WESTSAIL TANGS, STAYS & FITTINGS

Bobstay Fittings:

The early Westsail 32's had the bobstay fitting on the hull at the bow waterline made from two stainless steel exterior plates, that were bolted onto the hull on the outside with four 3/8" carriage bolts on each plate. The front end was separated enough to permit the bobstay wire eye end to go between the two plates, and a 5/8" bolt and locknut were used to attach the stay end. This design was changed to an internally mounted bobstay fitting, and this same fitting was used on the rest of the line of boats. On the W28 and W32 this fitting has a 3/8" thick stainless plate, welded to a 2" x 2" angle stainless, attached so the angle forms a V with the thick ear piece. A slot is cut in the stem of the boat, and the plate inserted from the inside, set in a bed of fiberglass putty, and bonded over with layers of mat and roving on the inside of the hull. The external seam was then caulked to prevent water from weeping into the cut. The bobstay fitting on the Westsail 42 and 43 uses a ½" thick plate, with a 3" x 3" x 10" angle stainless, with holes slightly over ¾". The bobstay fitting should be carefully inspected periodically for signs of corrosion and electrolysis. We have seen these eaten up by electrolysis, especially when the boat is loaded enough so that the fitting is constantly in the water. We recommend that a small zinc be attached to the lower end of the fitting to protect it from electrolysis. Since these fittings are installed through the hull, with a V piece of stainless steel welded to the backside, and bonded over, it is possible for the caulking around the fitting to harden, and permit water to weep in around the fitting. Also, when some previous owner rammed the dock with the stem of the boat, the bobstay fitting may have been loosened, and water can seep in, starting crevice corrosion. Renew the bead of caulking around the bobstay fitting by using masking tape to define the edges of the caulking bead, fill with polyurethane caulking, wipe the excess to smooth it out, then pull the tape to make a perfect bead of caulking.

Move some weight out of the bow and into the stern to raise the fitting above the water if you are doing this job while still afloat. Be sure to put a piece of zinc on the bobstay fitting to prevent electrolysis, as we have seen a number of these get pitted out by electrolysis. Use a pair of small round zinc plates normally used on metal rudders, and attach through the bottom hole in the bobstay fitting, or drill an extra hole near the bottom corner of the fitting. We also talked to an owner recently that said he experienced electrolysis between his galvanized chain bobstay and the stainless steel bobstay fitting in the hull. The stainless fitting lost out, and the hole broke out on the fitting. We do not recommend using chain for a bobstay.

Bobstay parts available:

- Bobstay fitting SS internal through hull – W28/W32
- Bobstay fitting SS internal through hull – W42/W43
- Bobstay fitting SS external for W32

Boomkin Stay Tang Failures:

A major rigging problem point on the W32 is the boomkin stay tangs bolted to the hull at the stern. The early boats had a 1" wide tang, with a 1/2" clearance hole for the pin on the stay, leaving less than 1/4" of metal around the hole. The condition of the metal around the hole is not readily visible for inspection because of the carriage bolt heads, and the toggle on the end of the stay. Being in and out of the water, and flexed with loads, the end of this tang can develop unseen cracks and hole elongation. After 1976, the width of the tang was increased to 1-1/4" wide, giving enough cross section area around the hole to prevent elongation, however we now increased the width to 1-1/2". The hull tangs for the bowsprit whisker stays rarely seem to have any problems (except if you have been running into pilings), but they should be checked in any event as a precaution. We have been made aware of stress cracks radiating out from the square bolt hole on the tangs. The area around each hole should be carefully inspected for signs cracks developing.

We recommend that the boomkin tangs be inspected at every haul out and suggest that the tangs be first checked to see if they are in good alignment with the wire. Next the nuts should be taken off from the inside of the lazarette, or the back end of the engine compartment, wherever the bolts come through. The turnbuckles should be opened about a half inch, and the tangs pulled off of the hull. Everything should be carefully checked, especially the backside of the tang, the condition around all of the holes, and the condition of the bolts. If any cracks or crevice corrosion is found, the part should be replaced. Also check the fittings on the underside of the back end of the boomkin. When replacing, attach the bolt on the end of the tang, then tighten up the turnbuckle to make sure the tang is in good alignment. If it is not, then re-drill the other hole, or take the tang off, seal up the other hole with epoxy putty, and then re-attach and drill a new hole to install the second bolt. Put a small ring of caulking around each hole, and under the head of the bolt. Do not caulk the entire backside of the tangs. Stainless needs contact with oxygen in the air to prevent crevice corrosion, and water can only come through the holes themselves. Of course, the stay wires should be carefully inspected for any signs of hairline cracks on the swaged fittings, especially on the lower one. On some of the boats, the toggle end on the lower eye has a removable pin, and when replacing the wire, the toggle and pin can be reused, if they are still in good condition. If ordering new wires, measure from hole to hole on the end fittings of the wire, with the turnbuckle half open.

