

Kam-Aero 43% Extra 300.

Fuselage Sides Assembly:

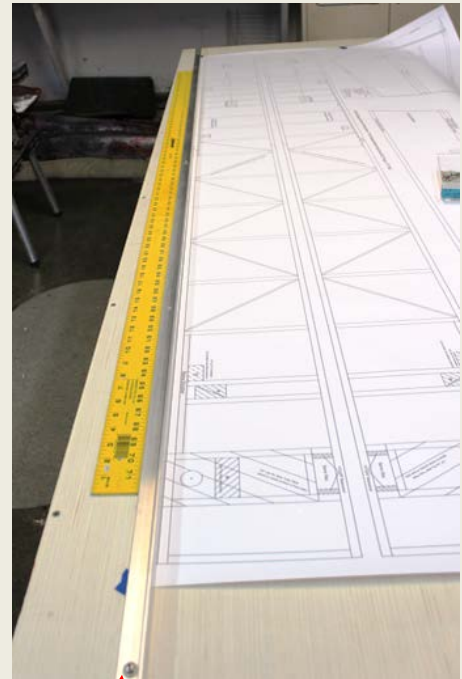
With the MB complete (or clamped and drying) now it's time to begin assembling the fuselage sides.

You will need:

- The plans page with the fuse side view diagrams (left and right).
- A straight edge long enough to run the length of the fuselage sides.
- 8 - 3/8" x 3/8" x 48" longeron sticks (marked with red dye on the ends).
- Pre-cut 3/8" x 3/8" vertical truss members.
- 2 - 1/8" Aircraft ply upper longeron-plate support rails.
- 8 - 1/8" x 4" x 48" balsa fuselage side sheets.
- 2 - 1/8" lite ply stab socket support plates.

- Start by securing your straight over the plans to the table (don't forget to place waxed paper or plans protector over the plans prior to securing the straight edge). The straight edge must be aligned with the **top longeron** of the fuselage side you are assembling.

- I screw the straight edge to the table with 3/4" #6 sheet metal screws.



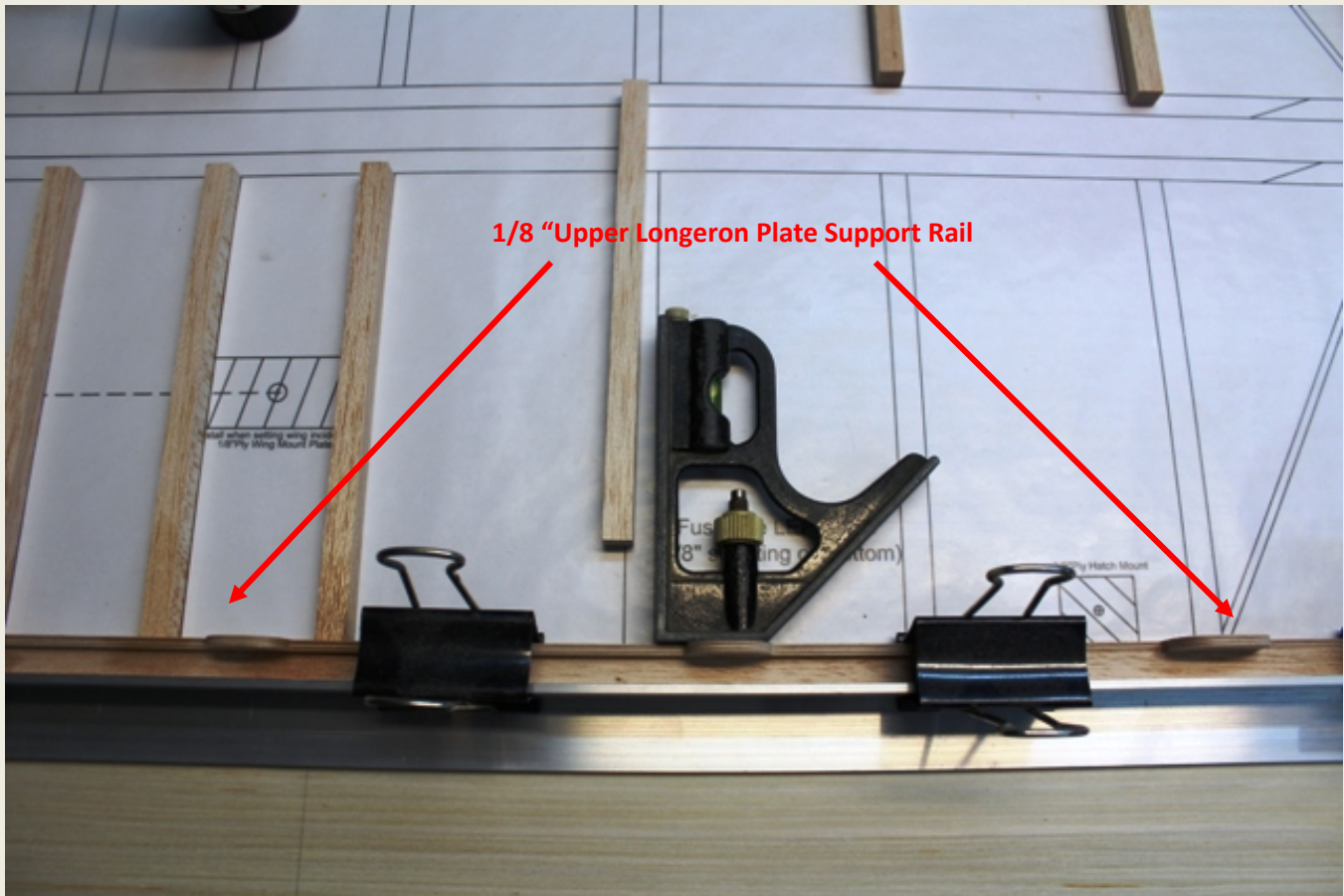
- Using the 8 pre-marked 3/8" x 3/8" sticks, splice the sticks together to form 4 longerons. Make a miter jig or clamp a fence to a sander to create the miter angle on the ends that will be glued together.

