



Tech Corner

This winter why not prepare your RS400 for the coming season with some Top Tech Tips from Class association Tech Rep Andy Powell. Here you will find a combination of tips and bimbles to keep your RS400 in great condition as well as optimise performance and reliability.

Carbon Tiller Extension Protective Covering:

If you have noticed the unsightly scratch marks that can appear on the top deck on the rear of the RS400. These marks are likely to have been caused by the rough grip portion of a Carbon Tiller Extension as the helm passes the tiller over the side deck and sometimes it rubs.

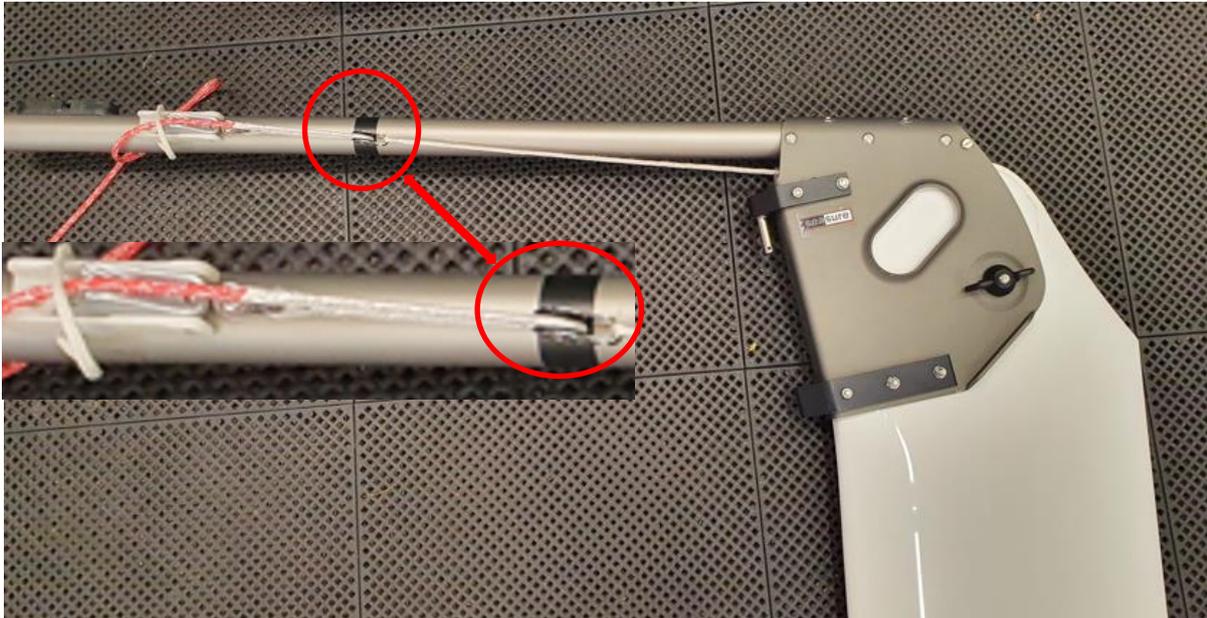


This issue can cheaply and easily be resolved by the application of thin rubber Heat shrink grip. This material is readily available from ebay and is available in various sized to suite the diameter of your tiller extension and in a range of colours. Simply slide the material over then extension and with a heat gun warm it and it will shrink tightly over for a permanent fit.



Rudder Down Witness:

It's essential to ensure that the rudder is always fully down as the boat can become almost unassailable if it pops up just a little bit. The simplest way I have found to have a quick visual check is to add a witness line on the tiller. If the block and the witness line (electrical tape wrapped round the tiller) are aligned its easy to be certain the rudder is fully down and will save a costly trip to the back of the boat. See below.



Quick load release rudder Down Haul Cleat:

For those of us who sail in tidal rivers and estuaries one of the important techniques for sailing at these venues is keeping out of tide. This is often done by sailing close to the edges of the river where the tide is at its least. The problem with this technique is its common to run aground in shallow waters and damage the foils. The natural tendency for the centre board is to kick up and therefore damage is often limited. However, this is not the case with the rudder that is held down tightly by the Downhaul rope into a cleat.

The solution is to fit a Clam cleat Racing Mini- CL257 auto releases cleat. When the load is excessive such as when the rudder hits the bottom the rudder downhaul will automatically release, and the rudder will pop up minimising the damage to the rudder tip.



