

# Fuel Tank Replacement

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### Custom Flight Creations

The fuel tank of the Europa is prone to cracking. Many different reasons abound but essentially it is not braced well enough on the bottom. Cracks have been temporarily repaired but the only tried and true solution is to remove and replace the tank.

Steps to remove the tank:

1. Remove all fuel,
2. Flush with water if you can.
3. Drain and dry the tank by removing hoses and bosses, tilt the plane to make this happen.
4. Remove the interior from the area using care.
5. Cut the top of the tank at the break in the front with a fine Dremel blade.
6. Remove the wires from the top and sides of the tank area or secure them from being cut or damaged.
7. Using a straight saw with fine blades cut the sides of the tank area as close to the inside of the fuselage as possible. At least within 1/2 inch/12 mm.
8. Remove top of tank cover.
9. Cut the top of the tank using a reciprocating air saw or similar.
10. Segment the tank top and sides and remove carefully.
11. On the saddle area and bottom area where glued, the tank may stick very hard to the glass. Work slowly and pry the tank from the glass without damaging the structure.
12. Once the tank is removed. Place the new tank across the sides. Yes it is wider and holds a bit more gas.

Note: The tank support and fuselage structure will need more cutting to get the tank in the hole for a temporary fit and extra reinforcing depending on your Europa type, whether Classic or XS. Cut the door sills to allow a squeeze fit of the new tank. Keep in mind you have to be able to remove it also.

Tank install.

1. Install the new tank temporarily.
2. Measure and mark where the tank fits and where lower support and existing supports need work or installation.
3. Supports may be constructed from foam or by troweling in a ribbon of expand cell or similar to match the shape of the bottom of the tank. Only the tank inboard and forward lower surfaces need support. A thin layer of cork or other good padding may be placed on the contact surfaces of the tank for cushion and support. Place release plastic on the tank and set in place and check for fit.
4. After supports are shaped, reinforced and fit and support perfectly, cover with 2 layers of bid. One may find it easier to fill the aft area of the tank bulkhead support with expand cell to make a solid easy to work with support.
5. Plan sight gauge mods, wire conduits and other tank options at this time.
6. Start planning and prepping your cockpit module / tank cover reglazing.

7. Small two layer tape flanges may be prebuilt on a table and peel plied. When cured, these may be cut and installed with an inch of overlap with flox or Redux to allow a reinforced inside as well as the two layers of bid on the outside of the cockpit module.
8. Drop the tank into position and secure from movement with polyurethane foam tacked in place with 5 minute. Once installed and wedged in, plan the cockpit module top reinstallation. Often times installing the tank first before the inside flanges in 7 above can be done more efficiently as the tank becomes a wedge to hold the flanges in place. Just don't glue in the tank.
9. Place the cockpit module top back in place and flox the flanges and area liberally, then fill all gaps and glass the tank in.
10. Install all remaining hoses and check the tank for leaks and site gauge operation.
11. Reglass in the door sills and any wire conduits to suite. Fill sand prime paint, and reinstall the interior.



Figure 1 Ready to start cutting



Figure 2 Initial cut along front of the cockpit just above the break in the cockpit. I could have gone lower in the front to within 1/2 inch of the break and still had ample room for the flange later to be added during the top reinstallation.





Figure 3 Cutting with a fine hand saw on the sides.



Figure 4 Tank top now exposed





Figure 5 Cutting the top out of the tank.



Figure 6 Carefully cutting around the controls.





Figure 7 The side rails need to be cut out for the new tank just a bit. I recommend cutting out about half the flange.

Please reference my posts on fuel tank structural analysis and fuel tank supports.