- Cut a longeron to length and clamp it to the straight edge per the plans.



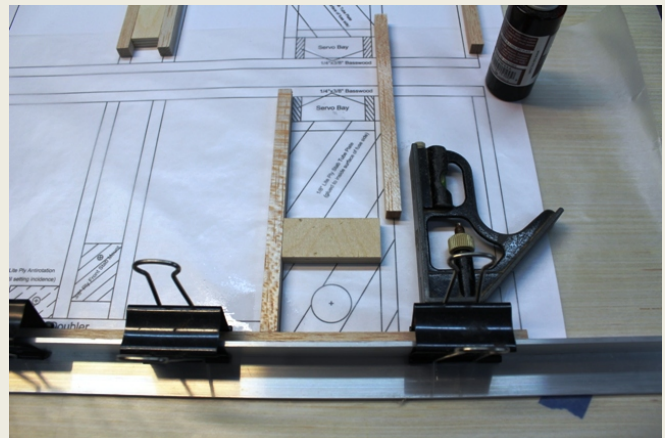
**1" x 1" x 96"
Aluminum angle stock.**

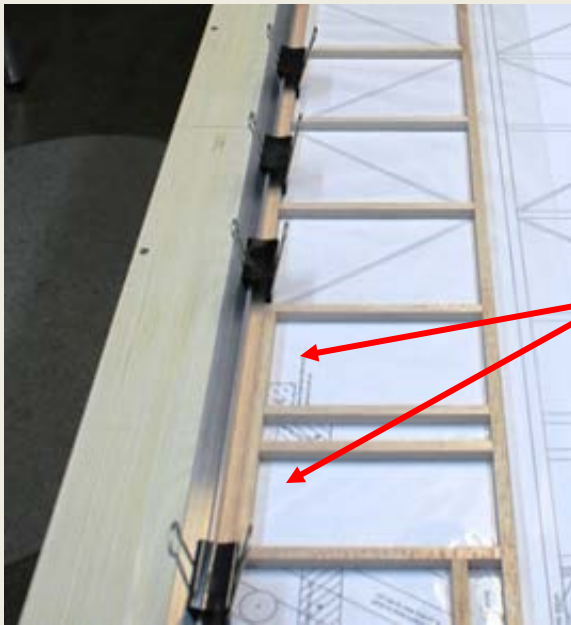
- With the longeron clamped in place, locate and glue in place the upper longeron plate support rail. Note: make certain it is oriented in the proper direction.



