OWNER'S MANUAL

Version 2

CONTENTS

All terms highlighted in blue throughout the Manual can be found in the Glossary of Terms

Warnings, Top Tips, and Important Information are displayed in a yellow box.

1. INTRODUCTION

Congratulations on the purchase of your new RS100, 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 RS100 is an exciting boat to sail and offers fantastic performance. This manual has been compiled to help you to gain the maximum enjoyment from your RS100, in a safe manner. It contains details of the craft, the equipment supplied or fitted, its systems, and information on its safe operation and maintenance. Please read this manual carefully and be sure that you understand its contents before using your RS100.

This manual will not instruct you in boating safety or seamanship. If this is your first boat, or if you are changing to a type of craft that 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 RS Dealer, or your National sailing federation – for example, the Royal Yachting Association – will be able to advise you of a local sailing school, or a 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:

RS Sailing
Trafalgar Close
Chandlers Ford
Eastleigh
Hampshire SO53 4BW

Tel: +44 (0)23 8027 4500
Fax: +44 (0)23 8027 4800
Email: info@RSsailing.com

For details of your local RS Dealer, please visit www.RSsailing.com

2. EC CONFORMITY AND IDENTIFICATION

The RS100 complies with the EU Directive for Recreational Craft (RCD) which sets safety requirements for recreational boats sold in Europe. Each RS100 carries the CE mark to indicate this compliance. The CE mark is on the Builder's Plate in the cockpit. The Builder's Plate also includes important safety information which is described in detail elsewhere in this manual. Compliance with RCD is also demonstrated by the EC Declaration of Conformity in this manual.

A RS100 can be identified by the Craft Identification Number, which is a unique serial number on the starboard side of the transom, and is shown on the EC Declaration of Conformity in this manual. Each RS100 is also assigned a unique sail number, which is marked on the transom of the boat and on the CE Declaration, or can be obtained from RS Racing or your RS Dealer. Normally, it is a requirement that your sail numbers are displayed on the mainsail at sailing regattas. Sail numbers are supplied with your boat, and the instructions for application are in section 4.7 of this manual.

RS100 TECHNICAL DATA

Length Overall (LOA):	4.3 m
Beam:	1.83 m
Hull Displacement:	55kg
Unladen Sailing Displacement:	81kg
Main Sail Area:	8.4m² / 10.2m²
Gennaker Area:	12.5m²

DECLARATION OF CONFORMITY TO EU RECREATIONAL CRAFT DIRECTIVE 94/25/EC and 2003/44/EC

I declare that the craft described as:

RS100

Bearing the Hull Identification Number:

And Sail Number_____

Conforms to EU Recreational Craft Directive 94/25/EC and 2003/44/EC
Annex 1 – Sections 3.2, 3.3 & 3.6 and Annex 6 – Module Aa

EU Assessment by the Royal Yachting Association

EU RCD Notified Body:	No. 1681 Royal Yachting Association
ISO Standards:	BS EN ISO 10087, 12217, 12215, 10240, 14945, 8666
Trade Marque:	RS Racing
Type:	RS100
Design Category:	C
Maximum Crew:	2
Maximum Load:	175 kg
Overall Length:	4.3 m
Builder's Name:	RS Sailing, England
Date:	___ /___ / ___ (The date does not indicate date of manufacture)
Signed:	
	Alex Newton-Southon

3. SAFETY INFORMATION

- Before attempting to operate the boat, ensure that you have the appropriate experience to handle the boat safely in the anticipated wind conditions
- Ensure that all the crew have sufficient boating experience and are familiar with emergency procedures, capsize recovery, and towing
- 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 (e.g. a life jacket or a 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 a horn to attract attention in case further assistance is required
- The owner/helmsman is responsible for the safe operation of the boat
- The owner/helmsman's responsibilities include the proper preparation and maintenance of 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 RS100 is a Design Category C boat. A Design Category C boat may be sailed in conditions as follows:

Design Category:	C – 'inshore'
Description of Use:	Designed for use in coastal waters, large bays, estuaries, lakes, rivers
Wind Force:	Up to and including Beaufort Force 6
Significant Wave Height:	Up to and including 2 metres

The RS100 complies with this design category, subject to:

- The crew having suitable skill and experience
- Satisfactory maintenance of the boat and its equipment
- The crew adhere to minimum and maximum weights and number, as detailed in the Declaration of Conformity, and this manual.

Users of this boat are advised that:

- All crew should receive suitable training
- The boat should not carry more than the maximum load of 175kg
- The amount of water within the hull (i.e. inside the buoyancy compartment) should be kept to a minimum
- Any weight added to the mast will reduce the stability of the boat

3.2 Loading

Do not use with more than two persons on board.

Ensure that the combined weight of all persons on board, plus any added items, does not exceed 175 kg.

The RS100 is designed to be sailed by no more than two people. However, it is recommended that you do not exceed the maximum load of 175 kg, including any equipment added to the basic rigged boat. To enable the boat to be righted safely, the minimum recommended crew weight is 60kg. All the crew and equipment should be evenly distributed to ensure that the boat is upright and approximately level.

3.3 Safety Equipment

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

TOP TIP

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

3.4 Capsize Recovery

Please note that the following information is a suggested response to a capsize situation, and is not a substitute for an approved training course. For more information, please see www.rya.org.uk

REMEMBER
Keep hold of the boat when you are in the water

Like all small sailing dinghies, the RS100 may capsize when sailing. A 'capsize warning' symbol (the upside-down boat) is shown on the Builder's Plate to warn of this possibility. The RS100 is designed to recover quickly from a capsize, or inversion, and continue to sail without the need for bailing. The recommended technique for capsize recovery is described below. It is recommended to first practice capsize recovery on a calm day, with safety-boat cover.

Capsize Recovery

The RS100 mast contains foam to provide buoyancy so, if you are in the water, the boat will normally float on its side for a while after a capsize. As the boat capsizes, you should endeavour to fall cleanly into the water, trying to avoid catching sheets or toestraps as you fall. You should initially ensure that:

1. If you were using the gennaker when you capsized, that it is fully recovered in the chute before attempting to right the boat.
2. Make sure that the main sheet and the kicker are not in the cleat.

