

Pre-Paint>Wings>Fit fuel tank filler body

Objectives of this task:

In this task the fuel tank filler body location will be determined for each wing, a hole will be drilled into the upper wing surface and a smaller hole will be drilled into the wing tank and then the filler body will be fitted and then flocked into place and covered with peel cloth while the flock cures.

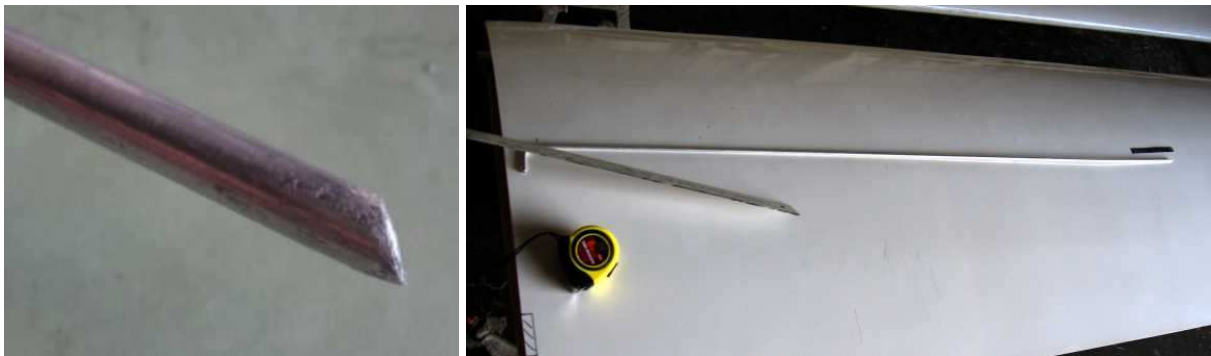
Materials required:

from Card # J11 'Fuel Components' 2 x fuel tank filler bodies: →
Epoxy resin and flock

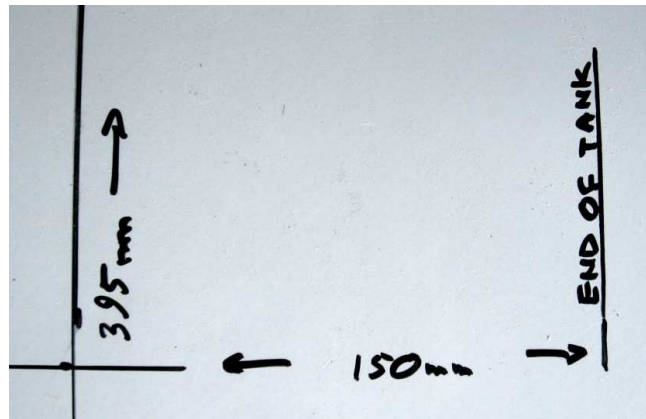
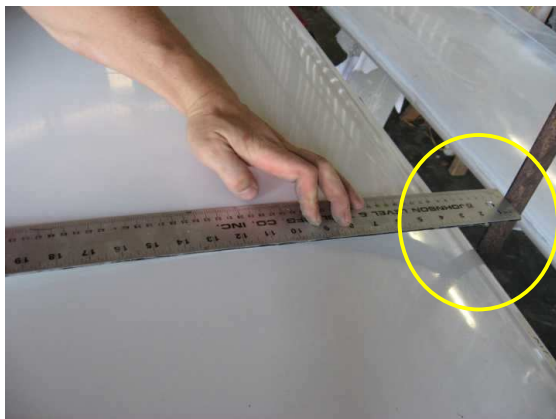


Mark the position of the opening

First we need to mark the side-to-side distance from the wing root to the centre of the filler body opening and in order to do this we must determine the exact length of the wing tank. To do this take the supplied breather tube and shape the end to a point as shown below. Feed the breather tube into the tank from the top front wing root fitting and carefully work it past the tank ribs until you find the end of the tank.



Mark the breather tube level with the wing root at that point then withdraw the tube and mark where the position of the end of the tank on the top of the wing. Measure back **150mm** from that point and that is the initial side-to-side location of the filler body. Repeat the process of finding the end of the tank and measuring back **150mm** on the other wing and then make any adjustments that may be required to make both filler bodies the same distance from each wing root. Mark this final side-to-side position of each filler body.