- Position (but do not yet glue) the vertical truss members in place per the plans. Note: there are three different height vertical trusses used; pre-positioning them ensures that you use the correct truss member in the each location.

- Position, but **do not** glue at this time, the 3/8 ply anchor blocks in place over the plans. Note: the blocks function as spacers / place holders to ensure the truss members are properly spaced such that the blocks can later be glued in place.





- Using 3/8" x 3/8" left from cutting the longeron to length, cut and position a longeron doubler per the plans.

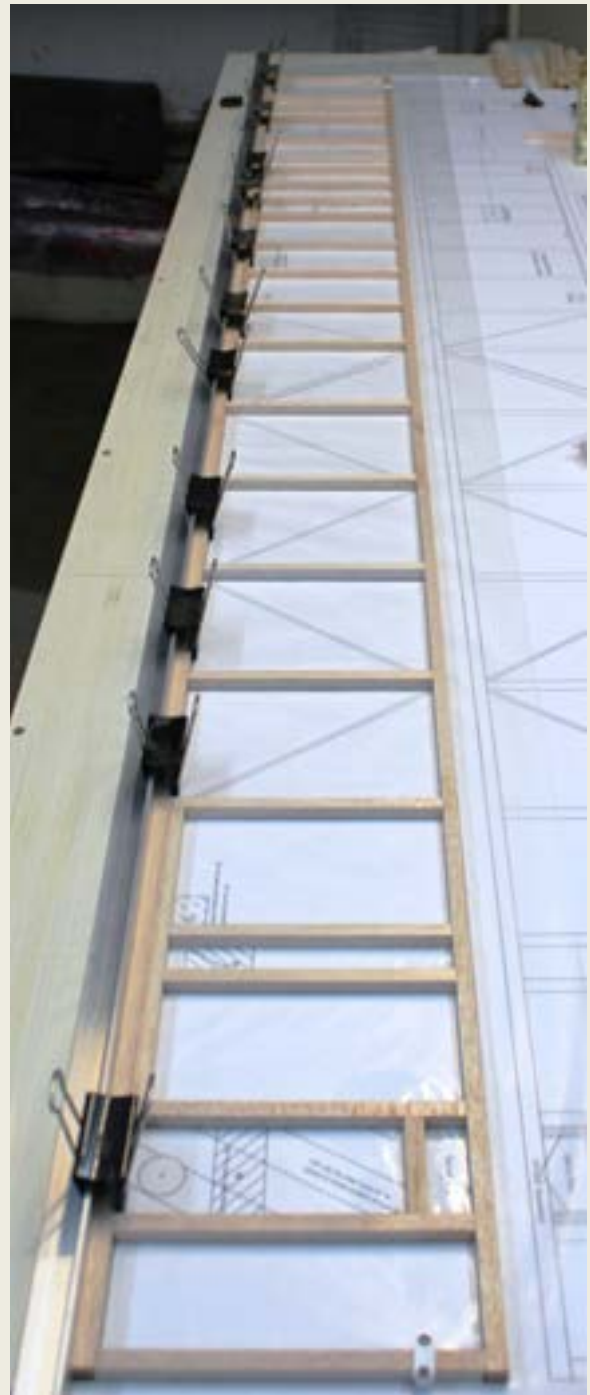
Longeron Doubler cut from 3/8" x 3/8" Longeron stock.