Swim round to the centreboard, grab hold of its tip, and pull down. The boat should start to right itself slowly at first, and then quite quickly. ***The RS100 is fitted with righting lines to help pull the boat upright from the water.*** As soon as it is the right way up, "heave" the gunwhale down to water level, and grabbing the toe strap pull yourself back into the cockpit. The wing has enough bouyancy to help this – but only really if the wind is still on the beam. If the boat is pointing into the wind, then climb in over the transom. Once you are back on board, check that the ropes are not caught on anything and then you can continue sailing.

Dry Capsize

If you know that you are about to capsize, you can climb over the gunwhale and onto the centreboard as the mast hits the water. If you fail to slide over onto the board, the nimble sailor may try the “boom walk” – to get to and step on the mast to enable you to hop over onto the board.

Then, as the boat starts to right itself, climb back into the centre of the cockpit. This can be quick and you remain dry, but if you stay on the capsized hull and are not quick to move out, your weight may cause the boat to invert.

Capsize Recovery From Inversion

If the boat does invert, you will probably end up in the water outside the boat. In this case, climb onto the hull and grab the centreboard, When righting the boat from inversion, more leverage can be gained by standing up in the inverted gunwhale, and pulling on the tip of the centreboard. As the boat starts to right and the mast is nearing the surface, try to haul yourself up onto the board, and from there right as if a dry capsize. Failing that right it with the aid of righting lines, and get back in the boat as normal from the water.

If you come up under the boat just after it has inverted, you will find plenty of air and head space in the cockpit. However, this situation can be a worry for the safety-boat crew as they cannot see where you are and you should also be aware of the dangers of entrapment, so quickly duck under the cockpit side to the outside of the boat to show that you are OK. If you are tired or cold and need assistance, climb onto the upturned hull and wave to attract assistance.

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. You should ensure that you are well clear of the hull as the boat fully inverts. Remember to keep hold of a rope that is attached to the boat, i.e. the main sheet.

The RYA recommends that dinghy sailors involved in a capsize should always consider going straight to the centreboard or dagger board to prevent inversion and then allow time and opportunity for any entrapment to be resolved by those involved or by patrol boat crews.

WARNING

If the mast is lying into the wind during a capsize recovery, the boat will flip up quickly and may capsize again. In this situation, be prepared to climb in and balance the boat quickly, or be prepared to avoid being caught under the gunwhale as it comes up and capsizes again towards you.

3.5 Air Tank

The RS100 is equipped with a sealed buoyancy compartment, 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 the class rules to add any fittings, although you may have to replace fittings from time to time. Ensure that all fastenings are resealed properly using**

Importantly, it should also be noted that there is a hole drilled right through the hull beneath the mast pot, specifically to drain it when the boat is ashore. It is designed to be there and is located in a solid part of the hull laminate. So expect to see water seeping out of it for the first few minutes ashore.

Always remember to check that there is no water in the hull and that the bung is secure in the drain hole before launching.

3.6 Man Overboard Prevention and Recovery

Working Deck

The working deck of the RS100, which is intended to be occupied when the boat is afloat, is the area covered with a non-slip coating. This area includes:

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

Crew Overboard Recovery

The RS100 is designed to be sailed by up to two people. However, it is usually sailed single-handed. If sailing alone, it is recommended that you ensure adequate safety cover is in attendance before launching. To minimise the risk of falling overboard, never stand up in the boat or sit on the decks – other than the side deck to balance the boat – when the boat is under way. Should you fall overboard when sailing alone, the boat will soon capsize allowing you to swim to it and follow the capsize recovery procedures described in Section 3.4.

If a crew member falls overboard while there are two people sailing, the person on board can assist recovery by manoeuvring the boat back to the person in the water, stopping the boat by turning the boat into the wind, and helping to balance the boat as the other person climbs back in. To recover a crew member from the water:

1. The helm should stop the boat just downwind of the person in the water.
2. The helm should balance the boat, using a combination of body weight movement and sail pressure.
3. With the help of the person on board, the crew should board the boat via the windward gunwhale, or over the transom using the toe strap to help to pull themselves in.

TOP TIP

If you attend an approved sailing instruction course, you will learn how to recover a man overboard quickly and effectively. Please see www.rya.org.uk for a list of recommended institutions.

3.7 Use of an Outboard Engine

The RS100 is not designed, equipped, or capable of modification for use with an outboard engine.

3.8 Towing, Anchoring, Mooring, and Trailing

Towing on the Water

We recommend the following procedure for towing your RS100:

1. Secure the towing line around the base of the mast. If the mast has failed, secure the towing line around the inboard end of both forward toe straps.
2. Lower and stow the mainsail.
3. Partially raise the centreboard.
4. Stay at the tiller. In the event of rudder loss, sit well aft.

Anchoring

The RS100 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 not alternative to anchoring, the anchor line should be secured round the base of the mast 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 downward.

Mooring

The RS100 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 Your RS100

The RS100 can be trailed behind the majority of cars. When trailing your RS100, you should only use an approved trolley and road base. Care must be taken when tying a boat to its trailer as too much or too little tension could result in damage. We recommend the following procedure for safe trailing:

1. Ensure that the boat is located on the trolley, with the gunwhale supports up under the gunwhales and with the bow securely in the bow snubber of the trolley.
2. Ensure that the trolley is properly located on the road base, and that the retaining pin is fitted.
3. Tie the boat down to the road base, at the bow using the eye under the bowsprit, and across the middle. You only need to apply firm tension to hold the boat in contact with the trolley supports. Tie the boat down at mid section

TOP TIP

Remember to tie the boat down when it is left in the dinghy compound, to prevent damage in

with a strap anchored down and ideally looped around both the trailer roller and trolley base cross member. This ensures the boat is tied to both the trolley and trailer. Use padding material where any straps touch the deck.

4. COMMISSIONING

4.1 Preparation

Your RS100 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
- Pozi-drive screwdriver
- PVC Electrician's Tape

Should your RS100 require roping out, you will also need a 3mm splicing fid, and the supplementary instructions. If it has already been roped out and prepared, it is still wise to check knots and lashings, and tighten shackles yourself prior to commissioning. This is especially important when the boat is new, as travelling can loosen seemingly tight fittings and knots. It is also important to check such items regularly prior to sailing.

