

"How to" service your rudder system Sprint 15 style.



The Sprint 15 rudder assembly is a great bit of kit despite the frustration some may have with it at times. The original Dart rudder assembly was an "ALL GRP affair", tiller arm, rudder head and blade. After about the first two hundred boats the unit was updated to a more robust system that provided a quick and simple operation that could be raised and lowered independently whilst steering and by using just one hand. There is probably no perfect catamaran rudder system - all have their own good points, bad points and limitations - but the Sprint 15 rudder system is pretty good and, with some respectful maintenance on occasions, will give years of good service. Lack of maintenance on any mechanical item will lead to failure - so a few checks little and often pays dividends.

2. Connecting bar: Check for corrosion across its length, in particular, around the tiller extension coupling point. Nearly all connecting bars have now been updated to the plastic ends which fit onto the short tiller pin on the tiller arm. The system is good and provides direct response, but if the plastic end is showing signs of cracking near the washer style hole, consider replacing. Again drill out the 4.8mm rivet and remove the original. You now have a choice - replace with a standard new plastic end item 02050 or upgrade to an adjustable end that allows you to align your rudder easily. The adjustable connecting bar end item 20028 comes with instructions and fixing. You may need to remove a small section of the connecting bar tube to provide the adjustment. Check out the website for the appropriate parts: www.catparts.windsport.co.uk

So here goes on how to service and checking your rudder assembly this winter.

1. Tiller extension: As long as it is still pretty straight and the rubber UJ is in good condition with no splits when you bend it, all's good. If the UJ looks tired, replace it before it fails at the wrong moment. Start by drilling out the lower 3.2mm rivet, pulling the old UJ unit out and with a bit of lubricant inserting a new one. Finish the job with the appropriate rivet expanded into the tube and the UJ.

3. Tiller arms: Tiller arms get a bit of abuse on the water. They are the mechanism for raising and lowering the rudder blade as well as the link between connecting bar, rudder blade and the helmsman. They can also get bent by leaning on them, incidents on the water, etc., leading to cracks around the welded joint and loosening of riveted fittings. Check for weld cracks, loose fittings and condition of the shockcord securing the key-hole clip.



Pics.

Top: the original all GRP rudder assembly as tested on Dart No. 1 - you can see the two connecting bar pins where they tested the length of the arm required. This unit is now held in the Windsport "Dart history" museum alongside the first ever Spark hull!

Middle: when replacing the tiller extension universal joint, only drill out the LOWER rivet.

Left: corroded rudder bolt parts which are now replaced with the new style assemblies shown alongside

Right: if you decide to upgrade to the adjustable connecting bar, it's a simple process





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4 Rudder A frame: This is where it can get really interesting. This is the steering rack of the boat. It holds the blade in place and transfers your input to the rudder blade. Any movement in this area is exaggerated by the blade and tiller arm leverage. Remove the rudder unit from the stern and place the rudder blade in the lock down position. With the tip of the blade on a soft surface, establish any excessive movement at the rudder pivot point both left and right and forward and backwards. If any such movement is identified, replace worn areas such as rudder bolt washers, bolt sleeve, rudder buffer, etc.

5. Lock down and lock up mechanism: The top pintle casting is the area that potentially gets the most damage following grounding. If the rudder system is not working correctly when grounding something has to give and that is normally the top pintle casting. If the lock rollers when drawn forward by the lock wire move equally all is good. If the lock roller axle twists in the slider guides or jams in the slide box, check that the pintle casting wings that rivet onto the A frame are parallel using a straight edge. Fitting new lock rollers, axle shoes etc. is an option but only if the casting is still square and in good order. With everything working, the final check is the rubber buffer at the bottom of the

A frame which supports the blade low down and stops the blade from impacting the A frame front edge. Any lubrication should only be applied to the pintle sleeve and slider. No lubrication should be applied to the lock rollers themselves. Adjustment to the rudder kick-up is adjusted by filing the kick up anvil on the rudder blade. Filing a light groove across the anvil where the lock roller sits increases kick-up.

6. Your rudder blade: Like the tyres on your car they need to be in good condition - chips, splits, warping, etc., all contribute to an unstable water flow across the blade and the faster the flow the more chance of disturbance and rudder stall. Older blades will be hollow with a breather hole in the head. New blades, as supplied by Windsport, are now foam filled providing a more stable and robust blade. External inspection of the blade is a good indicator but if you blow into the breather hole you can check the blade for any air holes or splits.

OK - that is about it for your "rudder system winter service". All the replacement parts can be found on the Windsport Catparts website www.catparts.windsport.co.uk - and for any further technical advice you are welcome to call the Windsport technical support team on +44 (0) 1326 376191

Pics.:

Left: rudder A-stock frame showing the lower rudder buffer and a straight edge checking that the pintle wings are parallel.

Right: a new production blade showing the foaming point on the blade's seam and lock roller anvil

