

Pre-Paint>Wings>Fit quick drain sumps

Objectives of this task:

To flock the quick drain sumps into the wing tanks at the rear of each wing root and then clean and seal the fuel tanks.

Materials required:

Epoxy resin and flock

Card # 11 'Fuel components'

Mark and drill the wing

Turn the wing upside down and wedge the wing so that the top surface is level and solid.

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.

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

Measure the distance from the wing root to the first rib, which should be between 55mm and 60mm: that defines the inboard end of the wing tank. Now measure a further 60mm into the tank for a total of approximately 115mm to 120mm and mark a line, then measure back 580mm from the leading edge and mark another line. Where these lines cross is where the quick drain sump will be fitted.



Drill a 1 $\frac{3}{4}$ " hole into the outer 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: this will mean that you have reached the gaps in the expandable filler between the wing surface and the fuel tank.

Lever out the cut-out piece and carefully grind away all of the filler until you reach the surface of the wing tank, then drill a 3/8" hole into the tank, taking care not to drop anything into the tank. You could turn the wing right side up for this step if you wish.

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.

Fit the quick drain sump body



Clean away any dust then sand and test fit the quick drain body.

Mix a small batch of resin and coat the quick drain body and the mounting hole, then add flock and bed the quick drain body into place.



Add flock to build up to surface level and smooth away any excess with a clean mixing stick. Make sure that no flock sets across the drain hole – clean away any excess inside the drain hole with a length of wire or similar. Leave overnight to cure.

The flock will be partly covered by the glass fibre cloth lay up for the flaps and any roughness in the finish will be rectified in the *Painting>Pre paint preparation* task.

Clean the wing tanks

The fuel system will be flushed through in the *Testing* phase prior to flight.

Next day thoroughly clean the fuel tanks to remove any dirt or debris that may have fallen into the fuel tanks during the construction process: vacuum inside the fuel gauge opening then remove the cover from the fuel filler cap and blow compressed air into the tank to move debris and at the same time hold a vacuum cleaner nozzle at the fuel filler and fuel gauge openings so that you have a continuous airflow through the tank.

When you are satisfied that the tank is clean, seal all openings into the tank: the fuel filler opening, the quick drain fitting, the fuel gauge opening and all wing root fuel fittings.

This completes the *Pre-Paint>Wings>Fit quick drain sumps* task.