You will also need to tie some particular knots, such as a bowline or a figure-of-eight during regular rigging. If you are unfamiliar with the knot, please see Appendix 9.3 Three Essential Knots.

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

4.2 Rigging the Mast

Your RS 100 mast consists of 3 component sections: The short base section is used only in conjunction with the 10.2m sail, and if you are using this sail, then insert this short base section into the lower main mast. The mast base plug is already supplied attached to this base section. However, if you are using the 8.4m sail you will need to extract the mast base plug and plug it into the base of the lower main mast. *Whichever sail you use it is wise to tape the base plug onto the mast – so that it remains in place when the mast is taken out of the boat.*

8.4m sailors should stow the short base section safely – whilst you do not need to use it, you will need it for resale of the boat or of course if you wish to use the 10.2m sail

Now slide the 2 main mast sections together, taking care to push them fully together, which should ensure the mast track sections are properly aligned. The photo on the left shows short mast base section used with the 10.2m sail with the heel plug. Remember to tape the heel plug in place.

Rigging the main halyard:

The main halyard should be threaded around the top sheave, inside the mast briefly and out through the slot on the front of the mast, above the cleat – both sited close to the top of the mast.

Tie an overhand knot in the end of the halyard that will tie to the sail (aft of the mast), and tape it to the mast about 20cm above the relevant gooseneck hole (10.2m – lower hole / 8.4m - upper hole). This will enable you to locate the Inglefield clip correctly as follows: slide the spare clip onto the fwd section of the halyard, and slide it all the way up to the top of the mast, and then tie an overhand knot to locate it there.

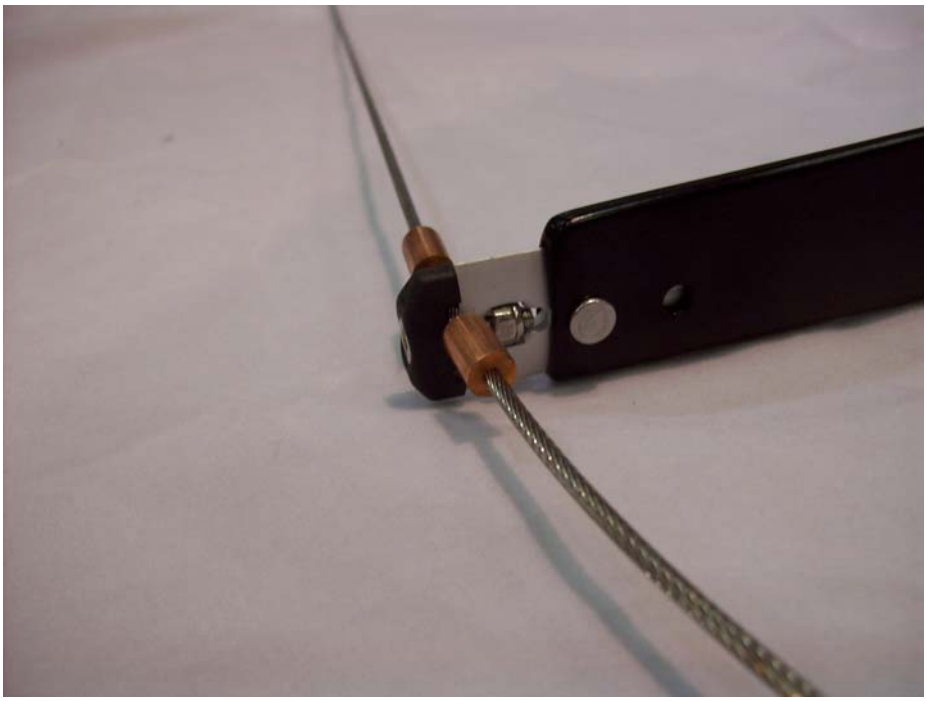
Thus as you hoist the sail and the knot (currently taped to the mast 20cm above the gooseneck), ends up at the top of the mast with the sail, your Inglefield clip will end up lower down, just above the gooseneck, ready to be clipped to its partner attached to shockcord and emerging from the port side of the mast gate organiser. That is how your main halyard will be retained when you are sailing.

Rigging the shrouds, spreaders and spinnaker hoist block:

The shrouds should be shackled to the lower mast eye (10.2m), or the middle mast eye (8.4m) and the spinnaker hoist block shackled to the middle mast eye (10.2m) or the upper mast eye (8.4m), as in the photo below. The top ends of the shrouds to be shackled to the mast are marked with black tape around the terminals. Ensure these are correct otherwise it will be impossible to rig correctly.

Now slide the spreaders onto the spigots on the rotating bracket, blunt edge facing forwards, and insert the 4 locating pins, and split rings to secure. ***A key tip here is to tie a short piece of 2mm shockcord – about 200mm long - to the inner split rings here, forming a captive loop through which the kite halliard is lead going down the mast on the hoist – this stops it ever blowing out and getting caught around a spreader end***. See photo below. Now tape up these pins and rings to protect the spinnaker in use.

Using the pozidrive screwdriver loosen the screws in the end of the spreaders to enable the shrouds to be attached. Double check the shrouds are the right way up by pulling a shroud tight down to the spreaders (whilst the spreaders are rotated centrally on the mast) and checking the spreaders can be clamped between the pair of ferrules. Now insert the shrouds into the aft setting on the spreader ends, siting between the relevant ferrule pair (upper pair 10.2m, and lower pair 8.4m). **Check with the photo below**: Now tighten the screws again and finally check the shrouds are not twisted from shackle to spreaders. They should not be too slack.



Take the gennaker halyard from where it exits on top of the mast gate organiser and thread it through the hoist block that is above the point where the shrouds attach to the mast. Run the gennaker halyard back down to the base of the mast, passing through the little shockcord retaining loop at the spreaders. (if fitted).

The mast is now ready to be stepped.

4.3 Stepping the Mast

Before you step the mast, check that the main halyard and gennaker halyard ends are near the base of the mast. Also, check that the bottom of the mast well is free from any debris and sand that will cause premature wear of the mast well. Likewise ensure the mast base plug is free from sand and grit, and taped in place.

The RS100 mast only requires one person to step it. However, if you are stepping it for the first time, or if it is windy, it would be wise to have another person with you in case of any difficulty.