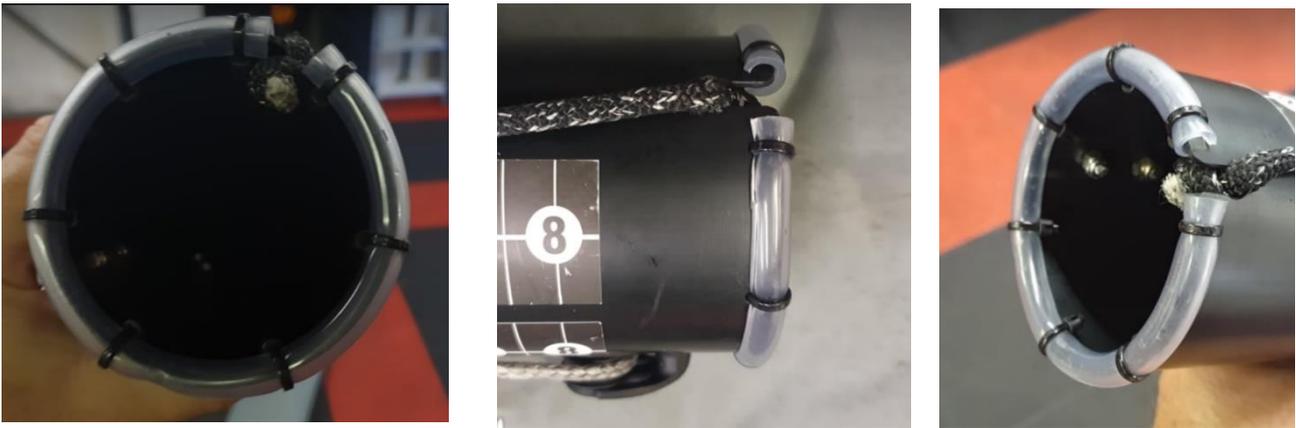
When sailing at these venues it is always worth regularly checking your foils for damage and either filling and fairing them your self or have them professionally faired. The condition of your foils is important to your boat performance. Regular circuit racers may benefit by investing in a club rudder to use for local club racing and keeping the best foils in a bag ready for class racing!

Boom End Protection

One of the common ways in which the RS400 can be damaged and scratch is from an unprotected end of the aluminium boom. There are a great many different methods of protecting the hull from this damage ranging from the application of self-adhesive pro-grip type materials to removeable foam covers.

However, to date the most effective and permanent solution I have come across is the introduction of split rubber pipe cable tied to the end as pictured below.

A series of small holes are drilled radially round the end of the boom. A length of rudder hose (available from hardware stores) is split along its length with a scalpel and cable tied securely in place leaving a small slot for the outhaul, as below



Boom Outhaul Ease Elastic:

Installing elastic between the mainsheet block attachment and the outhaul rope enables the sail outhaul to be more easily eased in light air but also ensures that there is sufficient tension between the outhaul knot and the knot retaining slot in the rear end of the boom to stop the outhaul becoming detached.



Jib Tack Shackle Key:

One of the biggest frustrations of any RS400 sailor is doing and undoing the Jib tack Shackle at the bow. This is all the more difficult during the winter with cold hands and numb fingertips. This can be addressed with two simple methods.

- 1) A stainless steel rod made into a shackle Key as below. This is simply made using some stainless steel rod with a slot in the end. The one pictured below has been made using a re-purposed boom clew slider from an old RS400 Boom. Simply put in a vice and hacksaw a slot in the end.

Use the 5mm hole in the other end for some 3mm chord to hang the tool on your trolley to ensure you never lose it and its always available when needed



- 2) A more expensive but convenient method of attaching the Jib tack is the introduction of the Selden 50mm Quick release snap shackle adapter. This is simply bolted to the Tack bar spigot. This enables quick release of the jib tack and is available from most Chandlerys. It's important to ensure the bottom bolted section is protected so it does not catch on the kite.

It is a simple fit form and function replacement of the long "D" shackle. The upper section that opens can be covered with a looser piece of inner tube to allow easy access when rigging the Jib. The Snap shackle has twice the SWL of the Luff wire so is strong enough and to date I have had no issues with the shackle catching on either the kite or the sheets. The part number for this item is Selden 405-040-01R



Re-Cycled Inner tube protection:

To avoid the use of PVC electrical insulating tape re-cycled bicycle inner tube can be used to protect many things that have been traditionally wrapped with PVC tape. The Bow shackle as above and particularly the Shroud plates. It also has the added advantage that the tube can be easily lifted to allow rig set up changes if you have fast pins fitted.



Harken Marine Grip:

Harken Marine grip is by far the best grip tape I have found to date. Its super grippy but also very resistant to peel which is the problem with the current traditional pro-grip type self-adhesive grip tapes. This self-adhesive tape is easy to cut and fit and comes in various sizes, colours and configurations and is absolutely worth fitting!!



