

Screw-Down Boat Hatches – An Alternative to Tape!

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As Fast Electric (FE) radio control boats get more realistic and detailed in appearance, it is becoming desirable to find simple, secure and “clean” methods of fastening the hatch to the hull of the model boat. The vast majority of FE boaters simply tape down the hatch using clear tape or electrical tape. Taping the hatch is an effective way to seal and secure the hatch, but if you have spent many hours painting and decaling your model to replicate a real offshore or hydroplane racer, applying tape to the hull may not be your first choice for securing the hatch. This article shows how to fasten the hatch, for either monohulls or hydroplanes, by screwing the hatch onto the deck. This is a secure and waterproof method of fastening the hatch, and also improves the boat’s appearance.



Photo 1: Screw-down hatches are easy, professional looking, and waterproof

1: SELECTING SCREW-DOWN HATCHES:

It is possible to screw down many different types of hatches for both monohull and hydroplane models. All that is required is a flat surface around the perimeter of the hatch, and a flat “ledge” around the interior of the deck on which the hatch rests. If these features are found on the hull, then it is possible to install a screw-down hatch instead of taping the hatch in place. Photos 2 and 3 show hydroplane and monohull FE models with finished, screw down hatches in place.

In all cases the hatches are screwed down onto the hull using small socket head screws and blind nuts that are installed under the ledge around the inside of the deck. Foam tape, or weather striping, is placed under the hatch to ensure the hatch has a watertight seal on the deck.

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Photo 2: Hydroplane hull with screw-down hatch



Photo 3: Monohull with screw-down hatch

2: REQUIRED MATERIALS

The following materials are required to fasten the hatch to the hull using the screw-down method.

Materials

- 5/32" minimum thickness aircraft plywood
- 6-32 stainless steel or nylon screws
- 6-32 stainless steel blind nuts
- Medium thickness CA Glue
- DuBro Instant Stik Foam Tape (Cat. No. 163)

3: FASTNERS

The key to making the hatch easy to screw in place is to install blind nuts under the deck ledge, which supports the hatch. The simplest and strongest method of holding the blind nuts in place under the ledge is to press them into small pieces of plywood (approximately 1/2" X 3/4") and then glue these plywood pieces under the ledge. Photo 4 shows the required materials and the small plywood pieces.

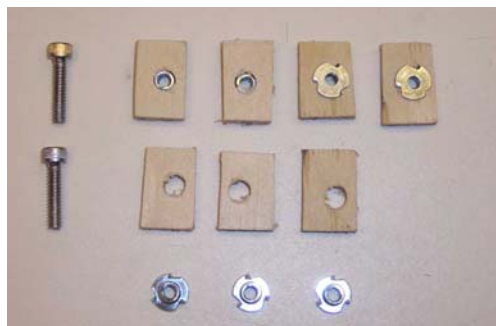


Photo 4: 3/4" 6-32 screws, blind nuts and plywood supports

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As noted in Photo 4, the holes for the blind nuts are slightly off centre – closer to one edge than the other. This “shorter edge” is on the inside edge of the deck ledge so that it does not protrude into the hull.

4: PREPARING THE HATCH AND DECK:

The first step is to determine at which locations to drill the holes in the hatch. Typically, the hatch holes are spaced 5” – 7” apart around the edge of the hatch as shown in Photo 5. The shape of the hatch also determines the hole locations – a square hatch does not require a hole at the bow end, whereas a monohull hatch usually requires one. As shown in Photo 5, the 9/64” diameter hatch holes need to be close enough to the edge of the hatch so that they are approximately in the centre of the deck ledge. If the holes are too far to the outside edge of the hatch, they may result in a weakened hatch. Conversely, if the holes are too far to the inside of the hatch, they may miss the deck ledge and not have a fastening point. Either situation is a problem, so care is required in selecting the hole locations.

