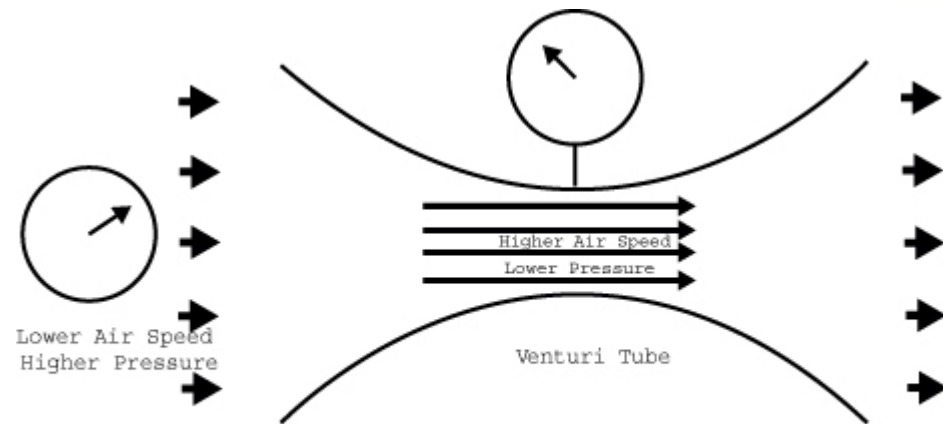


A Review of the Exhaust Primer on 5533

At training Wednesday night, the exhaust primer on 5533 wouldn't work. This set of slides talks about how the primer works, was wrong with it, and how to fix it.



By placing a priming tube in the center of the throat of the venturi tube the engine is running. The next figure depicts the location of the venturi installation.

How It Works

Using the lever on the top of the exhaust primer to close off the top of the muffler forces the exhaust through a venturi on the bottom of the muffler. The venturi causes a vacuum in the line from the discharge manifold, which pulls water into and through the pump.

To work the primer,

- a) Start the engine.
- b) Close all the valves to/from the pump except the water source (tank or suction hose) and the valve on the line to the primer.
- c) Turn throttle about 2/3 of the way out.
- d) Close and hold shut the primer lever. Watch the pressure gauge and the flow indicator flap to determine when the pump primes.
- e) Close the valve in the primer line.
- f) Open a discharge or pump to tank valve.

