

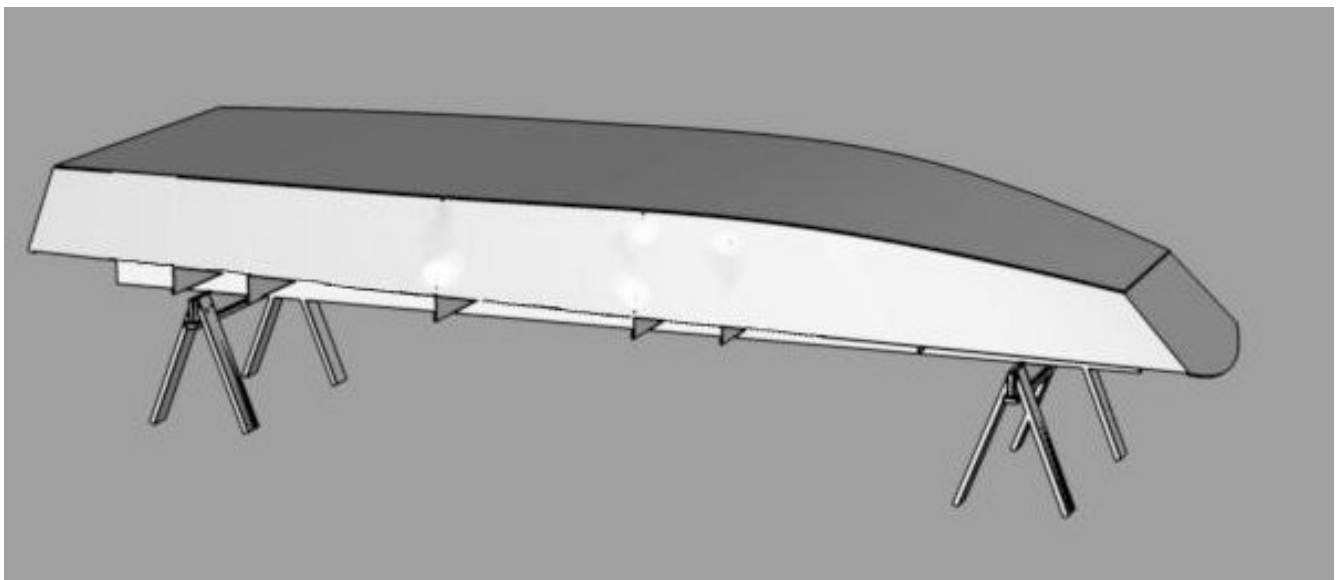
XF20 CNC cut plywood kit.

Use these notes in conjunction with our online tutorial "Building on a jig" and with the XF20 building notes.

"Building on a jig" explains how to set up a typical jig.

What follow is specific to your pre cut CNC kit.

To identify the parts, we include drawings of MDF and plywood sheet at the end of this file.



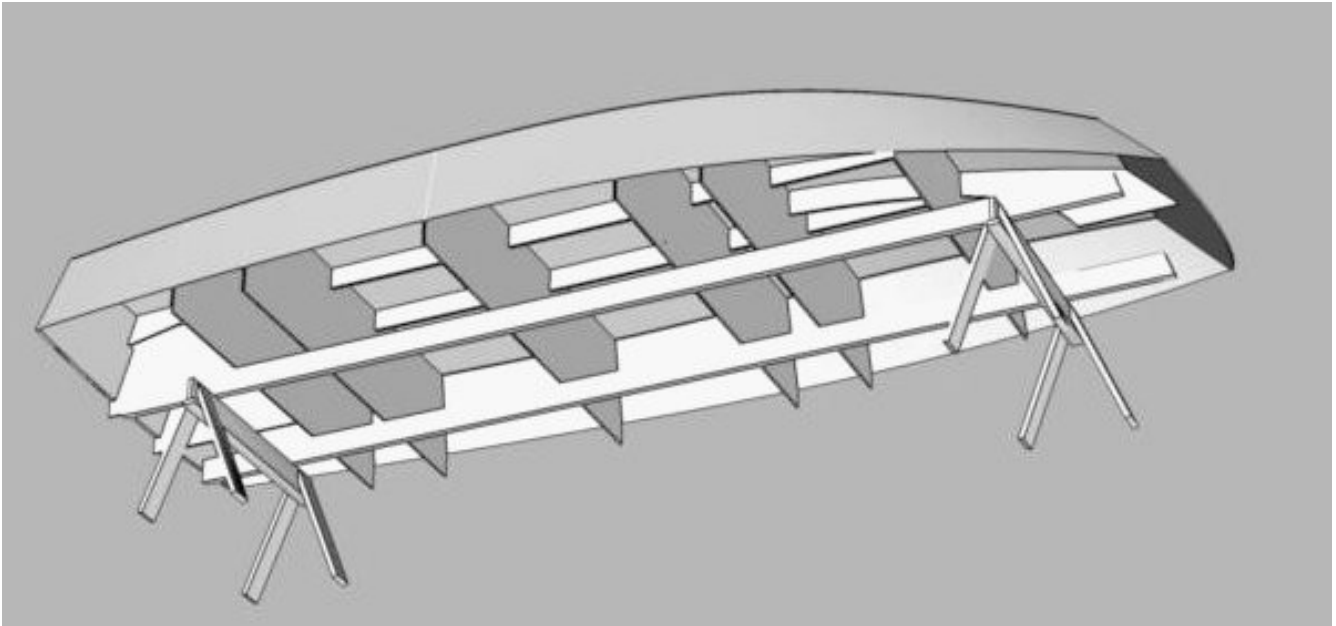
Jig:

