

**HOW TO:**

**FOIL  
CASSETTE  
INSTALL  
INSTRUCTIONS**

# FOIL CASSETTE CONSTRUCTION

The foil cassette construction is 6lb density polyurethane foam. The foil tracks are standard 10.5 boxes and will fit most bolt patterns that is now the standard in the industry. Finally the top of the cassette box is capped layer of 4oz S Glass and 6oz 2x2 Carbon Fiber.

The cassette dimensions are 13in x 6.5in x 3.5in and can be installed in boards with a thickness of up to 3.5 inches.

# INSTALLATION INSTRUCTIONS

---

The following steps help detail the installation of the foil mount cassette. The cassette can be utilized in both new construction or as a retro install to an existing board. Either way the install process detailed below can be followed. For the strongest install result it is highly recommended that these foil mount cassettes are installed so that the high density foam block goes from the bottom to the deck of the board. The box is then capped with a strong lamination in order to provide a strong I-Beam install within the board so the load that foil is distributed.

# INSTALLATION STEPS

The following install can work for new construction or retro install. The only difference is with a new construction install, I recommend that after the blank is shaped that the board at least have one layer of lamination. This will provide strength to the board as the cassette install process requires a cutout that will go all the way through the board where the foil cassette will be installed. If you attempt this with just a foam shaped blank with no lamination then you risk breaking the blank.

## STEP 1 - SETTING INSTALL CROSSHAIR ON CASSETTE

The first step in the install is to identify where you want to install the cassette. This can vary base on the size of the board. There are plenty of resources available online to help determine your foil cassette placement so these instructions will only discuss the process of the install.

1. Prep Foil Mount Cassette by marking the center point and drawing the center point cross hairs on the cassette box. I do this by using a center line ruler and the tracks as reference to mark the leading and trailing edge of the box for the centerline (this will align with the boards stringer) and then mark the cassette side center point by using the track bolt entry square as your reference. At this point you should have four points of reference for the cross hair marking. Now connect the points by running the center and side points down the sides and across the bottom of the box. The most important line marking on the cassette is the centerline that will match up with the stringer or if the board is stringerless a center line marking that is placed on the board to ensure alignment. I just use a black sharpie to set these lines. For full visibility, I like to run the lines down each side and across the bottom (side that does not have the foil tracks)

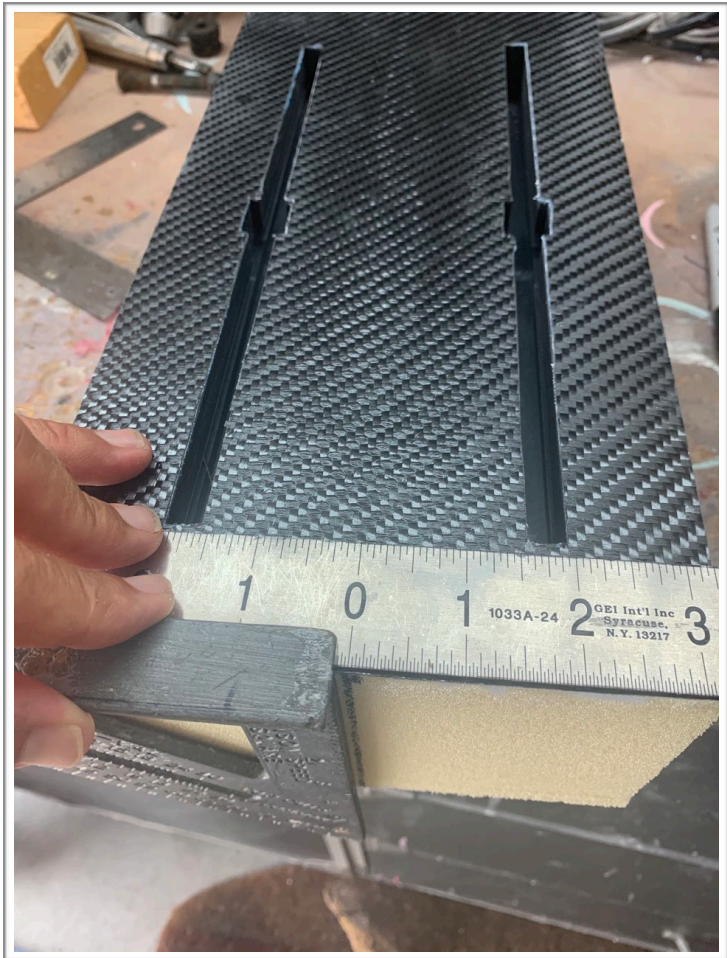


Figure 1 - Finding Centerline on Cassette



Figure 2 - Completed Crosshair on Cassette

## STEP 2 - SETTING INSTALL CROSSHAIR ON BOARD

2. Set the cross hair target zone on the board exactly where the foil mount cassette will be installed. You will want the cross hairs on the foil mount cassette to match the cross hairs on the board.
3. Now set the foil mount cassette (foam side on the board) so that the target cross hairs on the box match up with the target cross hairs on the board.
4. Ensure that the target cross hairs are in alignment then securely hold the foil mount box in place and using the sharpie draw the outline of the box on the board.
5. There should now be a box the same size as the foil mount cassette drawn on the board. This is the target area that will need to be removed for the box install.