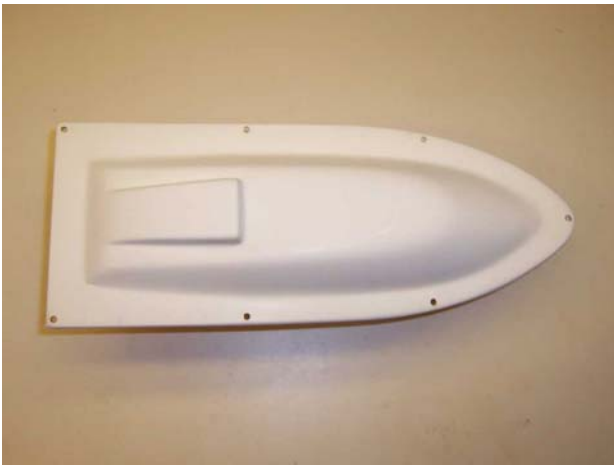


Photo 5: 9/64” Holes drilled around hatch



Photo 6: Foam placed around the deck, and corresponding hatch holes drilled through deck

Once the hatch holes have been drilled, test fit the hatch on the deck to ensure all of the holes line up on the deck ledge. Then place the hatch on the deck and use the hatch holes as guides to drill the corresponding holes around the deck ledge. Photo 6 shows the finished deck ledge with the hatch holes drilled around the perimeter. It should be noted that at this point in the project, the DuBro Foam Tape has not yet been applied.

Now that the hatch and deck have been drilled, it remains to glue the blindnuts - already pressed into the plywood squares - underneath the deck ledge. The plywood squares make it easy to attach the blindnuts under the ledge. Simply test fit the plywood squares, with blindnuts installed, to ensure they line up with the deck ledge holes and then glue them in place using medium CA. Photos 7 and 8 show some of the blindnuts glued in place under the deck ledge. As mentioned in section 3, it may be necessary to sand and file one side of the blindnuts and plywood pieces to avoid having the edge protrude into the deck opening. This is particularly true for the hydroplane model since it has a “lip” under the deck edge (see Photo 8).

Once all of the wood pieces with blind nuts have been installed, test fit the hatch on the deck and screw it in place to ensure all of the holes and nuts line up properly. If required, enlarge the hatch holes slightly to ensure a good fit of the hatch onto the deck.

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Photo 7: Small plywood supports and blindnuts glued to the underside of the deck ledge (Monohull)

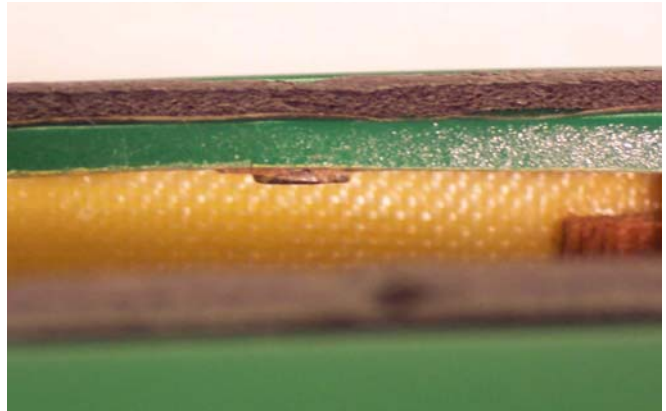


Photo 8: Small plywood supports and blindnuts glued under deck ledge (Hydroplane)

5: FINAL STEPS:

Remove the hatch and apply the DuBro foam tape around the perimeter of the deck ledge as shown in Photo 6. The foam tape provides a waterproof seal when the hatch is screwed onto the deck. In this example, the deck ledge was painted in advance of applying the foam tape to make the final hull painting easier. After the foam tape has been applied, cut small openings in the tape to allow the 6-32 screws to pass through the foam and into the blindnuts. It is recommended to submerge the sealed hull and hatch in the bathtub to test for leaks and determine how tight to screw down the hatch for a good seal. Typically, the hatch only needs to be tight enough to slightly compress the foam tape and hold the screws in place so they don't loosen when the boat is in operation. If leaks are observed around the hatch holes, use flat washers with the hatch screws to seal these openings.

Lastly, use small cardboard or plastic retaining washers on the underside of the screws to hold them in place in the hatch – see Photo 9. This makes it easier to handle the hatch and avoids lost screws. These plastic retaining washers happen to be the same size as those found on household 110V duplex receptacles and light switches, so they can be purchased from any hardware store.

You now have a waterproof hatch that is easy to install and remove, and looks good on your FE boat.



Photo 9: Plastic retaining washers installed



Photo 10: The finished hatch