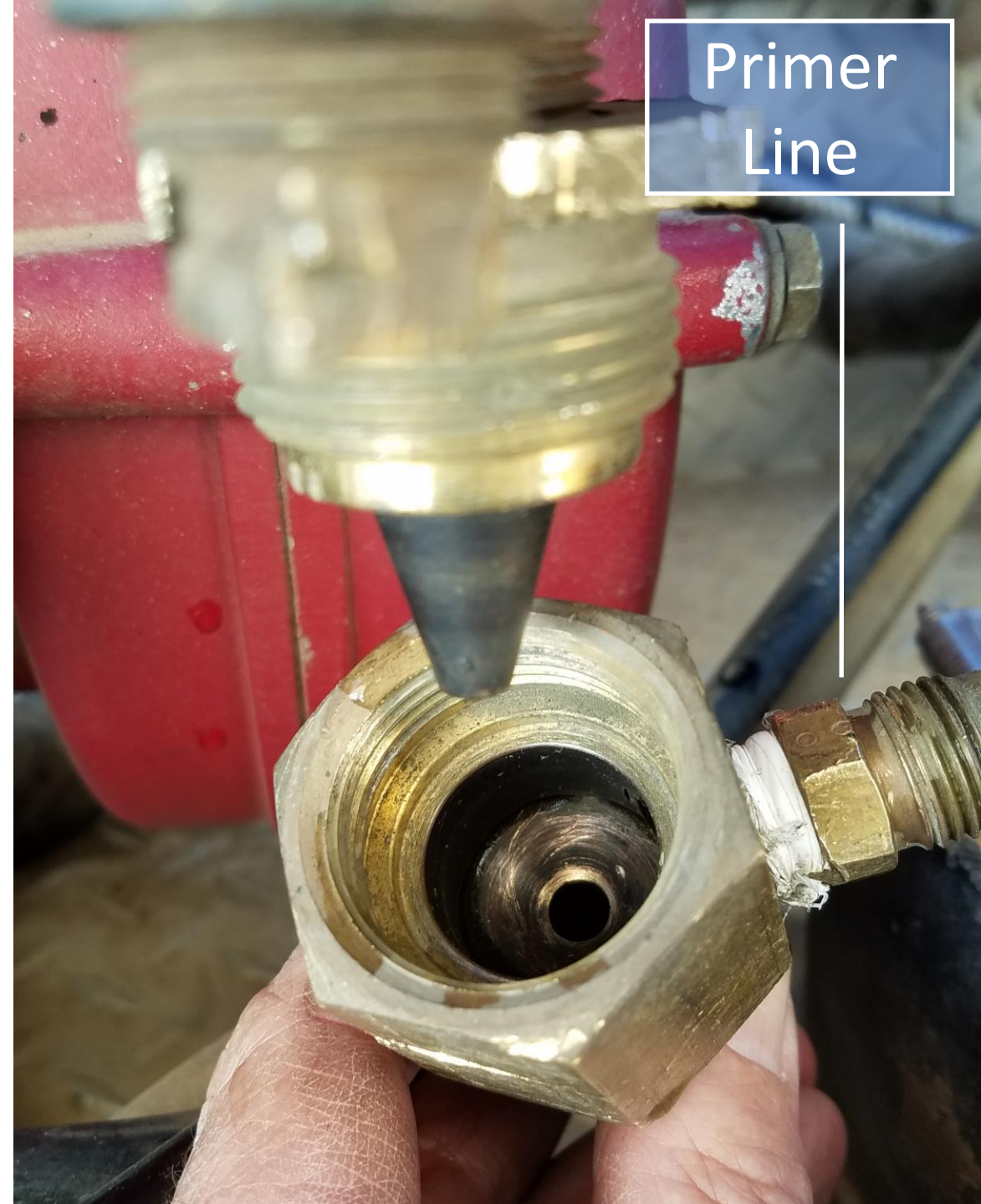


The Venturi

The exhaust primer works by pushing the exhaust through a pointed nozzle into a larger pointed nozzle, which are stacked like two funnels one inside the other.

The primer line is connected to the side of the bigger (bottom) nozzle.

The faster the exhaust moves, the more vacuum is generated (speed the engine up, but not so much that the engine bogs down).



Primer
Line

Why it Doesn't Always Work

This primer tends to accumulate dirt and muddy debris, which fills the area between the two funnels, resulting in no vacuum.

To help prevent buildup, flush out the venturi by opening the primer valve for 10-15 seconds before you turn off the pump, and then leave the primer handle so the top of the exhaust is closed while driving (esp on dusty roads).

Dirty



Clean



To Manually Clean the Venturi (5 steps)

