# Vanguard 15 Mainsheet Ratchet Eyestrap Repair

Making an effective repair to a loose Vanguard 15 mainsheet ratchet eyestrap is a fairly easy repair.

First it is helpful to understand the biology of this area of the boat. The cockpit floor is foam sandwich construction. In boats built prior to the fall of 1999, there is a wooden backing plate on the inside of the boat in the area underneath the eyestrap. The eyestrap itself is through-bolted through this block. The reason you are reading this now is probably that water has infiltrated the wooden block and it has become soft, allowing the washer and nut on the inside of the boat to press into the block, causing the eyestrap to be wobbly. Fortunately the solution to this is simple.

You will need the following materials:
Drill with 1/8", ¼" and countersink bits
Hair dryer or heat gun
Epoxy
High density filler
Syringe for epoxy
2 x #10 x 1.5" pan head self-tapping screws
Screwdriver to fit above screws
Acetone

If you don't have any epoxy supplies on hand I recommend the West System Maxi Repair Kit. This includes easy to mix packets of epoxy, the filler and syringe mentioned above, along with other accessories which are useful in maintaining your boat.

To start, drill through the heads of the bolts which hold the mainsheet ratchet eyestrap to the boat. You may need to grip the heads of the bolts with needle nose pliers while you are drilling them, to prevent the heads from spinning. When the head is drilled through, pull the eyestrap up off the bolts. The bolts should drop into the inside of the boat, where you can retrieve them through one of the inspection ports later. If you grind your eyestrap down in this process and find that you want to replace it, it is a Harken eyestrap, Vanguard part #10137, Harken part #137. These are available at your Vanguard dealer.

After the bolts are through, use the countersink bit to enlarge the hole into an inverted cone shape. This will provide more surface area for quicker drying of the area and better bonding for the epoxy repair.

Next, take the hair dryer or heat gun and dry the area around the now exposed holes thoroughly. If in doubt, keep drying. There is no such thing as too dry,

but there is such a thing as too hot. Be patient and don't let the boat's surface temperature get above 100 degrees.

After the holes are completely dry, you will fill them with thickened epoxy. First, mask the cockpit floor around the area so you don't wind up with a messy repair. Mix some epoxy, adding high density filler as you mix. The final consistency should be somewhat thinner than peanut butter – just thick enough to prevent running and dripping. Pour some epoxy into the syringe, and push the epoxy into the two holes left from the bolts. A little extra epoxy coming out of the holes is fine.

After that epoxy is set (leave 5 to 6 hours for a full cure), lightly sand down any epoxy hills on top of the two hills. Drill a 1/8" pilot hole into each of the newly filled holes. Have your eyestrap, screws and screwdriver standing by. Mix up some epoxy without any thickeners. Drip a small bit of epoxy into each pilot hole. Dip each screw into the epoxy to coat it, then place the eyestrap into position and fasten it by screwing the screws into the holes. There will be some excess epoxy around the screw heads, which you can clean up with some epoxy and a rag.

Wait 5 or 6 hours for the epoxy to set, test the eyestrap by pulling up on it to make sure that nothing unexpected has happened, reattach your ratchet block and go sailing.