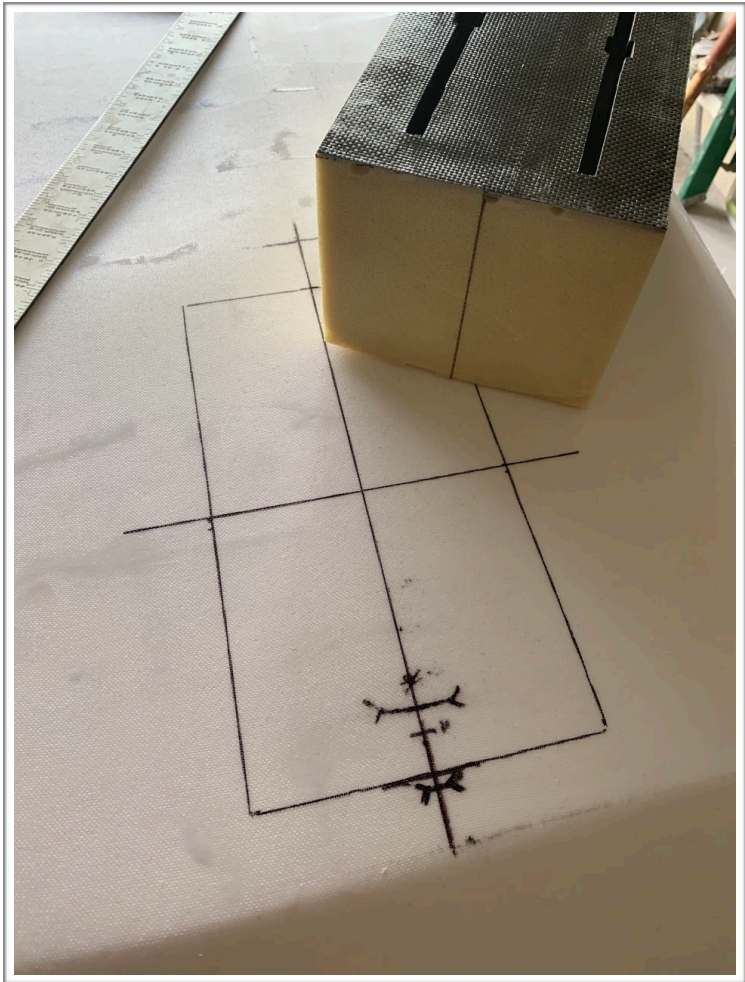


Figure 3 - Board Target Crosshair

## STEP 3 - CUTTING OUT BOARD

6. There are many ways to approach cutting out the area where the foil mount box will be placed. But the key is to keep the cut as close tolerance as possible and ensuring that the target cross hairs on the board and the cassette stay in line after the cut is complete.
7. I have have found the most efficient and accurate way to make this cut is with a long shank jigsaw blade. Use a jigsaw blade that can accommodate the thickness of the board in a single pass. to provide the cleanest results. (You can also use a router or even hand saw if you are very careful. But key is to be very careful and ensure your cut is square and right angle to the bottom of the board)
8. You can drill out a starter hole in one corner to be able to set you jigsaw in place. Then carefully cut out the box that

you drew that matches the size of the foil mount cassette.

9. Once the cut is complete, this block of the board can be removed and you will be left with a void that should be very close to the size of the cassette being installed.