The strongbacks are set on saw horses.

Saw horses height is unimportant but keep in mind that you should be able to reach as far as possible while fiberglassing the bottom.

Suggested dimensions for the strongbacks are 2x6 or 2x8 beams 18' long. Make them from 2 sets of 2x6 10' long.

Suggested spacing of the strongbacks is 36 to 40" between their outside faces. Wider would result in interference with the hull panels at the bow.



Assembled hull viewed from under the jig.

Jig parts assembly:

The building jig is made of MDF molds and some hull parts. It includes a bow mold and transom braces, the stringers and the transoms.

Unlike the ones on the plans, the stringers have shallow notches that will fit in the MDF mold notches. Later, those notches will be filled with small 1" piece of wood.

Before setting up on the strong backs, we must fabricate the stringers and the transom. For the stringers, glue the two layers of plywood together, offset the seam.

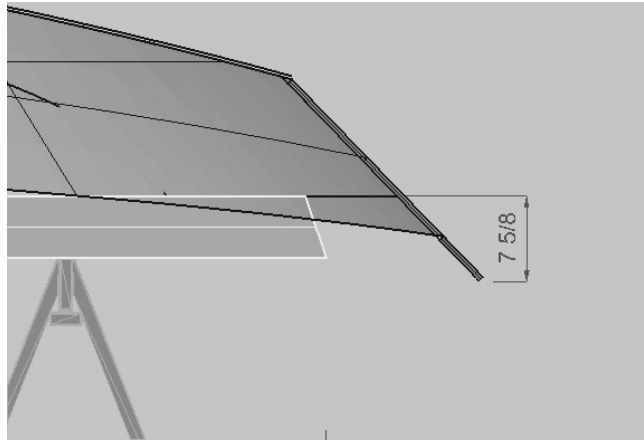
Transom: glue transom and clamping board parts together.

Assemble side panels and bottom with fiberglass splices. Note that we do not cut the tunnel opening at this point. It will be cut after the bottom fiberglass, see your XF20 building notes.

Jig assembly.

Warning: the tip of the bow transom is lower than the strongbacks. It is about 8" below the top of the strong backs.

If you do not use saw horses and put your strongbacks on the floor, the upper face of the strong backs must be at least 8" above the floor.

