Shroud rig tension - measured using ISP tension guage	
Below 6 knots of wind (sub-hiking)	150-200lbs
7 knots of wind and above	350lbs
Mast Rake - measured to top corner of gudgeon mount	21'9" (6625mm). For winds above force 5 drop the shrouds by one hole on the shroud plates
	21'7" (6575mm)
Spreader length - measured from the centreline of the shroud to the mast on the centreline of the spreader	375mm
Spreader deflection - measured as the shortest distance between the back face of the mast and a stright line between the shrouds.	125mm

# Racing the RS200

## Upwind

**Under 6 knots:** In this sub hiking wind it pays to control the mainsail leech using the mainsheet only. In this breeze, the jib generally has to be played, often with the sheet slightly eased to maintain speed through the water.

The outhaul should be falling off the boom, creating approximately a 2" gap between the boom and the foot of the sail at its mid point.

It is important to get the crew weight as far forward as possible, with the crew being located in the vicinity of the jib cleats and the helm in front of the main sheet.

**6-15 knots:** Once hiking, increase the rig tension as out-lined above, the jib can then be sheeted fairly hard to generate pointing. Try and maintain mainsail leech tension with the mainsheet for as long as possible, but as soon as the boom has to be eased, the leech tension will have to be held by the vang. Once vang is required, it pays to "pull it on hard!". This is due to there only being an 8:1 vang allowed by the class rules and the significant tension required to close in the large roached mainsail.

The outhaul should remain eased until overpowered, when it should be pulled on until the foot of the sail touches the boom.

Once the mainsheet is permanently eased (over 12 knots), the cunningham should be used to remove the horizontal creases that would have appeared on the luff edge of the mainsail.

**Over 15 knots:** The rig should now be raked back, with large amounts of vang, cunningham and outhaul tension. The boat can now be "feathered" easily, constantly playing the mainsheet over the leeward aft quarter of the boat.

When you are overpowered, it does not pay to reduce rig tension in an attempt to increase rake and depower.

## Downwind Sail Settings

**Under 6 knots:** Unlike most asymmetric boats, it seems the helm must sit to leeward and the crew to windward, both as far forward as possible. The outhaul can be eased 6" away from the boom and when trying to run deep, the centreboard can be raised halfway.

**6-15 knots:** The helm should stay to leeward until the boat is almost planing / surfing when the crew should move onto the thwart and the helm onto the windward side to increase control. The outhaul and the cunningham should remain eased. The RS200 is particularly responsive to being steered and pumped through waves to induce the surf / plane. The centreboard should be lowered to increase stability.

When reaching, always try to maintain vang tension to keep the boat in balance.

**Over 15 knots:** The helm must be to windward with the centreboard fully down. It can pay to have the crew on the windward side as well, even if trying to run deep.

Gybing in these conditions often requires a gybing strop on the boom.

When reaching it pays to sit well aft in the boat. If overpowered, ease the spinnaker sheet allowing the kite to permanently curl (this takes a lot of concentration by the crew) and pull on the outhaul and the cunningham, only easing the vang as a very last resort as this makes the boat unstable.

# RS CLASS ASSOCIATION

[www.rs-association.com](http://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](mailto: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](mailto: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

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

## EC DECLARATION OF CONFORMITY TO DIRECTIVE 94/25/CE

I declare that the craft described as:

# RS200

Bearing the Hull Identification Number:

HIN

G	B	L	D	C	2	1								
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**Conforms to** EU Recreational Craft directive 94/25/EC  
Annex 1 – sections 3.2 & 3.3 and Annex 6 – Module Aa

**EU Notified body:**

No. 0808 (Irish Sailing Assoc.)

Trade Marque: RS Racing

Type: RS200

Design Category: C

Maximum Crew: 3

Maximum load: 225kg

Iso Standards: ISO 12217

Overall Length

4.00m

Builder Name:

LDC Racing Sailboats, England

Date:

\_\_\_\_\_

Signed:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_