

## Making a Bubble-Less Tank from a Stock Tank.

1. Take the rubber stopper from a NEW tank. (As there is to be only 1 hole in the stopper, used stoppers probably will NOT work)
2. Insert 1 piece of brass or aluminum tubing through the stopper so that there is approx.  $\frac{3}{4}$  inch past the inside washer. DO NOT OPEN UP THE OTHER HOLES IN THE STOPPER!
3. Lightly place the stopper in the tank and measure a piece of med fuel line to go from the end of the brass tubing to approx. 1" from the end of the tank.
4. Pull the stopper out and attach the fuel line to the brass tubing.
5. Cut several small holes in the side of the fuel line about 1" from the free end.
6. Drill or cut a hole in the end of the tank near the top, large enough to just squeeze in a piece of medium fuel line.
7. Insert a 12" piece of fuel line into this hole. It should only protrude about  $\frac{1}{2}$  -  $\frac{3}{4}$ " into the tank. (Some like to glue the fuel line into the hole with "Goop" or other glue which will hold rubber / plastic)
8. Take a baby bottle liner (6 or 8 oz works great) and wad it up slightly so you can insert it into the tank. Once it is fully inserted, blow into the liner to expand it.
9. Hold the edges of the bottle liner while you slide the stopper into the tank. Try very hard to remove all "wrinkles" in the liner where it contacts the stopper. The friction of the stopper will hold the liner in the tank and when the bolt is tightened.
10. Tighten the bolt through the stopper until you can inflate the bottle liner and not have leaks.
11. Attach a piece of fuel line to the brass tubing and you are ready to fuel up and fly.
12. To fuel a bladder / bubbleless tank –
13. I recommend using a Jett Tanker but you can use any large syringe or even an old rubber "fuel bulb" (cheap)
14. Attach fuel line to filler syringe.
15. Gently pull back the syringes to extract all the air from the bladder.
16. Use a pair of hemostats or cloths pin type clamp to hold the fuel line shut to keep any air from entering the bladder.
17. Fill the syringe / fuel bulb and attach to fuel line entering bladder.
18. Gently add fuel until you can feel a definite back pressure.
19. Hold the fuel line higher than the tank and remove the fuel syringe / bulb.
20. If fuel squirts out, you have over-filled the bladder. Let it go until there is no pressure in the bladder.
21. Attach the fuel line to your engine and start it up.
22. "Peak" the engine to max rpm then richen it until there is a significant rpm drop. (The rpm drop will vary from pilot to pilot and engine to engine) Use a tach to check rpm. Pinch the fuel line briefly and let go. The rpm should rise about 800 – 1000 rpm. On my Thunder Tiger Pro with 10X4 prop, I like to launch about 800 – 1000 rpm below "peak" this ensures that the engine will not go "lean" in the turns and allows the engine to reach maximum rpm in flight.

23. The bladder ensures that no air can reach the carburetor and make the engine go lean. Even if you have excess vibration, there is no fuel “foaming” because there is no air to mix with the fuel.
24. This diagram should help with assembly.