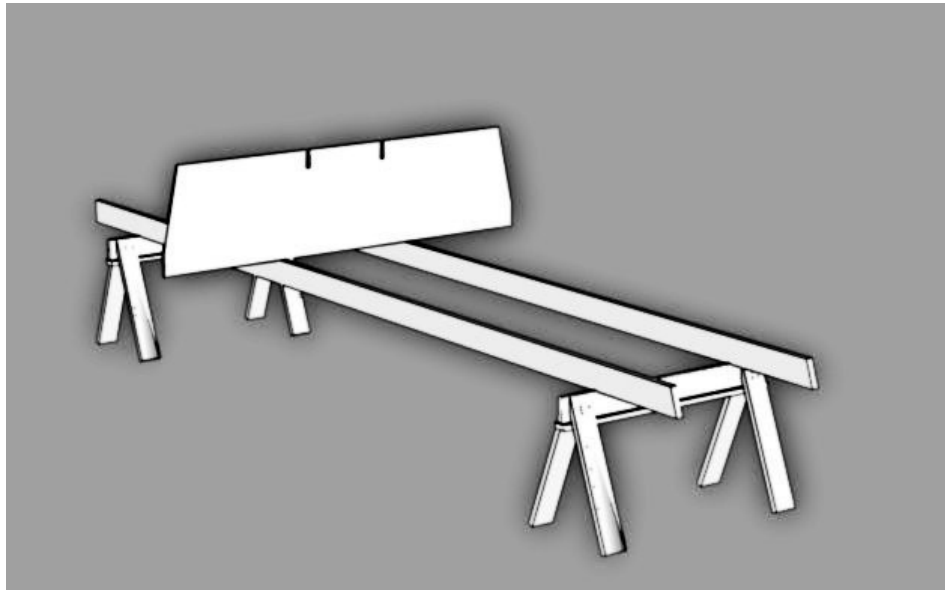


Step 1:

Set up strong backs on saw horses or on blocks at least 8" above an horizontal flat floor. The top of the strong backs will be your jig baseline. Check level and diagonals.

Step 2:

Install a first mold in the middle, use C clamps to temporarily hold it up. Do not worry about its exact location or straightness, the stringers will line things up.



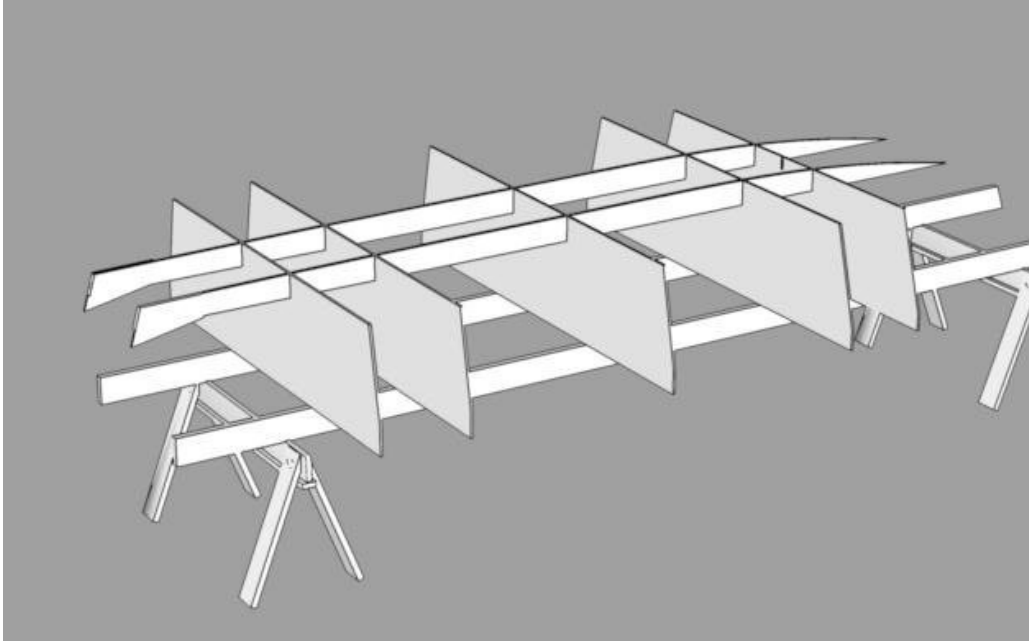
(Pictures do not show braces or lightening holes.)