1. Stand the mast upright beside the boat. Remember to keep the base plug clean
2. Lift the mast up and pass the base of the mast through the hole in the mast gate organiser.
3. Pass the mast down, until it reaches the bottom of the mast well. Take care to avoid all lines and shockcord as it passes the gennaker sock, and ensure the recess in the base plug sits securely over the steel peg at the bottom of the mast well. The mast will now stand up on its own.
4. Wind the mast gate to the furthest aft position. This will ease the pinning of the shrouds – usually around hole 2 or 3 – but as far down as you can easily get without help. Now as you wind the mast gate back to a central position, you will find the shrouds are gently tensioned.

HINT

A central position for the mast gate is a good starting point, but further aft (more mast rake) helps in the breeze and further forward (less mast rake or more upright) helps in the light winds. It is worth remembering that more mast rake will mean less room under the boom when tacking and gybing!

Useful tip:

Your mast will come with a band of very light stainless steel or some high-resistance ware tape at deck level – this is advisable to stop ware on the mast at the deck collar. The tape is easily replaceable and also helps to reduce any “slop” in the mast gate. Useful to make sure you have a couple of lengths in the toolbox!

4.4 Rigging the Boom

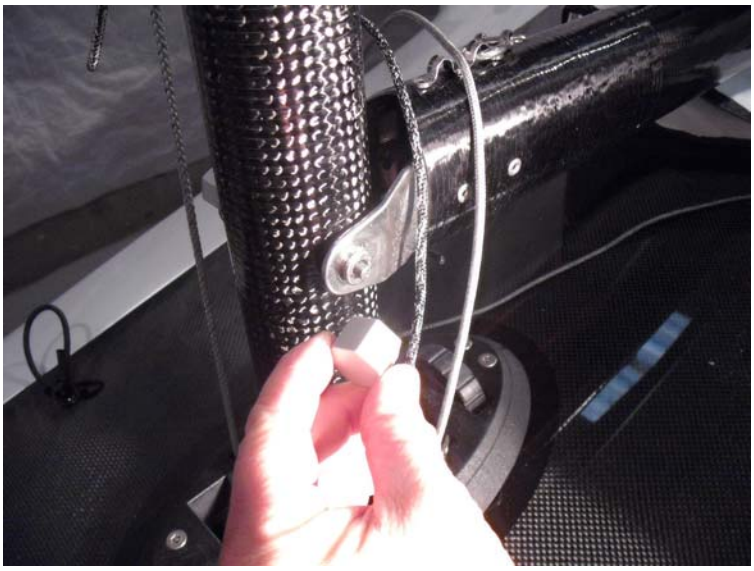
To thread the mainsheet:

1. Lead the mainsheet through the centre jammer cleat and ratchet block (making sure that the rope is threaded through the ratchet block the correct

way, so that it ‘grips’ the rope when the sheet pulls out and runs freely when you pull the sheet in).

2. Lead the mainsheet through the block in the middle of the boom.
3. Thread the mainsheet through the 2 loops riveted to the underside of the boom and through the block at the aft end of the boom, and down to the mainsheet bridle that spans the back of the boat.
4. Ensure the bridle block is aligned as it would whilst sailing, and pass the mainsheet from fwd to aft through the block.
5. Finally, pass the end of the mainsheet through the hole in the underside of the boom and secure inside with a stopper knot.

The boom can now be bolted to the mast. Offer the boom jaws up to the mast, and as you do so lift the kicker and Cunningham control lines over the boom as in the **photo below**. Now locate the boom jaws either side of the mast – aligned with the gooseneck holes, and push the boom bolt through the boom jaw and mast and out the other side, through the other side of the boom jaw. Now firmly screw the head of the boom bolt home to secure the boom. ***The Gnav arms and roller should be sitting astride the mast marginally above the boom, with the control lines over the boom – see photo below:***

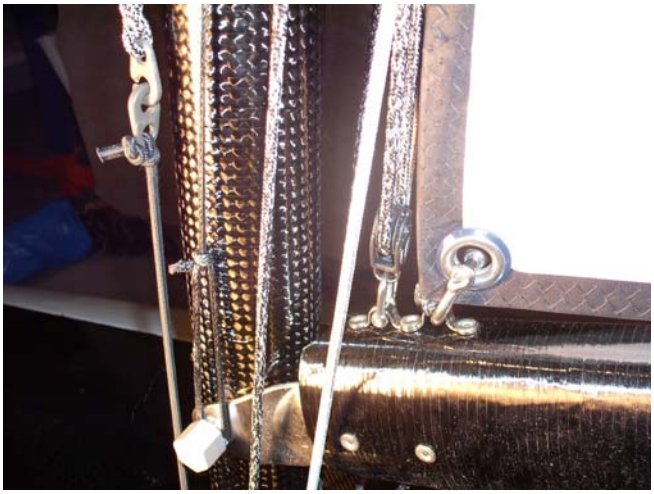


4.5 Hoisting the Mainsail and rigging the control lines.

TOP TIP

Only hoist the mainsail when you are ready to go afloat, as this will prolong the life of your sail and prevent any possible damage occurring while you are away from your boat.

1. Unroll the mainsail and attach the clew to the boom using the Velcro clew strop provided on the sail. This should be tensioned such that the foot of the sail will rest a few mm clear of the boom when in use. ***NB: the 10.2 sail clew strap is positioned aft of the mainsheet block, and the 8.4m sail clew is positioned forward of the mainsheet block.***
2. Feed the outhaul through the clew of the mainsail and thread it back through the hole in the end of the boom. ***The 8.4m sail will need the entire length of the outhaul line, leaving a small tail at the cleat, whereas the 10.2m sail will have a long tail at the cleat which should either be suitably shortened or plaited to ensure it is neat and tidy in use.*** As a guide about 150-200mm tail is useful when the outhaul is fully eased. This relates to about 120mm between the boom and the foot of the sail. This is a maximum, whereas the minimum (when it is windy) would be the foot of the sail pulled tight along the boom.
3. The tack of the mainsail should now be shackled to the forward end of the boom – ensure the sail is passed in between the gnav arms, and shackled to the aft lacing eye and ensure the control lines (kicker/gnav control and Cunningham) are free forward of the sail.



