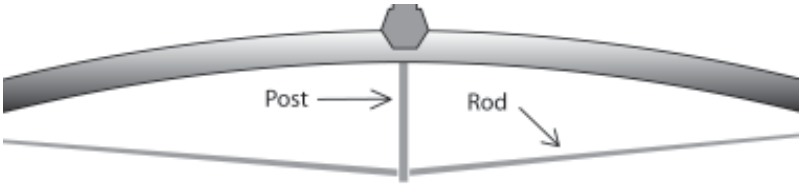
Getting in Step

How do you replace the mast step casting on a Hobie 16?

by Matt Miller, Hobie Cat USA

(This is a replacement procedure based on Hobie 16, but you can apply the basic concepts to most all of the models with a step casting and striker system.)

The Hobie 16 mast step casting is fastened to the front crossbar with four stainless steel rivets. The casting is also threaded onto the dolphin striker post that passes vertically through the crossbar and attaches to the dolphin striker rod. The striker rod passes horizontally between the two forward corner castings.

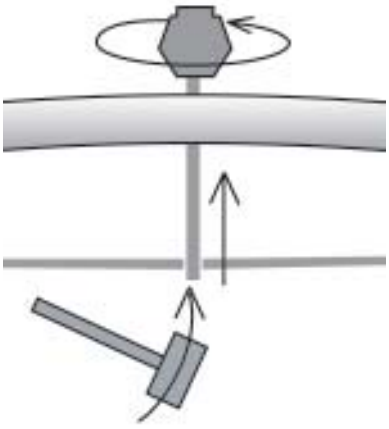


Tools and Parts required: Pencil, straight edge, drill motor, 3/16" drill bit, 1/4" drill bit, 3/16" straight punch (a #2 Phillips head screwdriver works, too), hammer or mallet, large Vise Grip pliers, wire brush, Rivet gun or tool, Scissor jack (Automobile Jack) or clamps, mast step casting (part # 20200011), four 3/16" diameter x 1/2" length rivets (part # 8011231).

If desired, you can try marking the current rivet locations, but this is not a critical step. Start by marking the centers of the existing rivet locations using the pencil and straight edge. Line up the straight edge, horizontally, across the two forward rivets and mark the crossbar just outside the casting. Line up on each rivet with the straight edge in a vertical position and mark the crossbar just below the casting. Repeat on the two aft rivets as best as possible.

(The new mast step casting does not come predrilled for the rivets. It is nearly impossible to locate the new rivets in the same holes on the crossbar, so I suggest trying to avoid the original holes as best as possible. I have never had an issue with the rivet hole locations even when disregarding the original rivet hole locations completely, so I don't believe this is a critical point. The rivets (especially the front ones) are in shear, not tension, so pulling out of the holes is not a key issue. Since the casting is pushed down when in use and held from lateral movement by the post as well, the rivets really just lock it down and are not the key to the rig strength. Although there are upward loads when not rigged and when stepping the mast. Because the rivets are in the crossbar at odd angles, they, along with the post, lock the casting on solid.

Remove the four old rivets by drilling off the rivet heads using the 1/4" bit. You can use the 3/16" bits, but it requires that you wallow out the hole in the head a little to thin the rivet head enough to punch through. Punch the remainder of the rivets into the crossbar using the straight punch / Phillips screwdriver and hammer. If you can, using a 1/2" crescent wrench, back off the striker rod nuts on the outer ends of the rod about 1/2" (on older boats, the rod may be fused to the castings with corrosion). Using the Mallet, and possibly a chunk of wood to soften the blow, pound the striker post from below to force the post and step casting up above the crossbar.

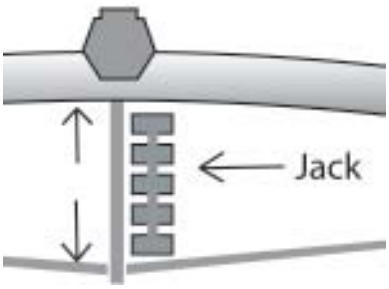


Remove the casting from the post. The casting is threaded onto the post, but

may be fused from corrosion. I first try to grip the casting with big Vise Grip® pliers and unthread. If it won't budge, try a penetrating oil (Liquid Wrench®) and bang on it a few times with the hammer. If it just won't turn, cut through one side of the casting and wedge a blade screwdriver into the cut to spread it slightly. This should break the corrosion bond.

Once the old casting is off the striker post, clean the threads using a wire brush.

Thread on the new step casting until the post is just short of flush with the bottom of the step cup—a little grease on the threads will help. Too far in and the bottom of the cup will have a flat. This causes mast chips to wear through and can cause damage to the mast base casting.



To get the casting seated back onto the crossbar for riveting, you have two choices. First, you can use a car jack (scissor jack) between the striker rod and the crossbar to force the post and casting back down until the casting is flush and rivets can be installed. Alternatively, you can use clamps to hold it in place (see photos). **In either case, be sure that the dolphin striker rod is tensioned before sailing again—forgetting that can cause the front crossbar to fail.** A tight dolphin striker rod will "thrumm" when struck with an object. A loose dolphin striker rod will "clunk."

To use the scissor jack, place the jack on top of the striker rod and next to the post. Pad the crossbar with a bit of cardboard. Crank up the jack until it contacts the crossbar, and then slowly crank it to force the rod down there by pulling the post and casting down. Continue until the casting is tight against the cross bar. I have often had to hammer the casting down a little to get a tight fit. I direct hammer blow forces against the top of the post inside of the cup, not directly onto the casting. I have used a ball peen hammer, upside down with the ball against the post, and smacked the hammer end with a wood block. Sometimes, the casting will not quite fit flush at the aft end where it "hooks" over the aft edge of the crossbar. You may have to *slightly* enlarge the aft side of the upper striker post hole in the crossbar using a rattail file.

Once the casting is seated, you can get the straight edge and pencil back out. Line up the straight edge with the marks on the crossbar and pencil the old rivet locations onto the new casting. You can try to drill into the original rivet hole locations, disregard and drill wherever, or drill in fresh locations. They all work.

Insert and "pull" each rivet, remove the jac and/or clamps — you're done!