Step 3:

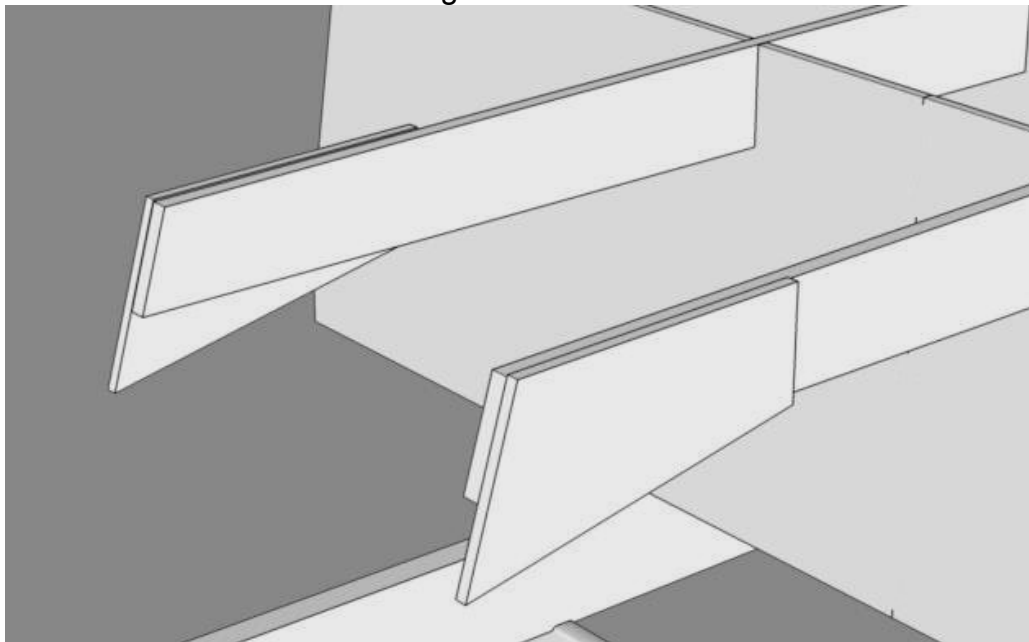
Install all other station molds except for the last one towards the bow. Push the stringers in the notches of the mold.

Note that we gave about 1/8" total clearance to each notch. That means 1/16" for one notch and 1/16" for the matching one. They should fit snugly but do not worry about gaps. If there is a small gap, the differences will even out.

Check diagonals between molds.



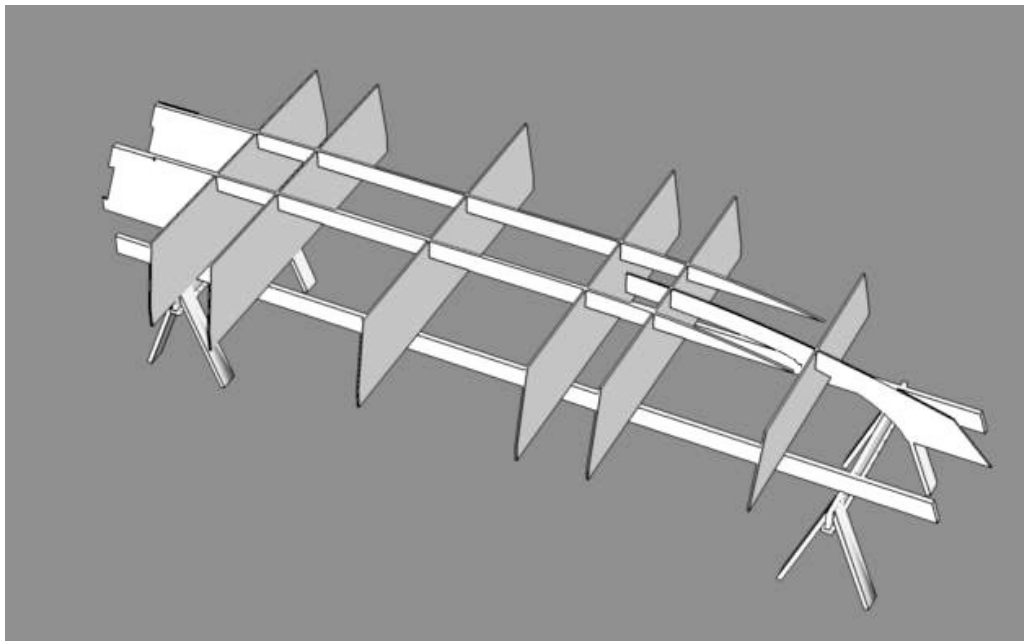
Note the small transom brace on the stringers.



Those are the plywood braces epoxy glued to the outside faces of the stringers. Some builders have made them higher. There is enough excess plywood to cut higher braces but as designed, the braces are sufficient for the specified 50 HP.