4. Tie the main halyard to the head of the mainsail, using the “knot on a knot” method. See the photo at the back of this manual – “knots”.
5. Hoist the mainsail, ensuring the boat is head to wind, by pulling on the end of the main halyard that runs down the front face of the mast. Gently guide the luff of the sail into the sail feeder, as you do so, as the elasticated boltrope can jump the sail feeder easier than a standard solid boltrope.
6. Hoist the main nearly to the top, say 500mm short, then fix the control lines as in 7 and 8, prior to the final hoist to the top. When the mainsail is hoisted to the top of the mast, cleat the main halyard in the cleat located on the front face of the mast.
7. Now you should shackle the kicker control block to the forward eye on top of the boom, and then pass the 2 gnav roller lines attached to the blocks, over the roller – from aft to forward – in the grooves in the roller, and down to loop over the gooseneck pin ends to secure***. Ensure that with the mainsail fully hoisted the blocks on the end of the gnav roller lines are pulled right up to the roller – see the photo below: You might need to adjust the lines in the process: This will ensure you have maximum “travel” in your kicker/gnav system.***

8. Now feed the Cunningham line up through the sail and back down to tie onto the aft eye on top of the boom. ***Again ensure the Cunningham block is up by the sail eye, to ensure you have maximum travel.***
9. Now finally you should stow the main halyard - clip the Inglefield Clip on the tail of the main halyard to the Inglefield Clip attached to the piece of shockcord on the deck near the base of the mast. This will tension the tail of the main halyard
10. Finally coil up the tail of the main halyard and stow it in the small pocket sewn onto the tack area of the mainsail. Ensure it is led inside the spinnaker halyard.

Top tip:

It is useful to have the kicker and Cunningham rigged such that the last 250mm of mainsail hoist is effectively bending the mast even with the kicker and Cunningham eased to the maximum. This gives you all the travel you will ever need.

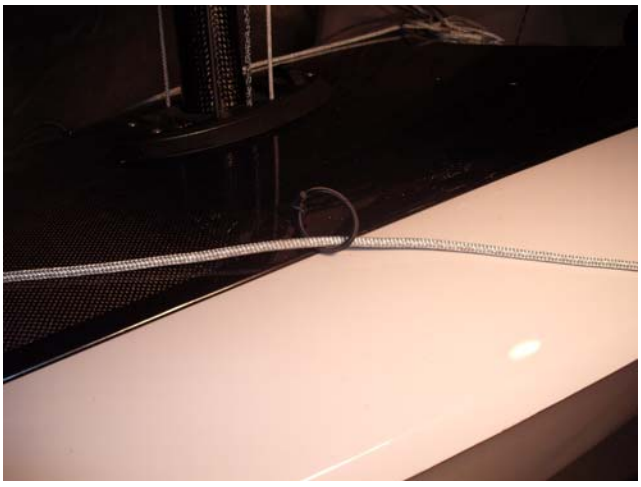
4.6 Rigging the Gennaker

To rig the gennaker:

1. Take the tack line that emerges from the end of the bowsprit, and tie it to the tack of the gennaker***. If this is tied to the gennaker halyard that emerges from the chute, ensure you do not lose the halyard back up the chute – perhaps tie it to the trolley handle***
2. Tie the end of the gennaker halyard that runs from the top of the mast to the head of the sail.
3. Take the tail end of the gennaker halyard that runs from the gennaker chute (which you might have tied to the trolley handle) and pass it:
    - Through the ring on the lower patch in the middle of the gennaker
    - Then tie the halyard off to the loop of webbing on the top patch of the gennaker***. There is a little stopper ball supplied that should be on the halyard between the patches. This will ensure the knot never***

gets stuck in the lower ring, thus stopping the kite from properly hoisting.

4. Find the middle of the gennaker sheet by folding it in half.
5. Pass the middle of the gennaker sheet through the metal eye in the clew of the gennaker.
6. Pass the rest of the gennaker sheet through the loop and pull tight.
7. Pass the sheets through the shockcord retainers emerging from the foredeck either side of and adjacent to the mast.



8. Thread the gennaker sheet through the ratchet blocks on the side decks and tie the two ends together. Ensuring that you pass the sheets aft of the mainsheet base.
9. Using the gennaker downhaul, and pulling from aft of the halyard block, pull the gennaker down into the chute.

TOP TIP

Although it may be tempting to leave the gennaker in the chute, it is better if it is left to dry and folded properly if stored for long periods of time.

4.7 Attaching Sail numbers

The sail numbers come with your boat in the “owners pack”, and will be found with an instruction sheet. The National letters supplied should be put on to the sail in the panel below the numbers, by following the same instructions, ie measure in 100mm from the edge and 70mm down from the batten pocket, and mark up the sail, then fix the letters as you did the numbers.

4.8 Completion and launching

Rudder:

Firstly pass the tiller and extension under the mainsheet bridle – you will need to check that the tiller extension is free to rotate forward of the bridle. Now simply slot the rudder gudgeon and pintle onto the transom pintle and gudgeon and ensure that the rudder-retaining clip has located properly; it will ‘click’ in place. Check that the rudder is fitted correctly by simply lifting the rudder to see if it lifts off. Hold the rudder in the up position and tighten the rudder bolt to hold the rudder in position. The rudder may be stiff at first; this will ease up with use while still maintaining a positive, non-sloppy feel.

Launching:

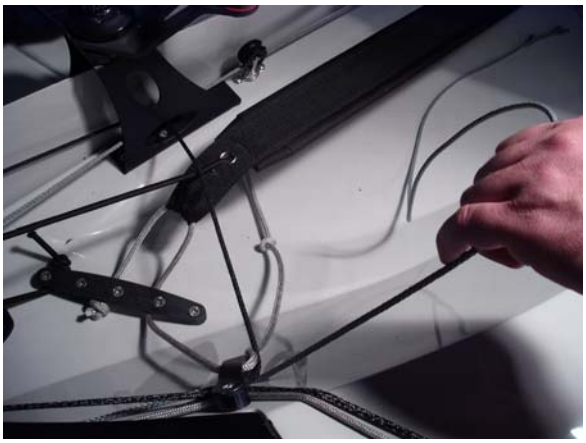
Now you are ready to launch your RS100: As you float the boat off the trolley, you will need to smartly grab the gunwale or shroud, to ensure the boat remains upright, and does not float away. It is helpful at this stage to have someone to help take the trolley.