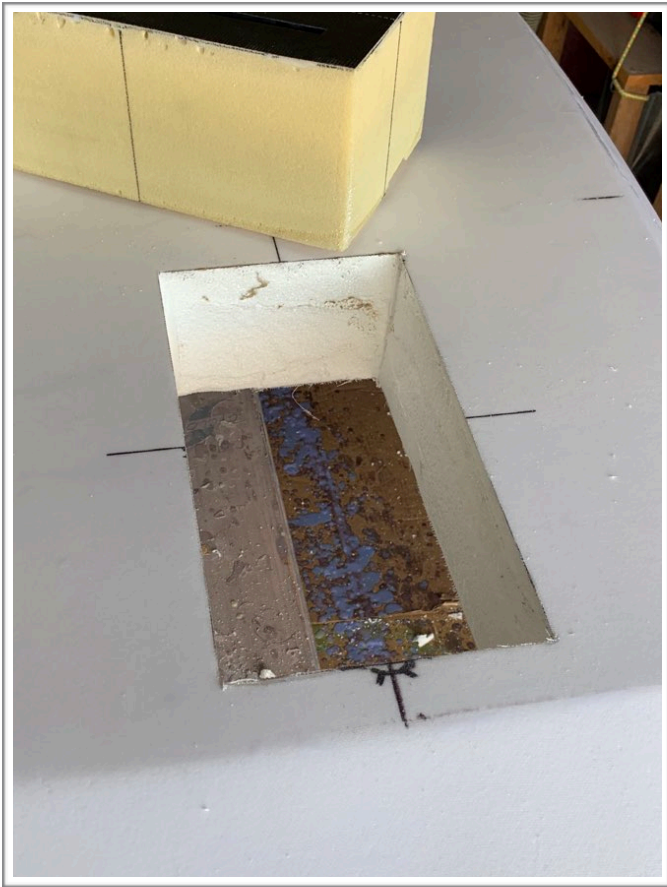


Figure 4 - Board cut out for cassette

10. At this point you can take the foil mount cassette and slip it into the void to ensure that cut is accurate. You are looking at the target cross hair markings to ensure box alignment. You can make minor adjustment if needed. This can typically be made with a hard sanding block
11. You also want the high density foam of the foil mount cassette to extend beyond the deck of the board when inserted. The excess will be cut down later after the cassette is put into place and this will insure a solid deck to bottom install.

## **STEP 4 - SETTING UP CASSETTE FOR INSTALL**

12. There are two key alignment areas which you need to pay close attention to when installing the Foil Mount Cassette. The first was addressed above with the centerline target cross hair marking which should ensure the foil is straight in the board. The second area of attention

is that the foil box is flush with the bottom of the board. This installation will assume that the bottom of the board is true to the foil wing i.e. if the box is set level to the bottom of the board the wing will be in the desired flight position.

(Note: if this is a retro install to a non foil specific board such as a surfboard or sup then there may need to be consideration taking with the leveling of the foil cassette for optimum flight position which is not going to be covered in these instructions)

13. To achieve a level cassette position relative to the bottom of the board, I recommend the use of a very simple install jig which can be attached to the box tracks and the same t-bolts use to mount a foil. So when I said simple it is just a small flat board that is slightly larger than the hole where the cassette is being installed. Additionally but not required, I actually use a tuttle adaptor plate attached to the alignment board then attached it to the cassette as it provides a good handle to insert and

make needed minor adjustments during the glue in process.



Figure 5 - Alignment Board attached to Cassette and tuttle plate

14. When putting together the foil mount cassette and the alignment board you

want to tape off the top of the cassette and the bottom of the alignment board (This will help keep excess glue from getting on these parts.) After taping it off then piece together the alignment board and cassette using your standard mounting T-Bolts. Note: make sure you draw any needed alignment markings on top of tape for quick reference during install.

## **STEP 5 - PREPARE FOIL BOARD FOR INSTALL**

15. The foil board itself at this time has the install hole and the target crosshair marking. Now you want to tape off the outside of the hole on both the deck and bottom. This will help keep excess glue from getting on board after the glue up process. Note: again may need to redraw alignment marking on top of tape for quick reference during install.

## STEP 6 - CASSETTE INSTALLATION

16. At this point you have the board prepared with the area cut out where the foil mount cassette will be installed. Both the board and the cassette are clearly marked with target crosshair lines showing the center alignment for the install and finally the foil mount cassette has been fitted with an alignment board which is used to ensure the foil mount cassette is installed flush to the bottom of the foil board.
17. In lieu of any sort of epoxy resin or resin slur being used for this install I highly recommend the use of Original Gorilla Glue. This glue is an expanding polyurethane adhesive that is fast setting and will expand into every void and crevice for a very secure install. Plus you will not risk any sort of



exotherm which may occur if epoxy resin pools.

18. To prepare the gorilla glue pour about 3oz to 4oz in a paper cup. Note: You want enough glue to be able to spread a thin layer on the inside walls of the cut out. To activate the glue add a very small amount of water to the glue and then vigorously stir the glue. (I attach a wire beater shaped out of a coat hanger on the end of a cordless drill to mix the gorilla glue and water.)
19. Once activated the clock is ticking and the glue will start to expand. At this point you want to spread a thin layer of glue on the inside to the cutout wall and ensure there is coverage around the entire interior of the cutout.
20. Once the glue is spread take the foil mount cassette and slide it into the foil board making sure that the target crosshair marks are all in alignment.