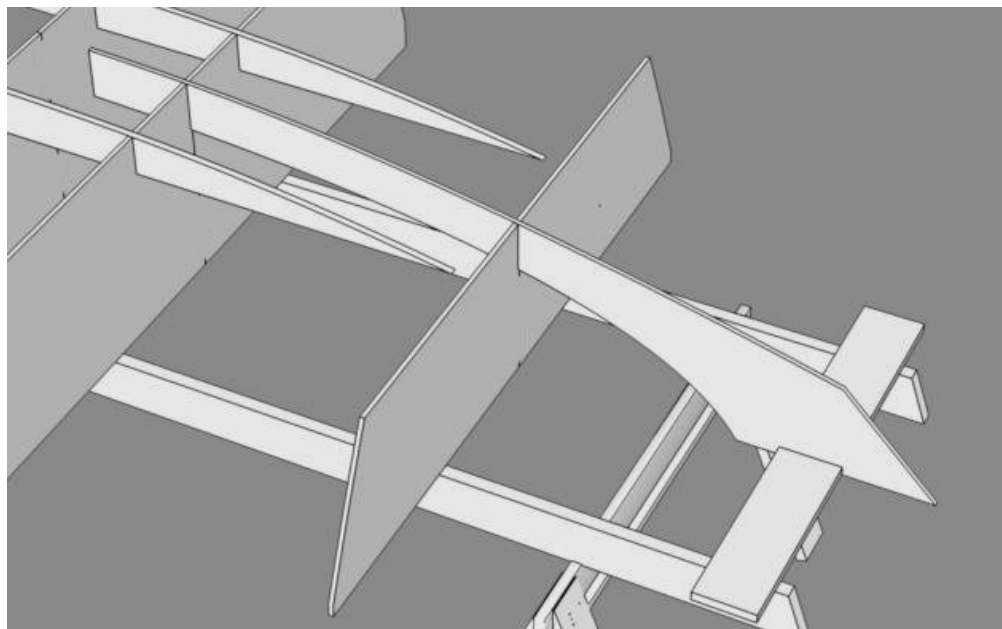
Step 4:

Install the bow mold with the forward mold and the transom braces.
The bow mold fits in notches in the two most forward molds.



Note that the lower edge of the bow mold is in the same plane than the other molds. This means that the lower edge is at the same level than the top of your strong backs. You must support the tip of that bow mold either with a vertical board or with a board across the strongbacks.

If you use a board across the strong backs, adjust the level of that edge by cutting it down or cutting a notch.

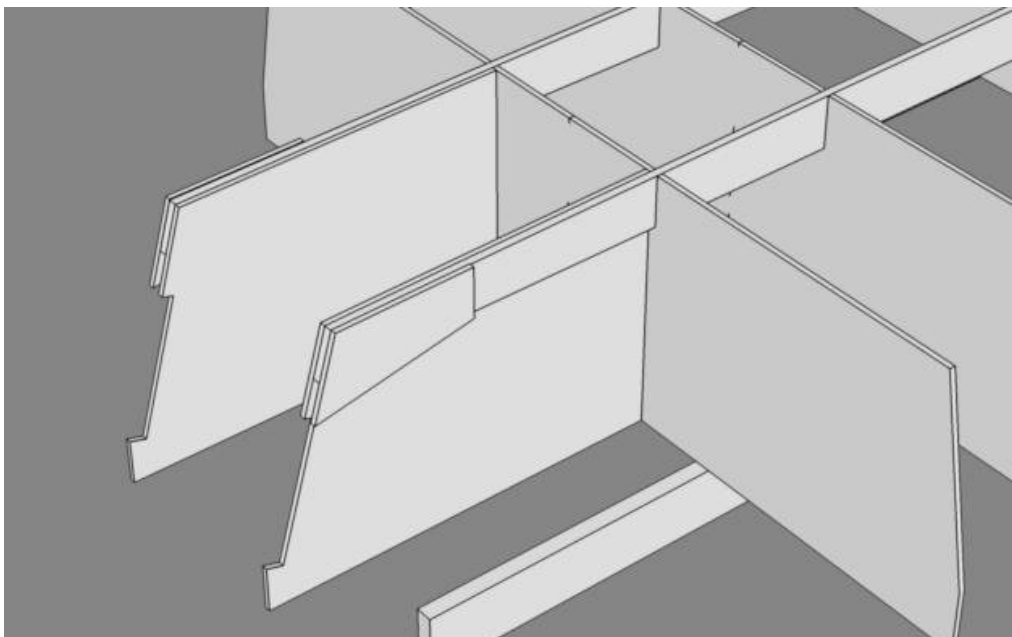


At the stern transom, we add two transom braces that will support and locate the transom and keep it at the correct angle.