Mast Track Lubrication “Mast up”:

This simple sail track cleaning device can be used all year round and is particularly useful for club racers that rarely drop the mast for maintenance. It consists of a webbing strap with a loop each end, and a dummy bolt rope stitched to it. This can be cheaply and easily made by any sail maker.

To use attach one end to the main halyard and the other to 7M of retrieval line. Firstly run the tool up and down the mast sail track to clear it of any debris. Secondly soak in Silicon spray and run it up and down a few times to fully lubricate the track itself.



Sail bolt rope lubrication

In conjunction with mast track lubrication it is also important to maintain your sail bolt rope. This is the part of the sail that goes up the sail track. Pay particular attention to the stiffer thicker pockets. Ensure that the bolt rope is regularly lubricated with Silicon spray. This will not only wear the sail less, make it easier to hoist but also ensure the sail reacts to the Cunningham sail control and eases once the Cunningham is released to ensure sail shape is maintained.

Bow Sprit Pole & Chute Lubrication:

For quick easy drops and to ensure the system moves freely always spray the bow sprit and the area where the kite is dragged in with Silicon spray. The best dry film silicon spay I have found is as below. Its super slippery, leave no sticky residue and can be used on almost anything, including sail tracks...



Tow rope stowage:

Some clubs and events will require the carrying of an 8mm thick 10m floating tow rope. This rope will fit inside a standard drinks bottle. The bottle can be easily and safely be stowed with elastic loops to the king post on the starboard side. This is a neat solution to a tricky problem.



King Post protection:

The most common way to damage the king post is from impact with the bow sprit during spinnaker drops as the pole comes in. The result of this kind of damage is to bend the post which can alter the height of the foredeck and create misalignment of the mast ram. This misalignment is a common cause of mast ram cracking requiring a costly repair.

The solution is to slide a non-load carrying sacrificial protection sleeve over the king post that will withstand impact damage leaving the kingpost inside undamaged. I use an old shortened Carbon tiller extension shaft as below.

**Spray top Stowage:**

A tip learned from Sarah Robertson (thanks Sarah) at this years Nationals. Always stow your spare spray tops inside a small dry bag and stow it on the Starboard side of the spinnaker tray clipped to the loop used to mount the spinnaker tray.

It's important to keep in a dry bag as it can be compacted into a small area but more importantly dry. From tests between wet and dry spray tops the weight difference can be as much as 1Kg & 3 Kg dependent upon size and winter or summer kit, so essential to keep them dry till needed.

Easy check Bowsprit tool:

For those using a Carbon Bow Sprits it's important to monitor the position of the inner nylon strengthening sleeve in accordance with RS sailing instructions in the link below.

www.rs400.org/documents/p1fckpirap1d3tral14du1uktbs83.pdf

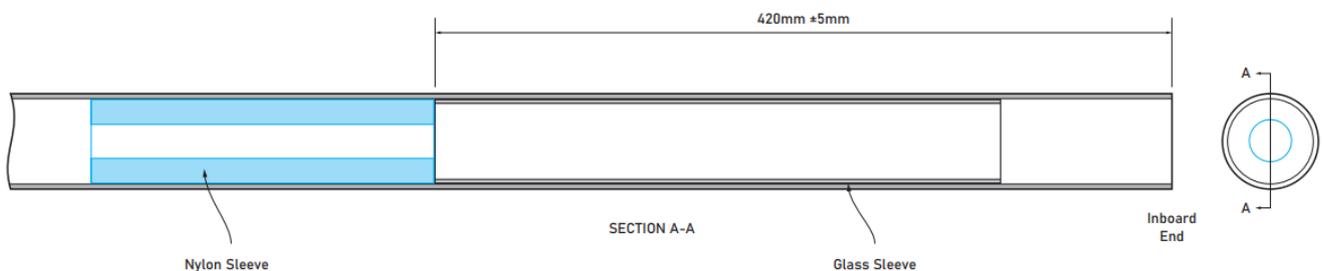
To avoid always having a tape measure available and keep removing the inner end cap of your Bow Sprit make a simple measuring gauge. Firstly drill a 7mm hole in the end cap, then using a 6mm diam. piece of aluminium rod which is readily available from B&Q insert it into the rear of the bow sprit until it touches the inner nylon strengthening sleeve. Remove and measure this distance, verify it's within the specification (420mm \pm 5mm) and mark the rod with Black tape. From then onwards on a regular basis just slide the marked rod inside and check if the sleeve has moved.

If it does report this to RS sailing through the customer portal and stop using the boat.