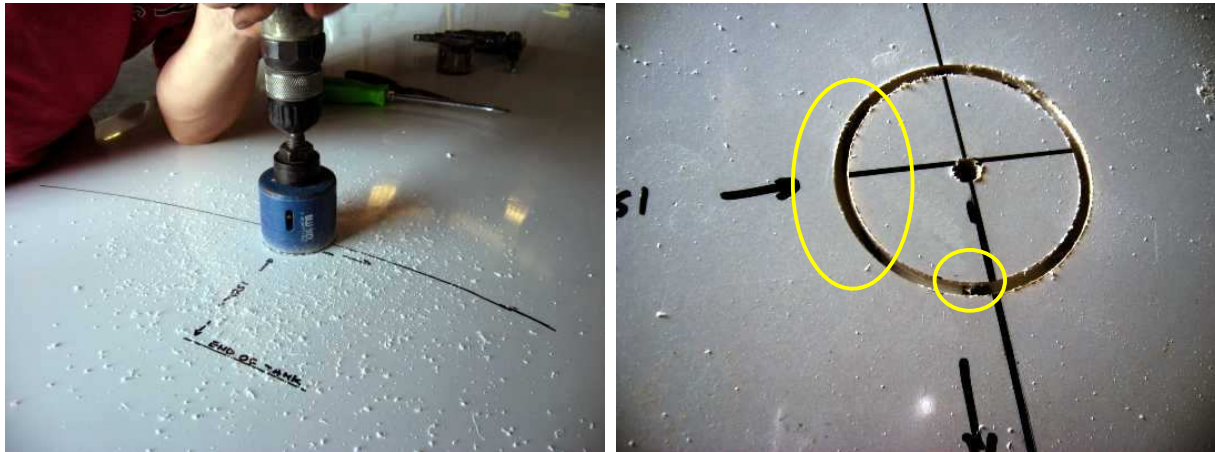
Take a set square and place it under the wing and against the leading edge and then measure back **395mm** from the leading edge – mark this fore and aft position of each filler body.

Cut the opening

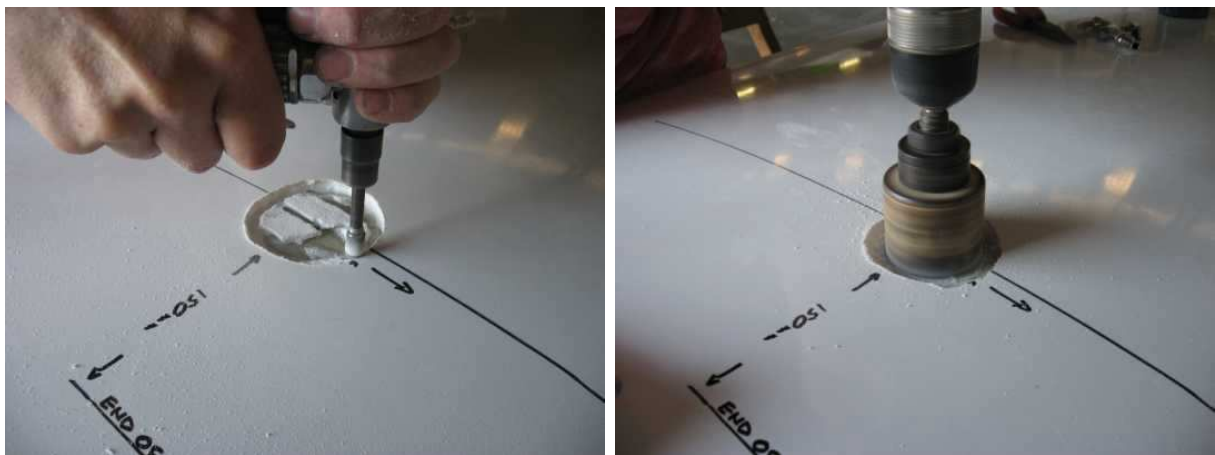
Now we can drill through the outer surface of the wing with a hole saw, clean away excess filler and then drill a slightly smaller hole into the wing tank.

During cutting care must be taken to prevent any drilling waste from falling into the tank.

If you have a compressor and an air line with a variable flow valve you could place a line into the tank through one of the wing root fittings and **very slightly** pressurise the tank, but be careful to only use a small amount of pressure – too much pressure may rupture the tank! Otherwise you could have someone hold a strong vacuum cleaner nozzle near the hole saw while you are drilling, but whatever you do make sure that **no** waste falls into the tank.



Drill a 66 - 68mm hole into the upper wing surface **only**, and *not* into the fuel tank. Hold the drill at right angles to the wing surface and very gently drill until you can see darkness at the bottom of the cut (as indicated in the yellow circles in the photo above right) this will mean that you have reached the gaps in the expandable filler between the upper wing surface and the fuel tank.



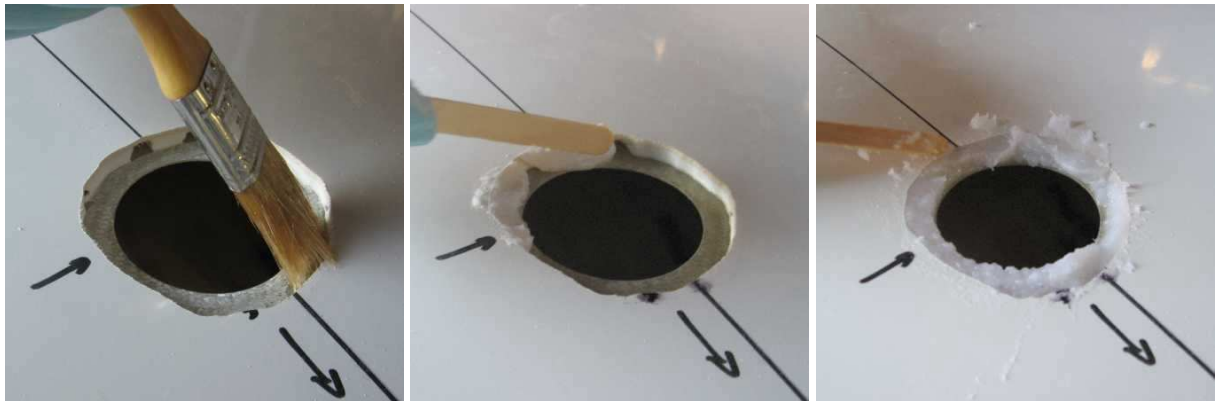
Lever out the cut out piece and carefully grind away all of the filler until you reach the top of the wing tank, then check that the top of the tank is flat and drill a 54mm hole into the tank, taking care not to drop anything into the tank. If the tank drops away at the front then it has moved back slightly during wing construction and you must move the hole back until you can drill through a level part of the top of the tank.