Those braces are fastened to the inside face of the stringers. Use clamps or drywall screws. The braces are lined up flush with the stringers and butt against the last mold.

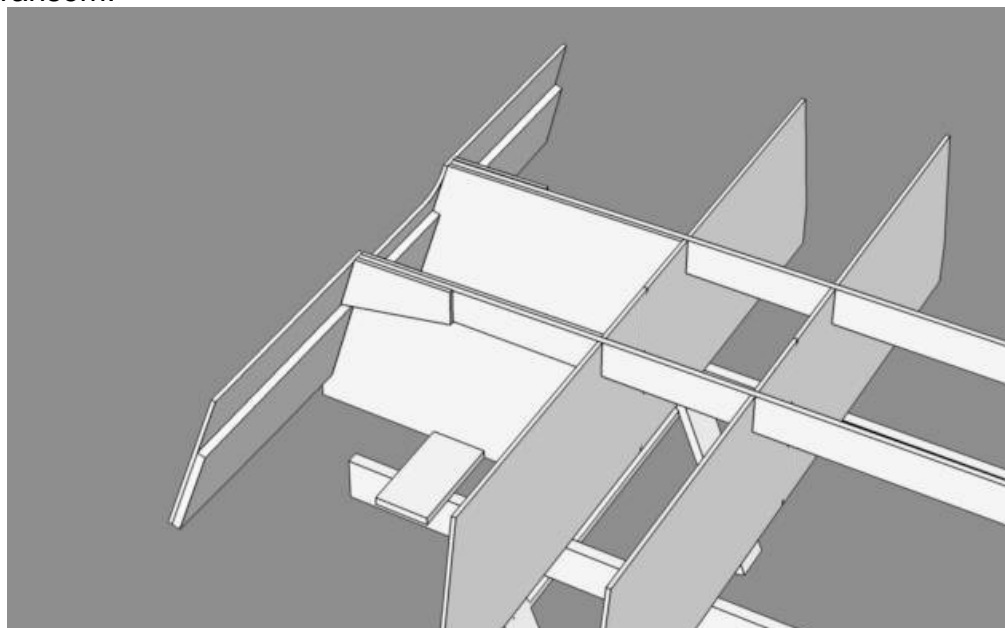
Use cleats in the angles between the mold and the brace and support the braces the same way than the bow mold. The transom with its clamping board is heavy and requires good support.

The braces are notched to receive the clamping board.



Step 5:

Install the transom.

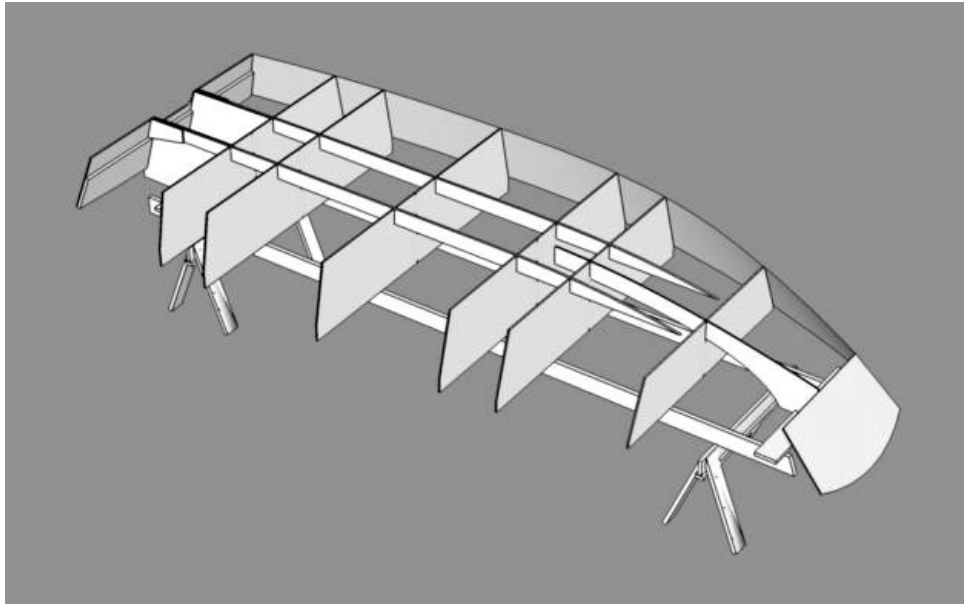


The transom is already cut for the tunnel.