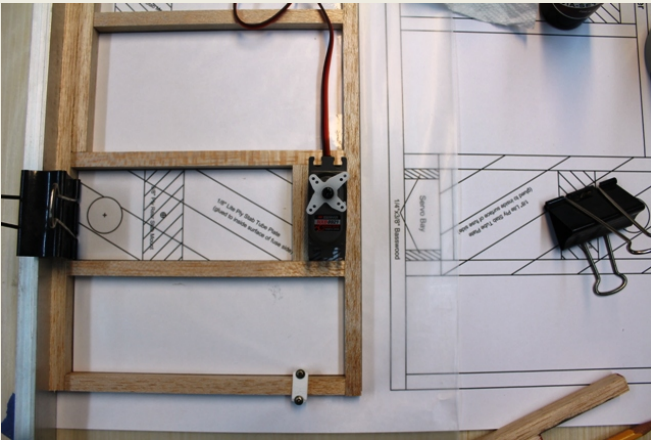
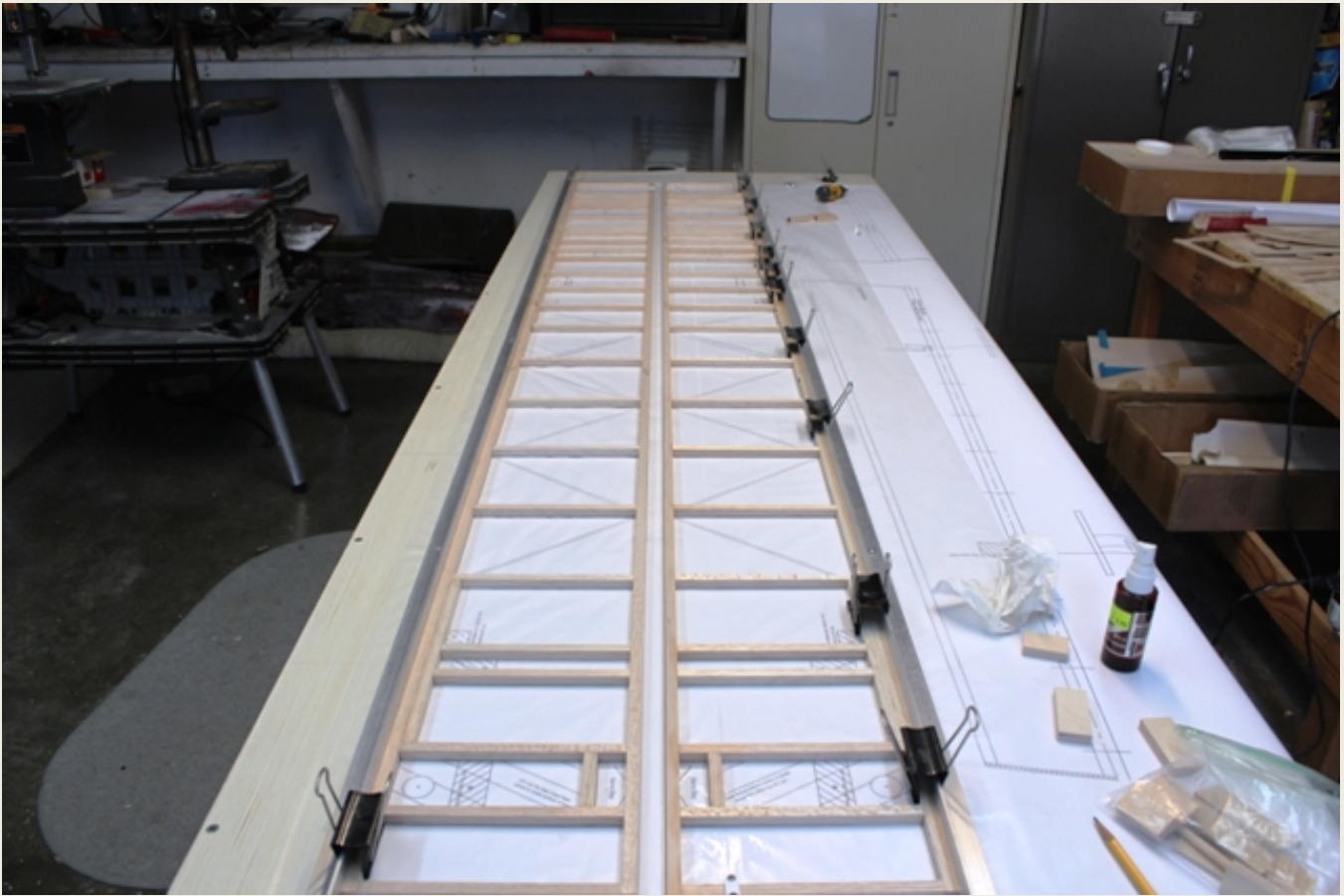
- Once you have positioned all the truss members in their proper locations, glued in place the Upper Longeron Plate Support Rails and the Longeron Doubler, you now begin gluing in place the vertical truss members. Use a square and work from one end to the other, gluing each truss in place. Note: I use medium CA to glue the trusses in place, if you are using an aliphatic resin like Titebond, you'll need to pin or otherwise secure each truss in place while the glue cures.

