

2-Line "Pressure Tanks" By: Ron Stevenson

In this article, I'm going to talk about the '50's OMC pressurized fuel tank.

These are complicated to understand, and I'll describe the way it works in unison with the outboard.

Let's start with just some simple concepts. Since 1949 OMC used the outboard powerhead as an "air pump".

In all these 2 cycle engines, there is a compressing of the raw fuel mixture(when the piston travels to the bottom of the stroke) inside the crankcase which does 2 things.

- 1) this compressed charge rushes into the compression chamber on top of the piston, once the transfer ports open to make the motor run...and
- 2) a small portion of compressed air flows through a very small check valve in the reed plate down the fuel line into the fuel tank...did you get that??

In other words, the powerhead of the motor Pumps Air down the "AIR"line side of the hose into the tank, creating pressure in the fuel tank.

In my last article, I mentioned that you Cannot compress a liquid, but you can compress gases.

So now we've learned WHERE the tank gets pressurized from. Now that the AIR pressure is in the fuel tank, it forces fuel up through a series of valves into the fuel line and back up into the carburetor.

To determine whether a steel tank is a candidate for restoration, a thorough visible inspection with the top off the tank, commonly called the "manifold" or "regulator", removed. A bright light along with a mirror-on-a-stick is used to inspect the inside walls and inside of the top to check for rust. Rusted tanks are scrapped.. there is too much risk in taking chances on restoring a tank with rust.



2-line connector.. see "Air" cast in.

If the tank is rust free inside, then I can proceed to restore it. Paint is removed by a commercial grade paint stripper and using a grinder with a wire wheel.

After that step, I go over the bare steel with 220 grit sandpaper and a dousing with Acetone. This washing the steel with Acetone, ensures there is absolutely No trace of paint stripper, dirt or oil on the surface which will contaminate the primer and paint.

The tank is now ready to prime and paint. The steel surface must be sanded, cleaned and perfectly smooth to ensure the highest quality finished paint job. Taking time to hand sand the steel tank is helpful in 3 ways.

- a) the sanded steel creates millions of scratch marks which are beneficial in having the primer adhere to the steel and
- b) hand sanding catches all the small, left over original paint and decals and
- c) it just improves the surface of the steel for glistening final paint.

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Restored 2-line Pressure Tank.



Looking into an old tank for rust.

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These pressurized tanks rely on every part of the "Air" side of the system to be LEAK FREE. Here are some areas where air leaks occur.

- 1) A cracked air line from the reed plate to hose connector.
- 2) worn, shrunk, dried out, cracked "O" rings in the fuel connector.
- 3) a split in the Air hose from tank-to-motor.
- 4) a leaking, cracked gasket in the fuel cap.
- 5) a crack or ruptured diaphragm in the regulator
- 6) an old worn, dried out, main regulator cork gasket.

So, this is a light overview of how the old " 50's two-line OMC Pressure Tanks work. So, when you see the word " AIR" on an old Johnson-Evinrude-Gale or Viking you'll know how the tank gets pressurized