When you have launched the boat, loosen the rudder bolt and pull the rudder down a fraction using the rudder downhaul line. Push the bow off the wind and hop in – often easiest over the transom as the side deck is wide. Sail off into deeper water. You will not be able to sail the boat hard as this will damage the rudder. When you are in deep enough water, pull hard on the rudder downhaul line and cleat it. Tighten the rudder bolt to take any play out.

Centreboard

It is helpful to lower a small amount of board prior to getting in – if sufficient depth of water. To do this you pull on the board downhaul which emerges either side from the mainsheet turret

When you have sailed into deeper water, lower the board fully – as far as the down as the system allows. To raise the board pull on the uphaul which emerges from the “multilead”, positioned under the toestrap cleat.



5. SAILING HINTS

5.1 Introduction

The RS100 is a new breed of single-handed dinghy with an asymmetric gennaker – it will feel different to sail compared to many other boats. It will be a challenge to

learn to sail the boat to its full potential, let alone handling the asymmetric gennaker. Therefore, you will find it a lot more enjoyable if your first few sails are in a moderate breeze to enable you to concentrate on sailing the boat and not just trying to survive. Most importantly, it will take you time to get used to the boat, as with any new boat. So, take your time and get used to the basics again!

5.2 Tacking

Tacking the RS100 is much the same as any single-handed dinghy. Some tips to bear in mind are:

- Make sure that the boat is level and sailing as fast as possible before initiating the tack.
- Be prepared to ease the mainsheet enough as the boat comes onto the new tack so that the boat does not heel or is blown head to wind.

5.3 Gybing (mainsail only)

Always gybe with the boat sailing as fast as possible. In breezy conditions the helmsman should steer back into the gybe as the boom comes across, so that the boat is travelling straight downwind as the mainsail fills with wind on the new side.

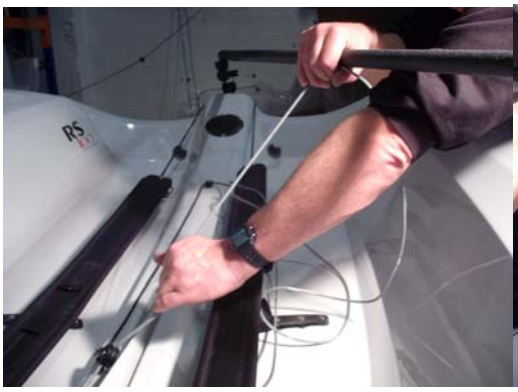
5.4 Sailing with the Asymmetric Gennaker

Sailing with an asymmetric gennaker is where all similarity to existing single handers ends, and where the real fun begins! Don’t be too hasty to get the kite up – it makes sense to have familiarised yourself with the boat and the angles of sailing downwind when hoisting or dropping the kite. For the first trial, the wind should be no more than 10-12 knots.

Hoisting the Gennaker

To hoist the gennaker, bear off onto a broad reach and ensure that there is plenty of room to leeward. Ease the mainsheet right out and cleat it, so that the boom is nearly touching the shroud, and ensure that the kicker is eased as usual for downwind sailing.

Pull on the gennaker halyard to hoist the gennaker as quickly as possible. This can be done from sitting on the inner edge of the side deck, and keeping hold of the tiller extension. ***There are 2 distinct techniques to do this – either simply by using your forward free hand – or by using a "hand over hand" technique, whilst still keeping hold of the tiller – see photo for an idea.***




Now pick up the gennaker sheet and pull tension on so that the wind fills the gennaker. Head up slightly to gain speed. You will probably need to grip the gennaker sheet in your tiller hand while you pull the mainsheet back in to the new point of sailing. For those of you familiar with asymmetric sailing, you will remember how important it is to ease the kite as far as possible, so that the luff is constantly on the verge of curling. An over-sheeted kite is such a killer to speed. Conversely, nothing will drop you in the drink faster than a collapsing kite – so forget the mainsail and stay sharply focused on the luff of the kite! ***It is helpful to make sure the mainsheet is resting next to you on the side deck, so it is to hand when you need to adjust.***

Gybing

To gybe the gennaker, bear off while continually easing the gennaker. Put the gennaker sheet in your tiller hand and reach in to uncleat the mainsheet. The quicker you do this the better, as the boat will have slowed down and the mainsheet will have loaded up – you'll get to know this feeling and react to it faster each time!

While sailing on a broad reach, pick up the windward gennaker sheet with your front hand and pull it in and take up the tension – even gently pulling the clew of the gennaker to windward. You are now holding both sheets in one hand.

The gennaker should still be filling normally and helping to speed the boat into the gybe. As you initiate the gybe, step across the boat, pulling the new gennaker sheet in as far as you can to ensure that some wind remains in the gennaker throughout the manoeuvre, and avoiding a collapsing gennaker. ***Once you are on the new gybe, with the kite having stayed full you might even need to ease the new sheet again to trim properly. (You will be amazed at how little you need to pull the kite with practice).*** You can now head up again as required – adjusting the mainsheet again as before.

You should remember to keep maximum speed on into the gybe – it reduces the load in the mainsail – ensuring the long boom comes across with the minimum of drama!

Dropping the Gennaker

To drop the gennaker, bear off and ease the mainsheet exactly as you would when hoisting the gennaker. Pick up the gennaker downhaul and pull in the slack. Keeping hold of the downhaul – holding it low down - reach over to release the gennaker halyard from the cleat and then pull the gennaker down as fast as you can, using the same system as you have got used to for the hoist. Tidy the gennaker sheets, by pulling on the sheets to take slack out.

Warning: if you pause, and the gennaker goes in the water, it will be much harder, and may result in a capsize. Once the gennaker is largely in the chute you are safe!

6.0 Tuning guide

1. Rig concept: Upwind.

In common with many unstayed rigs the RS100 is very versatile in terms of both power and responsiveness. Where the RS100 (and also the RS300) vary is in the operation of the Gnav/kicker: Apart from controlling the leech as normal, it also bends the mast more, progressively flattening the sail: Think of it as doing these 2 functions equally effectively, **but as it is easily the most effective mast bend / sail flattening control, this is how you should think of it primarily:** As you tension the Gnav/kicker, so the rig progressively flattens, and progressively reduces power.

