SAILSetc 370-GLOVE

‘Glove’ to fit the head of a fin for QUARK or DIAMOND

Introduction

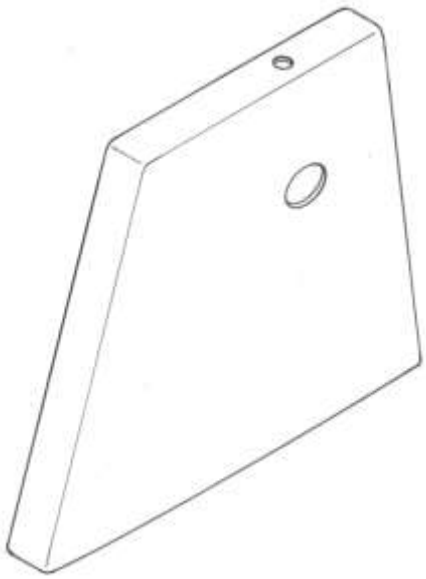
The ‘glove’ is made to fit the fin trunking so that a new fin can be bonded into it to provide a perfect fit with a minimum of effort and a great cosmetic finish.

This is only possible because the shape, position and attitude of the trunking in QUARK and DIAMOND is repeatable – the method of construction ensures it is the same in each hull produced.

The gloves are made by 3D printing using Nylon. This guarantees the shape and size of each to within very close limits. The weight is 17 grams for the QUARK glove and 21 grams for the DIAMOND glove.

The wall thickness of the glove reduces the available width of the fin trunking from just under 10 mm to 8 mm. This is large enough to fit the fins offered by SAILSetc that are suitable for both designs.

Some care needs to be taken to ensure a good result. Please follow the notes given here.



370-GLOVE

Preparation

Check that the glove fits snugly into the fin trunking leaving little or no part of it projecting below the hull. Remove any build up of resin or adhesives that may have accumulated on the inner surfaces of the trunking that prevent this.

Check that the hole for the fin bolt in the deck is aligned properly with the hole in the top of the glove. Elongate the hole in the glove if necessary.

Fit the fin to the glove

Make a thick card, or 3-6 mm plywood, mock-up of the fin that can be shaped to fit the glove as you want it and which is the required size and position. Transfer that profile shape to the fin moulding. Cut the head of the fin to shape, double check its fore and aft position and attitude with respect to the hull, and adjust it as necessary.

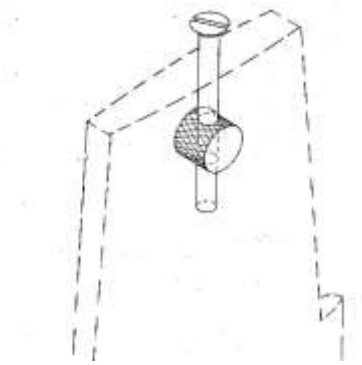
Once the fore and aft position and attitude of the fin is correct, the transverse alignment should be checked. Drill two 1.6 mm holes through the fin, one close to the leading edge, one near the trailing edge and both inside the glove (just above the hull bottom). Tap these two holes M2**. For QUARK put M2 csk head x 8 mm long screws in the holes and adjust them so that the fin is in line with the hull in a transverse sense. For DIAMOND use M2 pan head screws. The SAILSetc fin alignment tool is designed to make the task of aligning the fin with the hull easier.

If the head of the fin is narrower than the inside of the top of the glove then it should be packed each side so that it is aligned correctly with the hull. Use small tabs of self adhesive material for this task.

**If you don't have an M2 tap use a 1.8 mm drill and 'self tap' the screws into place.

Drill the head of the fin for the fixing bolt

When the fin fits the glove correctly, use a 4.2 mm diameter drill to drill down from the hole in the top to a depth of 40 mm. Align the drill so that it passes under the centre of the circular aperture on the starboard side of the glove.



Mark the position of the circular aperture on the fin and remove it from the glove. Use drills and files to open up a 10 mm diameter hole in the fin at that point to accept the insert part of INS-040.

Prepare to bond the fin into the glove

Care has to be taken to avoid distorting the thickness of the glove to ensure that it still fits into the fin trunking after the fin is bonded in.

Do this by making two plates, 100 mm x 100 mm, and minimum 6 mm thick. Use metal, plywood, MDF or plastic sheet for this task. These will be firmly (not too tightly) clamped each side of the glove during the bonding process to ensure the thickness of the glove is not increased.

Provide a suitable release agent on the plates where they might be exposed to spills of resin so they do not become bonded onto the glove. PVC packaging tape works well.

Bond the fin into the glove

Clean the head of the fin with solvent.

If you have wax release agent use this to coat the outside of the glove and the fin bolt. Furniture wax will work perfectly well if you have no release agent.

Mix sufficient epoxy resin to fill the cavity between glove and fin and thicken it so that it does not slump or flow. Coat all over the outside of the fin head with thickened resin and push some thickened resin into the glove. Press the fin head fully into the glove. Push the fin insert into the hole and add the fin bolt. Screw the fin bolt fully home.

Remove excess resin from around the holes where the fin bolt and insert have been added. Clean with solvent. Place a piece of tape (or deck patch material) over the hole for the insert.

Add the plates each side of the glove and clamp firmly. Remove excess resin that is pushed out of the glove and clean the fin with solvent.

Leave to cure until the resin has gelled (firm but not hard). This will take 1 or 2 hours depending on the working temperature. At this point the plates can be removed from the sides of the glove and solvent can be used to thoroughly clean the work.

Leave to cure thoroughly.

Finishing

When the resin has fully cured, remove the fin bolt.

Place the fin into the fin trunking and check the join between fin and hull. Excess material may be trimmed off using a sharp chisel – use tape to protect the surfaces of the hull and fin that may be damaged by the chisel.

Fill any unwanted hollows or voids with epoxy or polyester filler. Take care to apply release agent to the surfaces of the fin, glove or hull that may be bonded during this process.

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