

1951-52 Johnson & Evinrude Gas Tanks

Article & Photos: Peter McDowell

I have an early 1951 Johnson 25hp and tank. I was interested in the motor because it was the first large horsepower motor with a gear shift. I had read somewhere that more people had learned to waterski behind this motor than any other. I have restored both the motor and the tank.

Picture #1 is of the 1951-52 Johnson gas tank. In disassembling the tank to restore it I came across something I didn't expect. I had worked on many gas tanks and was familiar with the valve assembly shown as parts 37-38-39 in the center of **picture #2**. This valve is there to prevent over pressure in the tank by allowing air to escape once the pressure has risen high enough to compress the spring and unseat the valve. This I expected to find. What I did not expect to find was two of them.

See **picture #3**. Parts # 302135-6-7 in the center to the left of the picture. Notice that they are oriented opposite to each other. The second valve, oriented opposite to the over pressure valve, is to prevent under pressure or vacuum in the tank. A tank with only a small amount of gas in it sitting in the hot sun, will see the air inside it expand because of the heat, unseating the valve and releasing the excess pressure. When the sun sets and the tank cools, the pressure inside the tank will drop. In this situation it can drop below ambient pressure and the tank can be crushed by this pressure differential. You might remember a science demonstration from public school. A gallon can with a small amount of water was placed on a heating element. After the water started to boil a lid was put on the can and it was removed from the heat and set aside. Class moved on and a few minutes later a loud noise was heard as the can was crushed by the ambient pressure.

You can see this being done to a 55 gallon drum on YouTube. Search "55 gallon drum crushed by air pressure" "Mythbusters" also did this to a railway car. They did not put a fire under the car, they just applied a vacuum directly to it. Search "Mythbusters" "implode tanker train car" also on YouTube.

The 1949-50 and 1953 and newer motors do not have this valve. I have seen quite a few gas tanks that suffered this under pressure situation. The bottom of the tank had buckled to the point of causing a hole in the bottom of the tank. The holes had been soldered closed or patched with epoxy.

Picture #4 shows the fuel tank lower housing on the left. In the middle is the upper housing from a 1953-57 tank. On the right is the upper housing from a 1951-52 tank. You can see that the two upper housings are similar. At the bottom of the picture is the hole for the primer button. Just above that, on the left hand side of the housing is where the two pieces are different. This is the location for the under pressure valve in the 1951-52 tanks. On the 1953-57 housing this area has been cut out. Interestingly both have the same part number, 302572.

One other point is that the 1951-52 Johnson parts manuals I have show this under pressure valve on the 10hp motor tanks but do not show it for the 25hp motor tanks. The motor and tank I have was purchased from the original owner. They said they had this from new and both were purchased as a set from the dealer.

