

# *Hobie Cat*

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## *Owner's Manual Update*

Please amend this to the owner's manual.

### Backstay Tension

For various reasons we have decided that we need to get more tension on the back stays and we need to make it easier to hook up the back stay. So we have are using lashing on the starboard back stay which will allow you to comfortably hook up the back stay and then use the lashing to tighten the whole rig. So while stepping the starboard mast make sure that the lashings are completely extended and then use a little bit of force to get the hook on to the pad eye. The mast should be secure at this point and now is a good time to double check the rig before you completely tighten it. Make sure that the compression strut is completely engaged on to the pins at each end and make sure that all the wire are straight and not kinked. Make sure that the outer beams are completely engaged into the center main beam. After all these checks are made then tighten the lashings until the length of the lashings are approximately 4.25" (11 cm) long and tie a bunch of half hitches to secure the line. This dimension should make the masts parallel when viewed from the side.

When de-rigging untie the knots and slacken the lashing all the way. Before unhooking the back stay PLEASE BE SURE THAT THE PORT BOOM IS CONNECTED TO THE KING POST. Now the lashing are ready to be assembled again the next you rig the boat.

### Compression Strut

We have made the compression strut connect to the masts much more positively. Instead of the compression strut snapping onto the masts, now the compression strut screws onto each mast. Always put the compression strut onto the port mast first. (The threads on the port mast are a little longer.) Screw the compression strut all the way on to the port mast and then start to install the compression strut on to the starboard mast. Get the threads started onto the starboard mast and as you screw the compression strut onto the starboard mast it will unthread itself from the port mast, but the starboard side should bottom out while there are plenty of threads still engaged in the port mast.

When derigging simply unscrew the starboard mast and then unscrew the port mast. We feel really good about this modification.

### Sensor Bow Line

The sensor bow line is the grey line which is attached to the bow of the sensor. The brass hook on the end of the line hooks to the pad eye on the mast. The pad is on the front of the mast and is located about 12" inches from the bottom of the mast.

This line is very important to the safe operation of the boat. Please be sure it is operating correctly and the line length is correct. The line should be right from the factory, but if any thing happens the line length should be adjusted so that the sensor always has a positive angle of attack.

### Adjustable Shock Absorbers

As it turns out the length of the shock absorbers or the spring force that the shock absorbers generates is actually quite critical and the amount of spring force required will depend on a number of factors.

If the shock does not generate enough spring force meaning the shock is too short, then the sensor will come off the water on the leeward side and the foil will lift the boat too high. We call this situation "Sensor Rising". However if the shock is too long, then the shock will press the bow of the ama too low and it will require more wind to get onto the foils.

Sensor rising only occurs on the leeward side, because the leeward side lifts a lot more weight. That lift vector is slightly ahead of the pivot point at the ama at high angles of attack so that lift vector creates a moment which lifts the sensor off the water. The spring inside the shock is intended to counter this moment.

Anytime the foils is required to lift more weight, then the shock needs to generate more force in order to keep the sensor on the water. Sailing with two people in the boat or pointing close to the wind will require more lift from the foil. Surprisingly the foil will have to lift more weight in light wind than in heavy wind (in heavy wind the drive vector is pointed more forward and there is less heeling force) Even with the boat properly adjusted it maybe possible to cause sensor rising by trying to get onto the foils while pointing too high. There are a techniques that can help avoid sensor rising. Once the boat gets up to speed then the sensor will stay on the water. When you see the sensor come off the water, bear away a few degrees and the sensor should come down. When the boat gets up to speed you may head up again. If the sensor does not go down when you bear away, then be patient. Do not let the boat accelerate until the foil comes to the surface, because then it will draw air and fall back down and you will have to start over. Usually as the stern of the boat comes up the boat pitches forward which pitches the masts forward and automatically increases the spring force. So usually a little patience will get you on the foils.

I like to sail with light spring pressure so the boat gets on the foils in as little wind as possible and the sensors are as lightly loaded as possible. When I sail by myself I will occasionally see sensor rising and when I sail with a passenger I will routinely see sensor rising, but I automatically use the above technique to get the boat on the foils. Only when I am going to let a novice sail the boat will I increase the spring force so they do not need to worry about sensor rising.

Mast rake will also affect the force generated by the shock absorbers, because mast rake will affect the position of the top of the shock absorber. If you rake the masts forward that will compress the shock slightly and increase spring force and visa versa.

The length of the shock can be adjusted simply by turning the shock.

If adjustments are made to the ride height of the boat then theoretically it will be necessary to adjust the shocks.

### Foil Plates

It is important to occasionally check the to make sure that the 4 bolts in the foil plates are tight. When they leave the factory they are tight, but the fiberglass may shrink and the bolts may loosen.

For good mast rotation is good to lubricate the mast pivot points. There are 4 on each mast; the compression strut, the boom, the shock and the mast base socket. A little silicone lubricant is very helpful on these points. The steel quick pins work better with a little oil as well.

Good luck and good sailing.

Sincerely;

Greg Ketterman