Figure 6 - Foil install aligned to crosshairs

21. At the same time make sure that the alignment board attached to the foil mount cassette is completely flush against the bottom of the foil board.
22. Hold the foil mount cassette in place and allow for the Gorilla glue to expand and set. (You can place a weight if needed.) Take care not to let the box

come off its alignment marks as the glue expands. You will see glue exiting around the seam of the box and board as it expands and fills all the voids between the box and foil board.

23. Once the glue has set and hardened you can remove the alignment box, pull the tape and clean up any excess glue that expanded beyond the seam.

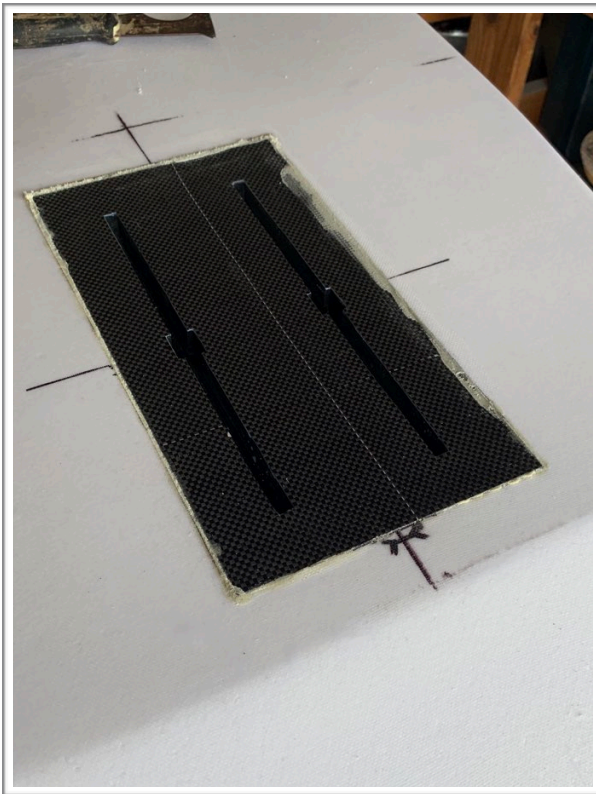


Figure 7 - Tape pulled after install

## **STEP 7 - CUTTING THE DECK HIGH DENSITY FOAM**

24. Flip the board over and there should be the excess high density foam of the cassette extending beyond the deck of the board. This foam needs to be cut down so it is flush to the deck. I use a flat hand saw and lay so that the deck is being used as the guide and saw off the excess foam. After the cut you can use a sanding block or pad to clean up the foam and blend into the deck.



Figure 8 - Protruding High Density Foam on Board Deck

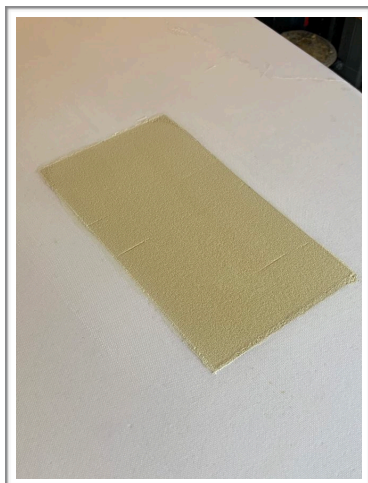


Figure 9 - Foam cut flush to deck

# STEP 8 - CAPPING THE DECK AND BOTTOM

25. At this point the cassette should be flush to the board on both the bottom and deck and the target cross hair marks should be in alignment so that the box is installed on the boards center line.
26. The final step of the install is to cap both the deck and the bottom of the foil mount cassette.
27. For capping the boxes I recommend using 1 layer of 4oz S-Glass and 1 Layer of 6oz Carbon Fiber.
28. Cut the glass/carbon so that it extends at least 1 to 2 inches beyond the perimeter of the foil mount cassette. This will ensure the foil load is somewhat distributed beyond the seam of the box.
29. These instructions will not go into the details on glassing. But you will need to cleanly tape of the box tracks. Tape off tracks and closely trim it to the edge of of the track to ensure the cap lamination

has a tight bond right up the the edge of the track boxes.

30. One other suggestion is if you do have some imperfections or voids at the seams, the use of a resin cabosil slur can be spread to level these then follow up with the S-glass/Carbon lamination schedule. Note: if you do not use carbon fiber then I would suggest at least 3 layers of S-glass or comparable schedule.

# STEP 9 - FINISH

31. At this point you have finished the box install and your board build process can continue from here. If it is a retro install into an existing board then you are good to go.



Figure 10 - Finished Instal