



TECHNICAL BULLETIN

THE MECHANICS OF HUSKY AUTOMATIC STANDARD, PRESSURE ACTIVATED, AND INTERLOCK STYLE NOZZLES

When operating a nozzle the vast majority of users just see it as a piece of equipment where you push buttons on a dispenser, squeeze a lever and fuel flows into their vehicle. Just what does make a nozzle work? How does it know when to automatically shut off? What is meant by standard, pressure activated, or interlock? The following is a guide to help answer these questions and others.

Nozzle Design:

The fuel delivery function of all Husky automatic nozzles has the same basic design. There is a lever that when squeezed will pull on a latching assembly and open the main poppet valve. There is also a venturi down stream of the main poppet valve that creates vacuum when fuel is flowing through the nozzle. This vacuum is connected to the sensing port at the end of the spout and to a vacuum chamber on the top of the latching assembly. When the nozzle sensing port is blocked, that vacuum bleed is now restricted and the vacuum in the chamber above the latching assembly increases. The increased vacuum pulls the latching assembly apart, which moves the lever and closes the main poppet valve, thus automatic shutoff has occurred and the fuel flow is stopped. This is what happens when your tank is full. But, sometimes you cannot squeeze the lever and have flow fuel immediately, so that leads us into the various nozzle styles.

Nozzle Styles:

Husky sells three types of automatic nozzles that can be classified into standard, pressure activated, and interlock categories. In order to flow fuel the dispenser must be activated. Below is brief description of each.

Standard

Squeezing the lever will open the main poppet valve on these nozzles without any hose pressure or dispenser activation.

Pressure Activated

As the name says, “pressure” from the hose is required to “activate” the nozzle. To open the main poppet valve, the dispenser must be turned on and the hose pressurized first, and then fueling can begin by squeezing the lever. If there is no hose pressure or the dispenser is turned off, the nozzle will exhibit a limp/dead lever condition and it may or may not dispense a small amount of fuel.

Interlock

These nozzles require something to be done other than squeeze the lever to open the main poppet valve. With a Husky nozzle, the bellow or boot (common on balance systems) that covers the spout must be pushed back before squeezing the lever will open the main poppet valve and allow fuel to flow. If the bellow or boot is not pushed back, the nozzle will exhibit a limp/dead lever condition. Like a standard nozzle, hose pressure or dispenser activation is not necessary to open the main poppet valve.

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Common Questions:

What style of nozzle do I need if my dispenser has the capability to perform “pre-pay” sales transactions?

A pressure activated or interlock style nozzle with or without the hold open clip. Also, a standard nozzle can be used if the hold open clip is removed from the lever. Any of these combinations will meet the National Fire Protection Agency (NFPA) 30A code for “pre-pay” dispensing, but check with authorities having jurisdiction (AHJ).

Why can't I use a standard nozzle with a hold open clip on my “pre-pay” capable dispenser?

The correct nozzle selection is imperative with this dispenser style. The reason that the nozzle style in question cannot be used is because when the dispenser shuts off on a pre-pay transaction, there is no feature to close the main poppet valve. Therefore, it can be hung up in the dispenser boot with the hold open clip set in any notch which results in an open main poppet valve. A nozzle in this condition is not a safe one as the next customer can activate the dispenser, not knowing the nozzle is ready to dispense, and create a hazardous fuel spill or worse.

How does a pressure activated or interlock style nozzle shut itself off on a “pre-pay” transaction if the nozzle hold open clip is set?

After the dispenser reaches the customer requested specific dollar amount, a valve in the dispenser closes which does not allow fuel flow. Then the dispenser bleeds off the pressure in the hose. When the pressure is low enough a pressure activated style nozzle shuts off by pushing the latching assembly apart which closes the main poppet valve. As noted earlier, an interlock style nozzle is not affected by hose pressure. When that nozzle is removed from the automobile fill pipe, the bellows or boot is not pressed back and that action will push the latching assembly apart which closes the main poppet valve.

For further information or questions regarding this technical bulletin please contact Joe Laschke Husky Technical Service Representative at jlascchke@husky.com or our customer service department at 800-325-3558