- With all the vertical truss members glued in place to the top longeron, cut, position, and glue in place the bottom longeron. Note: make certain all of the vertical truss members remain true and square to the top longeron by either pinning in place or weighting them while gluing the bottom longeron.

- Repeat the process for the second fuselage side.

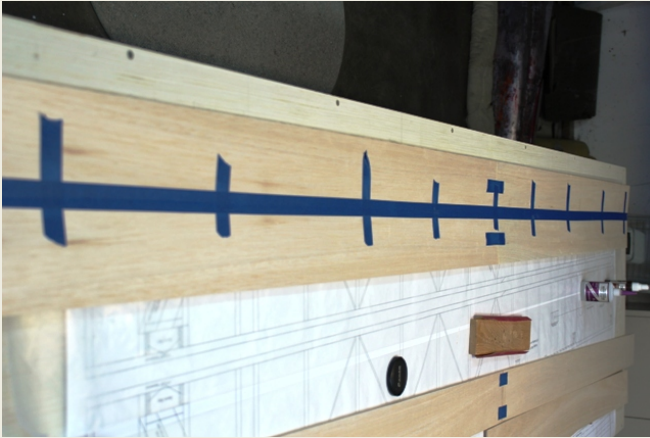
Note: Do not build the second fuselage side over the side drawing you just used! Make sure you move your straight edge to the second (unused) fuse side diagram before starting the second fuselage side. This ensures that you build a left and right fuselage side.



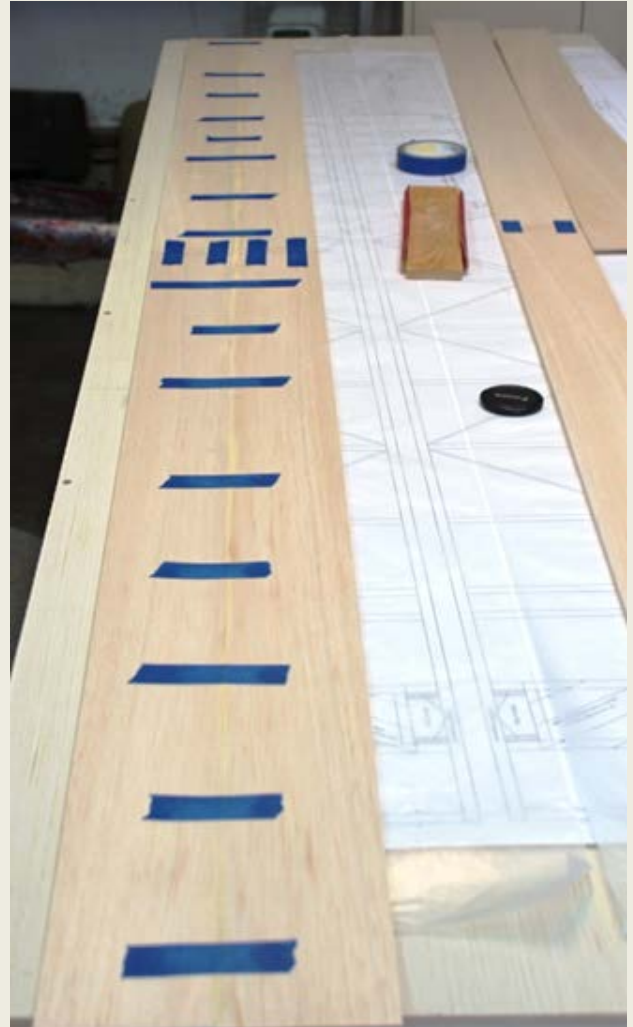


- With the basic crutch structures complete, cut in install the rudder servo mounts. Use $\frac{1}{4}$ " x $\frac{1}{2}$ " basswood rails for the servo mount hard points. Use a scrap of $\frac{3}{8}$ " longeron stick for the upper servo bay brace.

- Using the eight 1/8" x 4" x 48" balsa sheets, make the fuselage side sheeting. The sheets are edge trued on one long edge. Tape and glue two sheets together along the long edge to create a 1/8" x 8 x 48" sheet. Repeat, and then end glue the two together making a 1/8" x 8" x 96" fuse side.