Two other key controls help you to mesh required leech tension (or degree of twist) with your mast bend and gnav/kicker tension. These are the mainsheet (used mainly in the light and hopefully self-explanatory) and the Cunningham (crucial to blading out the top of the leech in breeze). Try playing with the Cunningham – eased right off the leech rounds up with the fullness further aft - and that's power and pointing when you need it. Pulled on hard (and in good wind do not be afraid to really heave), fullness will pull forward and towards the top of the sail it will flatten and open the leech, thus depowering the rig. The leech will even go "floppy" with extreme tension – so understand the "cunno" and make it your friend!

The boltrope of the sail is elasticated to assist easing up the track more easily when released – but what will also help is lubricating the track , and when sailing, easing the sheet (or tacking) so the luff panel flaps, reducing friction momentarily in the track:

A further, but very minor, control on mast bend and leech shape is the spreader length – for the bigger guys longer spreaders help support the mast (primarily sideways) which in turn supports the leech – thus powering up slightly.

The secret to getting the best out of the RS100 rigs is to understand the versatility and being practiced at "changing gear".

2. **Control set-up:**

1. Main halliard: It is absolutely essential to ensure the sail is hoisted fully and stays there: Tie the halliard to the sail with a "knot on a Knot" as per the manual, and pull it really hard before ensuring it is located firmly in the cleat.

2. The mainsheet bridle: Holding it vertically, 400mm, also vertically, from top of rudder turret to apex of bridle: the bridle is just fwd of the rudder turret, so sight in line from tape measure to apex of bridle. The other way is to pull the bridle fwd on the centreline of the boat and apex of bridle (not the block) should come to 60mm aft of the non-slip edge: then the knots should be positioned 430mm from the point at which the bridle goes through the transom flange.

Another check here is that the bridle block should align with the cockpit floor/sidetank corner when in use and lying against the knot.

Conceptually the bridle has to be flat enough for the block to travel out to the knots all the time, thus giving you a consistent inner most sheeting angle. Much narrower and the rig will feel stalled, and wider and you will struggle for height in the light –medium windstrengths

3. Cunningham: This should be rigged for maximum travel: When the sail is fully hoisted the cunningham block should be adjacent to (even slight pulled into!) the cringle. When maxed-out (certainly on 10.2) it will still be right down to the boom.

4. Gnav/Kicker: Again rigged for maximum travel: Set up the lines so the blocks are up by the roller when the sail still has 6-9 inches to hoist: Thus the final hoist will slightly bend the mast – that is fine as you will use more mast bend than this even in

the lightest of wind. It makes the most of the travel – which (certainly on the 10.2) will be needed in full.

5. Mast gate control / Rake: The RS100 was designed to use a different "range" of settings for the 10.2 and the 8.4: The 8.4 is effectively the "stiffer" rig (less leverage and load put onto it generally), and was designed to be set up with a little more rake: So 8.4 sailors should use the aft 2/3rds of the range, and the 10.2 sailors the fwd 2/3rds of the range: Generally more rake appears better in the breeze and less in the light, but remember it is not quite so important with a flexible rig like the RS100, and you have to get under the boom! For example, as I am fairly un-flexible these days, I never rig aft of the middle setting when on the 10.2, as one bad tack getting stuck under the boom on maximum kicker can easily end in a capsize!

6. The shrouds – or "rig tension": Although the shrouds are primarily for keeping the rig in column downwind with the kite – it definitely does add some support via the windward shroud: Key point here is that the windward shroud is almost always in some tension sailing upwind, whereas the leeward one is really waving around in the breeze. Thus, to date it looks better to have less tension in the light , more in the light/medium and less or same again in a breeze. Tension is in real terms negligible, but at most will pre-bend the mast by upto 25mm – without the sail hoisted with 10.2, and less on the 8.4 sail: Adjust the holes in the chainplate for the different mast rakes as per the table below.

7. Outhaul: Both sails are fairly full, with plenty of luff round, so the outhaul is generally tighter than say a Laser sailor might be used to: also the gnav arm restricts it anyway – so a maximum of 6-7 ins off the boom is all that is ever needed, and mostly a lot less:

Wind	Mainsheet	kicker	Cunningham	Outhaul	Mastgate	Shrouds
1-4 knots	Outboard of bridle knots	15% - enough to take out luff round	Zero	3-4 ins off the boom at midpoint	8.4 – mark 6 10.2 – mark 4	8.4 – hole 3 10.2 – hole 2
5-9 knots	Taking leech tension on sheet – vertical above bridle knots	15-40% - enough to hold tightish leech if eased sheet	Only enough to remove the wrinkles for the cameras!	5-6 inchs – we are after max power here.	8.4 – mark 4-5 10.2 – mark 3	8.4 – hole 3 10.2 – hole 3
10-14 knots	Outboard of the bridle knots – play it vigourously	60-85%. Ease it offwind	40-70%. If you overcook it you will lose pointing.	2-4 inches – a chop will need power	8.4 – mark 4 10.2 – mark 2-3	8.4 – hole 4 10.2 – hole 3
15-20 knots	Transom corner or further outboard – play it vigourously	100% - get it flat.	80-95%. Leave some in reserve – lets not lose the leech altogether.	2-3 inches – some power low down will help.	8.4 – mark 5-6 10.2 – mark 3-4	8.4 – hole 4 10.2 – hole 3
20+ knots	Well outboard all the time – keep the boat moving.	90% - ease it a bit to make it more forgiving – cunno will keep flat	100%+ - head could go floppy in the gusts! Only use bottom half of the sail!	1-2 inches – you can pretty much heave on it!	8.4 – mark 7 10.2 – mark 4-5	8.4 – hole 4 10.2 – hole 4

The above table is really for guidance only. I would urge you to work at understanding the concept of the rig design as detailed above, and then think about your own individual settings

8**. The centreboard**: generally speaking it should stay all the way down, all the time: In a breeze upwind it may help to raise it a few degrees, and downwind in the real light gains possible may be made by raising it 30-50% to aid soaking – definitely only sub 5-6 knots of breeze.