RS
400

RS400 Spinnaker Pole
Reinforcement Location



Centre Board trailing edge protection

The trailing edges of both rudder and centre board are critical to performance. The centre board trailing edge can easily be protected while off the water by putting a foam rubber protection strip over it. The cheap simple solution is pipe lagging. Split it with a knife along its length and slide over the trailing edge as pictured



Rooster Pro Plus Padded Toe straps (with integrated Rubber grip)

For the best connection between you and your boat you not only need great boots but also Great toe straps. The Rooster Pro Plus Padded Toe straps have a rubberised underside that forms a secure connection to allow you to hike out harder for longer and sail faster. Replacing your old Toe straps is a simple and quick task and the replacement Rooster straps are readily available from Rooster Sailing or here <https://www.roostersailing.com/products/132992>.



To understand why great hiking straps are so important look at Steve's You Tube video here... <https://www.youtube.com/watch?v=NwbGpOZQI8k>



To get the best boot to work with your new Toe Straps look no further than here..... <https://www.roostersailing.com/products/107098>

Rust Stain Removal:

The best way to remove those unsightly stains from around screws and rivets is Y10 gell. Not all stainless-steel screws do what they say and some grades of stainless left in highly corrosive environment will leave stains and streaks. Apply Y10 as instructed on the tin will resolve this

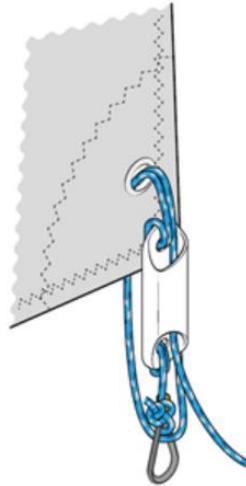


Easy adjust Cunningham:

This year to allow sailors to easily maximise jib performance in different wind strengths the class association ratified the use of the Jib Cunningham Easy Adjust System. This item is readily available from both Rooster and RS Sailing. It consists of a simple cleat that is used to set the Jib Cunningham and avoids the need to undo knots with cold finders.

<https://www.rssailingstore.com/Catalogue/RS-Parts/RS-400/Race-Upgrades/RS400-Roosterized-Jib-Cunningham-Set-up-RS4-WEB-019>

RS400 Jib Cunningham Set-up



Older Boat Race Upgrades:

Older boats if well maintained and upgraded can be every bit as competitive as newer boats provided they are pointed in the right direction and fully upgraded. Below is a full list of the upgrades available for an older boat to get it to full fleet racing spec. Many of these changes are simple upgrades that can be done with the addition of a few blocks and new ropes others are more expensive but if you look out they often come up on the second hand market or are available new and from stock from RS sailing.

8:1 Cunningham

16:1 Kicker

2:1 Main Halyard

Carbon Bow Sprit Pole

Epoxy Foils, both Rudder & Centre Board

New Style Sails

Lightweight Tapered Halyards & Sheets

Rudder Pintle backing plate & corrosion inspection:

A common cause of rudder damage or rudders becoming detached from your boat is failure of the rudder pintles. Regularly check that the securing nuts and bolts through the transom are tight. This will avoid elongation of the holes in the hull. Also look for signs of corrosion between the stainless steel pin and the aluminium fitting of the pintle itself. This is common and the resulting corrosion can cause the pintle fitting to fail and the rudder will come off causing further damage to the upper pintle, potentially the hull and will most defiantly end your event

Jib Halyard and useful storage bag:

I have found this simple peg bag solution that tied tightly to the king post is not only super useful for stowing the Jib Halyard but also snacks, tape and any number of things that can be securely stowed yet easily accessed

www.dunelm.com/product/brabantia-peg-bag-assorted-colours-1000075525



Hull Protection & Covers:

For those that have coloured hulls it essential to us a deep sided cover. This will not only provide greater protection overall to your hull but it will stop the colour fade. The question of what cover to buy comes up regularly and is decisive as there are a great many quality cover manufactures out there, however through personal experience and looking in Dinghy Parks all over the country I have found the Rain & Sun Deep sided covers are the best. Rain and Sun are also great supporters of the RS400 class.



Hull Maintenance Products:

For routine hull maintenance these are the best and most used products for hull, cutting and polishing. These products can be used by hand or in conjunction with a rotary polisher.



Homemade emergency bailer:

For light wind days is very easy to get a lot of water in the RS400 particularly if you forget to put in the bung. On those light wind days is a great idea to make a bailer. These are readily available from the sailing club galley!

A cut-up milk container makes a great bailer, its light, small and flexible which my crew tells me makes bailing easier!! Tie it on to stop it floating away and stow it in the Velcro pocket under the Kite.

