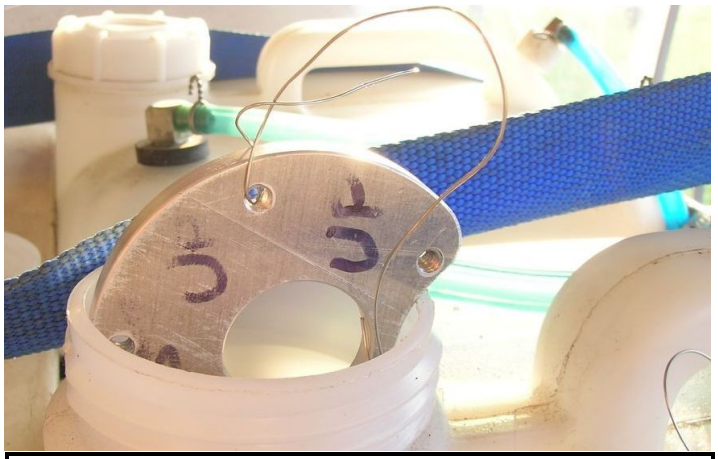
Sealing a Fuel Gauge Sender on a Plastic Fuel Tank

By Rick Girard EAA Chapter 88

You can't just thread the mounting screws into the plastic, there's no holding strength at all. It needs a back up plate, riv nuts, something. I decided to make a back up plate. Trouble is the screw pattern is larger than the inside of the tank neck by a long shot.

Hmmm. If I cut a divot out of the circle between the screw holes furthest apart and radiused the resulting corners within an inch of their lives it just might fit (and I utilize the hollowed out area under the tank's handle, too).

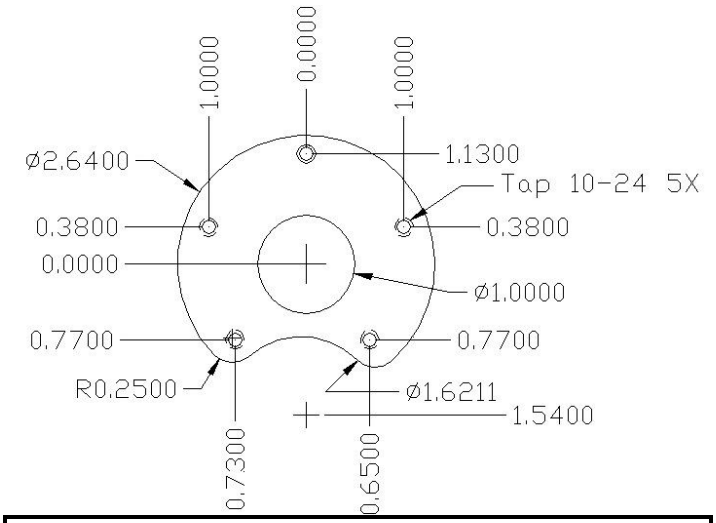


Back up plate with guide wires on its way into the tank

Once I had it actually in the tank I had to get it in position. I used .021 safety wire through two opposing screw holes, caught by a hook and pulled out the tank's neck and looped about the corresponding holes in the plate to control it once I slipped it into the tank. Got a screw into one threaded hole in the plate and pulled it up snug with the top of the tank. Got a second very short screw into an opposing hole and held the plate snug with it. Removed the first screw and inserted sender through sealing washer and into the tank.

Started a mounting screw through sender mount hole, sealing washer and into plate. Pulled sender up against this screw head and removed short screw. Inserted another mount screw opposite the first and got it started. Tightened these two to pull the plate up snug against the top again and inserted the remaining three screws. Tightened the remaining screws until all are equally snug then finished tightening in an alternating pattern until sealing washer is compressed. Wired up per specs, it's done and ready to calibrate.

All done and ready to take on fuel



Make from .25 6061-T6 aluminum