Do not epoxy glue the transom to the stringers. You must be able to remove the stringers to fiberglass the inside.

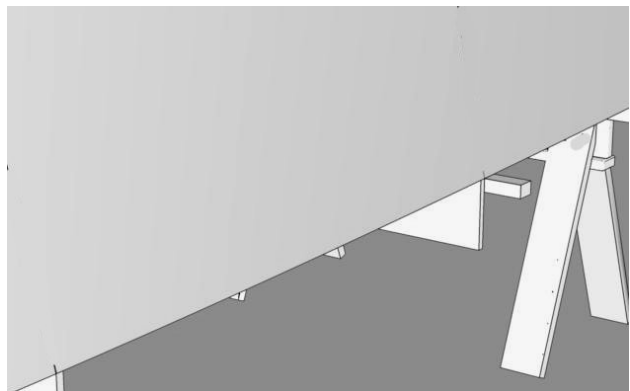
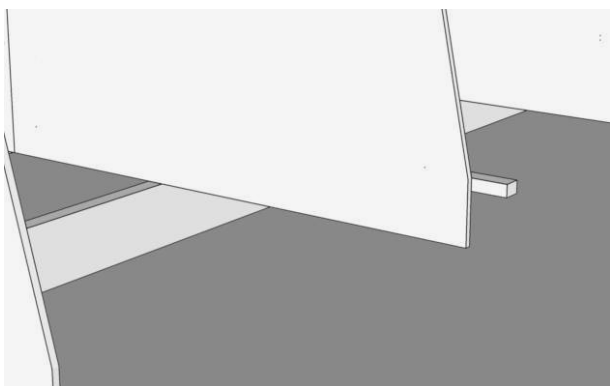
Step 6:

Install the bow transom (cleats on bow mold). Install a first side panel.



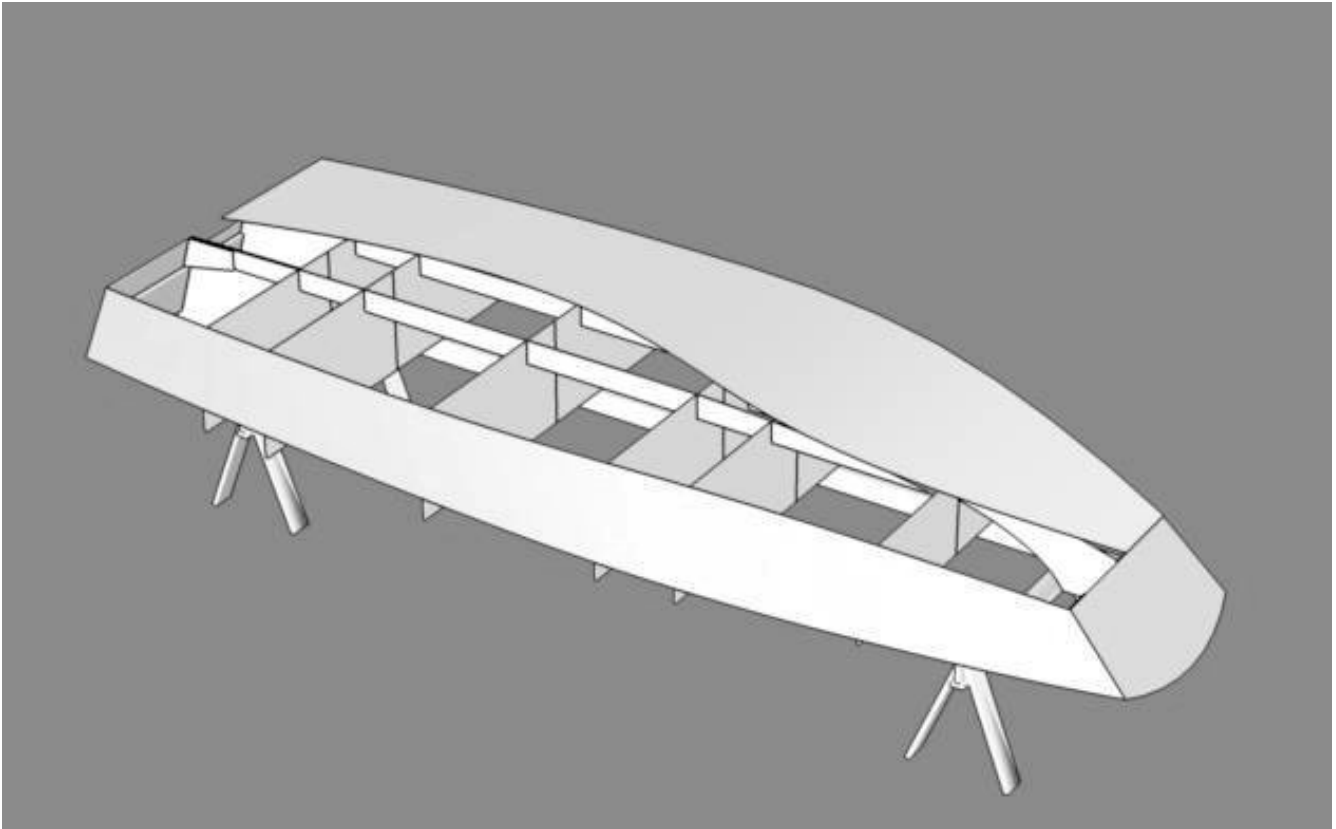
To support the side panel during installation, screw small temporary cleats at the sheer level. The sheer level is where the mold side becomes vertical.