In these photos, taken in our factory, the tank has been slightly pressurised so that all waste is blown away from any opening, but a vacuum cleaner hose held close to the surface being cut could achieve much the same result. Alternately you could invert the wing and drill up.

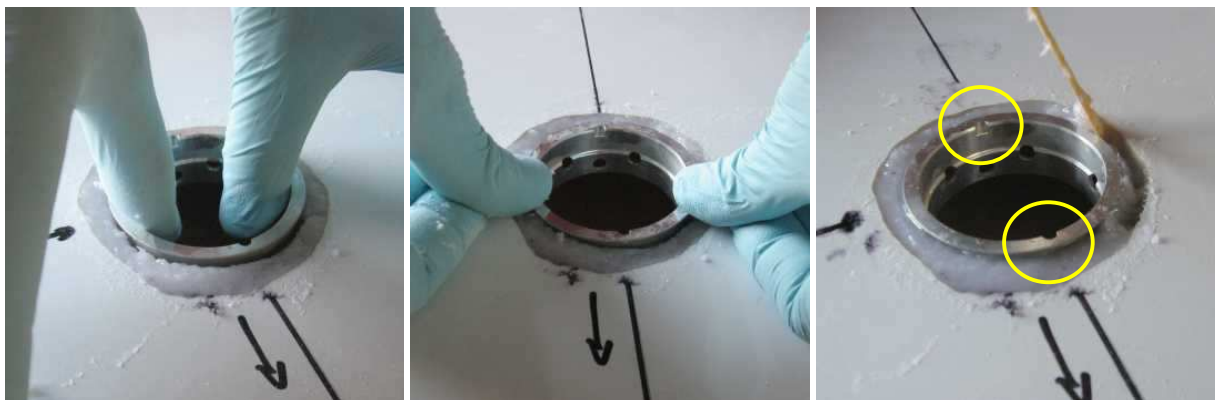
Fit the filler body



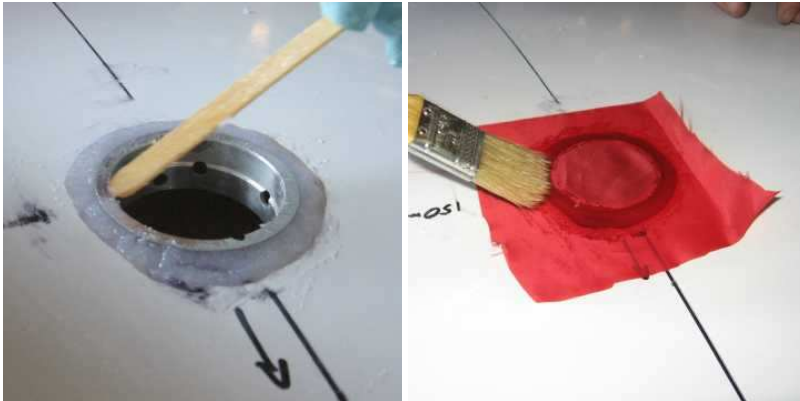
Now, working slowly, enlarge the hole in the tank (sandpaper taped to a section of tubing is useful for this) just enough so that the *filler body* is a good firm fit into the tank. Remove the *filler body* and clean all of the area surrounding the holes. Sand/roughen the outside of the *filler body* and place masking tape around the inside to keep flock from entering.



Mix a batch of resin and coat the outside of the *filler body* and the top of the wing tank area where it will be mounted. Add flock to the resin and carefully fill the area around the *filler body*, working the flock into the gap between the tank and the wing surface first and then filling back towards the opening, making sure that any bubbles are worked out.



Place the *filler body* in position, aligning the locating holes (circled at above right) fore and aft and with the earth wire hole facing forwards, and level the upper rim of the *filler body* with the top of the wing surface. Flock and fill back around the *filler body*.



When the flock is almost level with the top of the wing surface, cut a piece of peel cloth and carefully brush it into place with no wrinkles or bubbles. Leave overnight to cure. Next day remove the peel cloth and seal the opening with a square of plastic or heavy card secured with masking tape to keep the tank free of dust and dirt.

Final filling of any slight depressions in the flock will be covered in the *Painting>Pre-paint preparation* task.

This completes the *Pre-Paint>Wings>Fit fuel tank filler body* task.