1. Remove exhaust extension from venturi. Extension will drop through pump deck, catch from below.



2. Remove vacuum line to pump discharge.

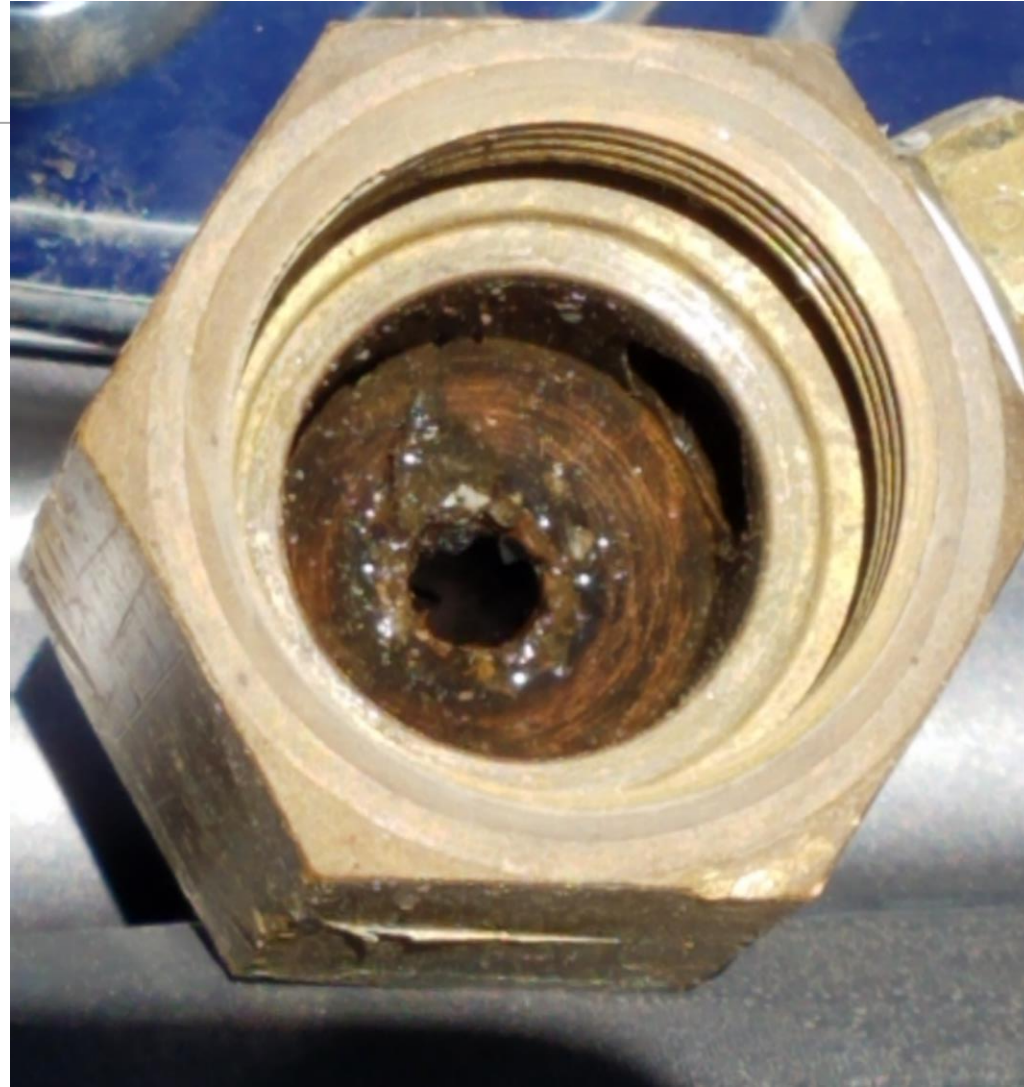


3. Remove bottom half of venturi (a big wrench is in tool box, passenger side).



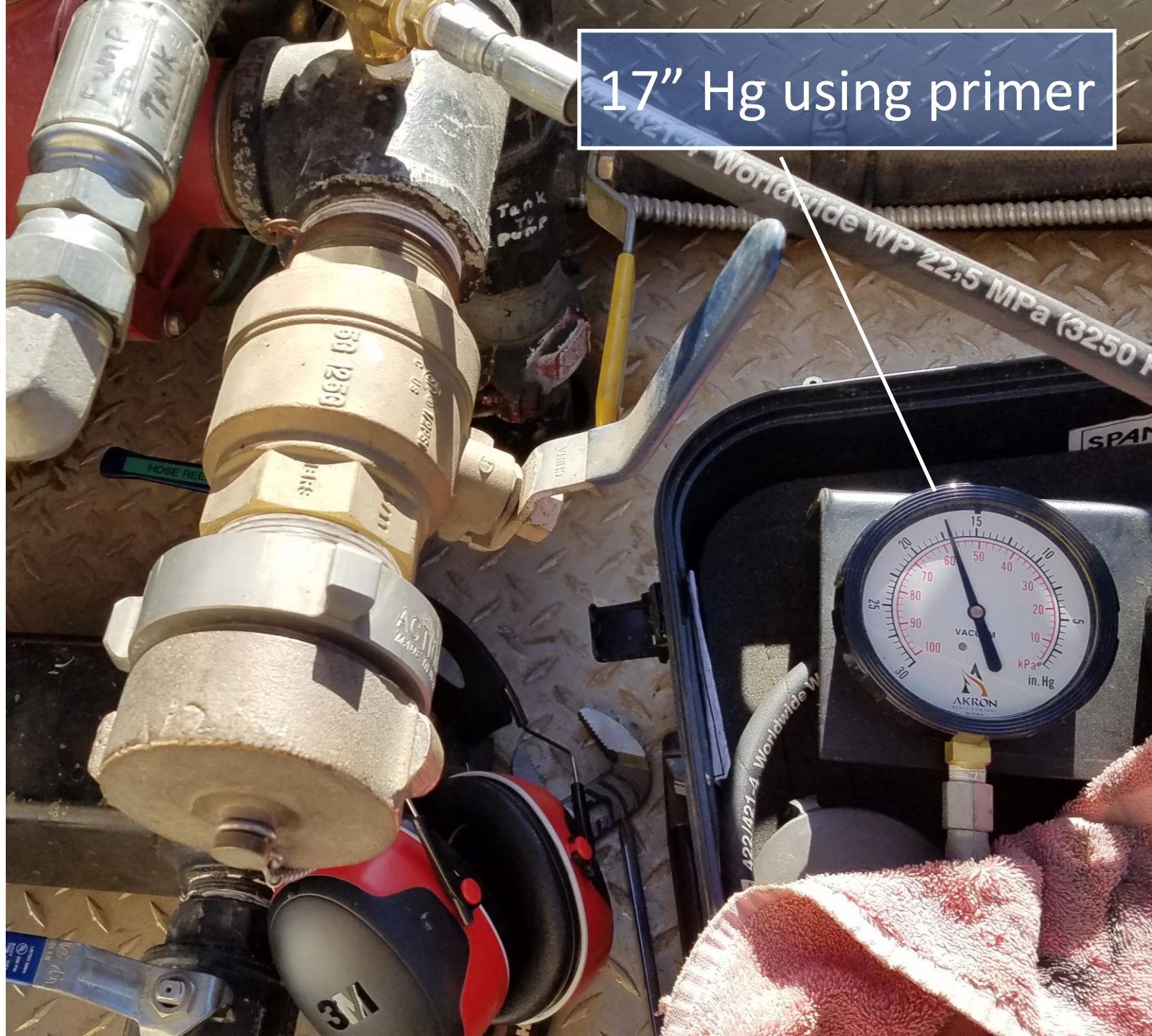
4. Remove debris from inside bottom of venturi until it's clean down to bare metal. This material is often soft enough to be wiped out, but scrape if necessary. The goal is to leave the funnel smooth.

5. Reassemble.



Performance - Venturi

Using the vacuum gauge for pump testing (Station 1 work area), the venturi should generate at least 17 inches of Hg (mercury) when the venturi is clean and free of air leaks.



Performance - Pump

On its own, the pump will generate a vacuum of 22 inches of Hg, which is why the pump can pull more vacuum than the primer.



Extra Credit

To prime the pump when it's dry and the exhaust primer doesn't work, remove the cap on the top of the pump, pour water in by hand, recap, and run.

This may take a time or two to work the air out. Cracking the tank-to-pump and pump-to-tank valves may help.