Boomkin Crosspiece Failure on the Westsail 32

The early Westsail 32's had a wooden crosspiece on the boomkin, with a U bolt to hold the backstay. This wood must be carefully checked for rot and cracking that could let the U bolt pull out. If you still have the wooden crosspiece, then we would highly recommend replacing it with a metal one. A recent failure, with the subsequent need to replace the mast, was the 3/8" bolt holding the upper tang to the crosspiece, as this is the weak point in the entire standing rigging system. The U bolt in this case had also broken on one leg inside the wood, and was only holding on by one of the 1/4" legs. Westsail then made a stainless crosspiece with a 2" web. Some of the 2" x 2" stainless crosspieces have bent up slightly, but we have not heard of a failure of one of this design. You might want to have a reinforcement piece welded to the vertical part of the angle as a reinforcement, especially if you are heading offshore. The current design has a 4" vertical web, with a reinforcing bar below the backstay ear, and two ears to hold the boomkin stays. We do have this 2" x 4" stainless crosspiece available as a replacement. The top and aft face are not at 90 degrees like the original stainless ones Westsail made, but at 82 degrees. This is because when used in conjunction with the stainless boomkin we make, and since the boomkin rises up at 8 degrees, this puts the aft face perpendicular to the waterline. This permits a windvane to be mounted directly on the aft face, and be perpendicular with the water. When used in conjunction with a wooden boomkin, it is necessary to cut the aft face of the wood to match. You may also have to drill out holes to mount it to your wood boomkin. Also carefully check the wood on the boomkin itself for signs of rot or cracks, especially on the end under the metal crosspiece, and around the bolts holding them to the deck. Check the attachment bolts for signs of bending, or movement of the boomkin forward along the deck. If you want to build a new wooden boomkin, use clear fir lumber, and saturate it with at least two coats of epoxy resin after building it and drilling all of the holes.

To replace the wooden boomkin, we have designed a stainless steel pipe frame boomkin, consisting of 1-1/4" ID pipes, and a stainless crosspiece with a 4" vertical web. There are hull pads on the ends which bolt to the hull sides, just below the rubrail, with backup washers inside the lazarette. Contact Westsail Parts Company for information on this all stainless steel boomkin replacement.

Bowsprit Attachment and Staysail Eyebolt:
In order to control the headstay tension (the key to upwind performance), the headstay must be sufficiently tight so it will not move. The key to this is the eyeband staying in one place and only one place. If the whiskers, bobstay or bowsprit are loose, there can be movement. If there is 2,000 lbs. load on the headstay, there is close to 6,500 lbs. load on the bobstay. Add the 1,500 lbs. on the whisker stays, the compression on the bowsprit is near 10,000 lbs. That load is taken by three 1/2" bronze bolts that go through the bowsprit and deck. It is possible that the wood can creep aft on the bolts under the tension, and that the rig is losing tension. We have talked to people who have pulled the bowsprit bolts and found them to resemble a bent letter S. The 1/2" bronze eyebolt holding the staysail stay has broken on a number of occasions that we know of.

The stem plate that attaches to this eyebolt and the stem of the boat has also broken on the bend, if there is any slight movement of the bowsprit. This piece should also be carefully inspected very frequently. We would recommend replacing the bolts with stainless steel, as well as a stainless steel eyebolt. The bowsprit stay tangs and wires should also be inspected. They do not get the loading that the boomkin stays receive, but there is always the possibility of crevice corrosion in these fittings. As a replacement for the wooden bowsprit for a Westsail 28 or 32, we have available a bowsprit made from stainless steel box section tubing, with tubes welded in place for the attachment bolts to fit through. This bowsprit is made from tubing that is 4" square, with a .120" wall, with end plates welded on, and the eyeband welded to the end. Since it is a direct replacement for the wooden bowsprit, you can use your existing platform, anchor rollers, staysail pedestal, and staysail eyebolt.

Replacement parts available:
Staysail Eyebolt - 1/2" x 6" SS
Bowsprit stem fitting with reinforcing brace and fasteners
Bow whisker stay tangs - W28/W32 – 1-1/2” wide with fasteners
Bow whisker stay wires – W28/W32 with swaged eye and toggle
Bow whisker stay wires – W32 with swaged eye and threaded stud --

Email or call for an exact quote - randy@westsailparts.com 415 254 7296