You can also use clamps.



Step 7:

Install other side and bottom.



From there, the building proceeds as in the XF20 building notes: outside tape, outside fiberglass etc.

After flipping the hull, remove all molds. Before removing the station molds, mark their location. The frames are located exactly at the stations.

The station molds can help identify the frame parts.

The inside fiberglass, tunnel etc. is done as in the XF20 building notes but **there is a difference in the frames,**

Instead of using 1x3 boards to frame the boat, we use 1/2" plywood frames cut to fit. You will notice a small notch in the floor frames. This is to receive the sole stiffener shown on the plans. Since we can not predict what size of lumber you will use, we did cut that notch to a minimum: 1x1. You will probably use a 1x2 or 2x2, cut the notches to fit.

Kit sheets description.

MDF sheets marked with prefix M.

See XF20_all_MDF.PDF

Clockwise from top left:

M1: transom braces and bow mold.

M2: Mold D and mold E

M3: Mold C and mold C2

M4: Mold A and Mold B.

The molds are named from the bow and correspond to the frames. Mold A is at the first frame, the one at the end of the casting deck. B and C are the ones behind, the forward bench frames. C2 correspond to the floor frame in the middle. D and E are the rear seat frames.

Okume plywood 10 mm.

The layout is very close to the nesting on the plans. We show 2 sheets per page, same view than on the plans,

All hull parts panels are marked with prefix H.

See XF20_H1_H4.PDF :

H1 = hull side panels, tunnel sides

H4 = casting deck, stringer transom braces

XF20_H2_H5.PDF :

H2 = side panels

H5 = bench tops

XF20_H1_H4.PDF :

H3 = side panels, tunnel top and front

H 6 = all stringers

No PDF files for the bottom or sole. The nesting is exactly as on the plans.

Sheets H7 to H10 are the sole with a cut out for the tunnel.

H11 to H14 are the bottom panel, no tunnel cut out.

Okume 12 mm:

Sheet H15, is the same than on the plans but no tunnel or transom parts, those are on the 10 mm sheets.

Meranti 12 mm:

Those sheets are not on the standard plans because the standard plans specify frames made from 1x3 boards.

In the CNC kit, the frames are made from several pieces of Meranti marine plywood.

H16, see XF20_H16.PDF.

Two clamping boards, casting deck frame A, one above sole frame (D), 3 floor frame parts between stringers.

H17, see XF20_H17.PDF.

All the parts are marked on the PDF file.

Reminder: C2 is the floor frame under the sole, in the middle.

All the small floor frames will require some cutting to fit in the corners over the fiberglass tabbing.