3. Rig concept - Downwind

There will be times when the tactical decision is to leave the kite in the chute – and at these times all those of you with previous singlehander experience will be fine – and I will not aim to cover all those eventualities here, but a quick remember about the cunno – ease loads, and don't over kicker - too flat is not too fast on a white sail reach:

But downwind of course is really about the kite!! And it always helps to understand whats going on: The leech of the kite does twist and that should as far as possible be emulated by the leech of the mainsail: ***and that means ease the kicker – loads and loads:*** that will then allow you to sheet in a bit and help to open the slot between kite and main. A tight leech will knock you over, whilst stopping the kite really working properly!

Another key point to remember is the power to weight ratio of this boat is right up there – it will respond to "heating it up", apparent wind thus creeping fwd which again is why the main will want to be sheeted in a bit – it will be quick, but you might need to hike out! Just remember – when you go for the drop, ease the mainsail – as it will very quickly load up again as you slow down:

A final point about the kite halliard – it should be no more than 16metres long and when the kite is stowed the halliard take-up block should end up (under good tension from healthy shockcord) half-way between the back of the centreboard casing and the cheekblock attached to the deck.

7. MAINTENANCE

7.1 Boat Care

The RS100 is made using an epoxy laminate. This is stiff and light, but will dent if subjected to point loading. The boat should be supported ashore on a recognised RS trolley and care must be taken when launching and recovering to avoid damage to the transom. When 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. Water absorption could cause blistering and a raised fibre pattern.**,**

It should also be noted that there is a hole drilled right through the hull beneath the mast pot, specifically to drain it when the boat is ashore. It is designed to be there and is located in a solid part of the hull laminate. So expect to see water seeping out of it for the first few minutes ashore.

Keep your dinghy drained and well ventilated

- Ensure that the boat is stored with bow raised to allow any excess water to drain away.
- If leaving the under cover on the boat, ensure that the transom is open for drainage and that there is a hole below the centreboard 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.

Hull damage falls into three categories:

- **SERIOUS –** large hole, split, crack or worse. Don't be too distressed! Get the remnants back to RS Repairs – most problems can be repaired.
- **MEDIUM –** 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 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 laminate are fit for the prevailing conditions. Get the damage professionally repaired as soon as possible.
- **SMALL –** Voids, chips, scratching. This type of damage is not boat threatening, and being epoxy, water absorbtion is minimal, even over time. The damaged area should be covered with a waterproof tape until the damage is fixed. The owner can repair this type of damage using the correct RS gel coat.

The chute mouth might show small grooves in time where the kite halliard bears on the carbon – these are nothing to worry about and are normal but will need to be filled every couple of years or so.

As with any modern sailing dinghy, the loads on blocks and ropes can be quite large. As part of your rigging and de-rigging each day you should check over every part of the boat for worn blocks and rope, twisted or bent shackle pins, and any other highly loaded parts.

7.2 Foil Care

The foils are epoxy glass laminate with a foam core. Look after them as you do the hull. Wash with fresh water regularly. Should the foils become chipped or broken, they will not absorb water. However, they are difficult to fix.

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

7.3 Spar Care

The mast, boom and bowsprit are carbon tubing. It is advisable to apply a coat of varnish every 2 years. This protects the laminate against UV degradation in sunlight. Lightly sand the mast to help the new varnish bond to the surface. Wash with fresh water as often as possible, both inside and out. Check all the riveted fittings and the masthead sheave on a regular basis for any signs of corrosion or wear.

Access to the pole outhaul block is very easy – release the Velcro from the bow area and pull back – the fastening of the front of the chute is similar to a boltrope fed into a groove on the rear end of the bow plate – it can be pulled out easily:

The mast will ware at the mast gate if not protected by a pad – the high ware protective tape and ultra thin stainless pads are available as spares – it is recommended that these are replaced every year:

7.4 Sail Care

The mainsail should be rolled and stored dry, out of direct sunlight. Dry the gennaker, fold it and store it in its bag.

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

If your sail is stained in any way, try to remove the mark using normal detergent and warm water. **DO NOT** attempt to launder the sail yourself.

Repairs should be temporarily made using self-adhesive Dacron, Mylar, or gennaker repair tape (depending on sail type). The sail should be returned to a sail maker for a professional repair. Check for wear and tear, especially around the batten pockets and boltrope, on a regular basis.

8. WARRANTY

1. This warranty is given in addition to all rights given by statute or otherwise.
2. RS Sailing 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 RS Sailing. Any changes to the hull structure, deck structure, rig or foils without the written approval of RS Sailing will void this warranty.
5. Warranty claims for materials or equipment not manufactured by RS Sailing can be made directly to the relevant manufacturer. RS Sailing warrants that these parts were installed correctly and according to the instructions provided by the manufacturer.
6. Warranty claims shall be made to RS Sailing 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 RS Sailing.
7. Upon approval of a warranty claim, RS Sailing may, at its expense, repair or replace the component. In all cases, the replacement will be equal in value to the original component.
8. Due to the continuing evolution of the marine market, RS Sailing 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.

9. APPENDIX

9.1 Useful Websites & Recommended Reading

Royal Yachting Association www.rya.org.uk

RNLI – for help and advice about safety at sea – www.rnli.org.uk

RS Class Association and Manufacturers:

www.rs-association.com

www.rssailing.com

9.2 Three Essential Knots

Bowline

The bowline is a reliable knot used for tying a loop in rope. It is extremely strong when under load, and unties easily once free of load. Some people use the rhyme “the rabbit comes out of the hole, round the tree, and back down the hole” as a way of remembering how to tie a bowline.

Take the end of the piece of rope and assess how big a loop you require

Make a small loop in the rope

Take the tail and lead it up through the loop

Pass the tail around the standing rope

Thread the tail back through the loop, and tighten

Knot-on-Knot

A ‘knot-on-knot’ is useful for tying the end of a rope to a sail or a fitting, and is particularly reliable due to the manner in which the rope binds upon itself.

Tie a single overhand knot in the end of the rope. Feed the rope through the sail or the fitting, and tie another overhand knot in the rope.

Pull the rope tight so that the rope binds on the original overhand knot.

Figure-of-Eight

The ‘figure-of-eight’ knot is used as a stopper knot, preventing ropes from slipping through fittings. Like the bowline, the ‘figure-of-eight’ knot unties easily once free of load.

Make a loop in the end of the rope

Lead the tail underneath the standing end of the rope

Lead the tail of the rope back through the loop, and tighten