- Weight the fuselage sides to keep them flat while the glue dries.
- When the glue has cured, remove the tape from the fuselage side sheeting. Lightly sand and choose the best side of each to be the outer side, I like to mark the inner as the glue side.



- With the side sheeting completed, glue the truss structure to the side sheeting. Make certain that the truss structure remains straight and true by using your straight edge and aligning the top longeron of your fuse sides to the straight edge. Position the truss structure over the side sheeting such that the side sheeting joint is lined up over one of the vertical trusses.



Vertical truss member lined up over the vertical glue joint in the side sheeting.

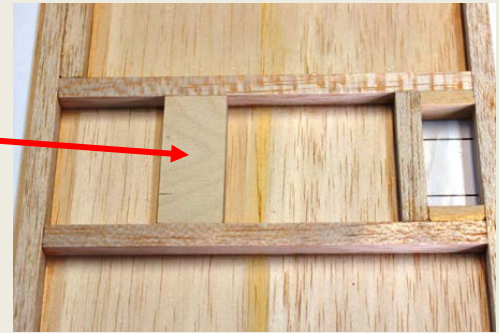
- Glue the truss sides to the 1/8" fuselage side sheets.
 - I use thin ca with a fine tip applicator for this, running a light bead of ca along each side of the 3/8" sticks, allowing it to wick between the 3/8 balsa stick and the sheeting, then press in place.
 - Another option is to use an aliphatic resin such as Titebond 1. If using this method you'll need to apply a light bead of glue to the 3/8 truss structure (on the glue side), align it on the 1/8" side sheeting then weight it in place while it cures.





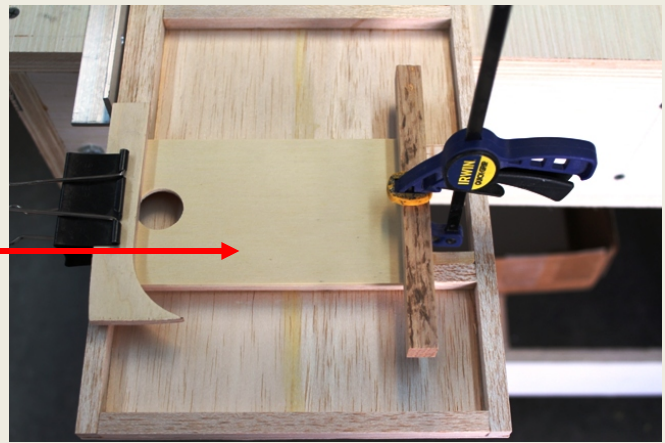
- Trim the top, bottom, and ends of the fuselage side sheeting so that it's flush with the 3/8" truss structure. Make certain the top longeron edge stays straight and true.
- Locate and glue in place the 3/8" ply pads for the rear stab mount anti-rotation screws.

3/8" ply pad.

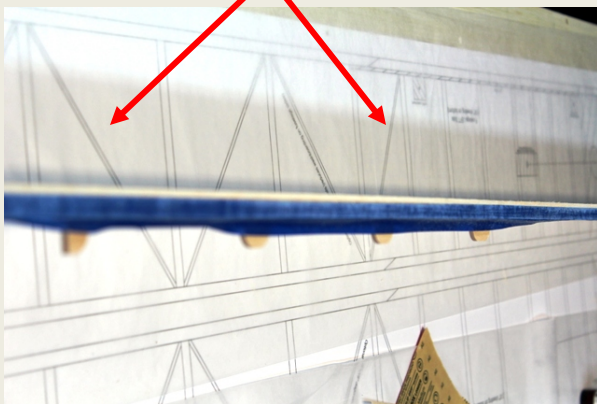


- Locate the 1/8" lite-ply stab socket support plates.
- Carefully align the stab socket support plates so that they are equally positioned on the left and right fuselage sides. Mark each in several places so that the position is easily repeated, glue and clamp in place.

1/8" Lite-Ply Stab Socket Support Plate



- Install the optional 1/8" x 3/8" diagonal side if you are using them.



- I install the remaining hard points later in the build process.
- This completes the fuse side assembly, the next step is to mate the motor box and fuse sides.