

COMMUNIQUE **FROM THE CORNER**

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**FROM:
JAY R. SMITH
ENGINEERING
GROUP**



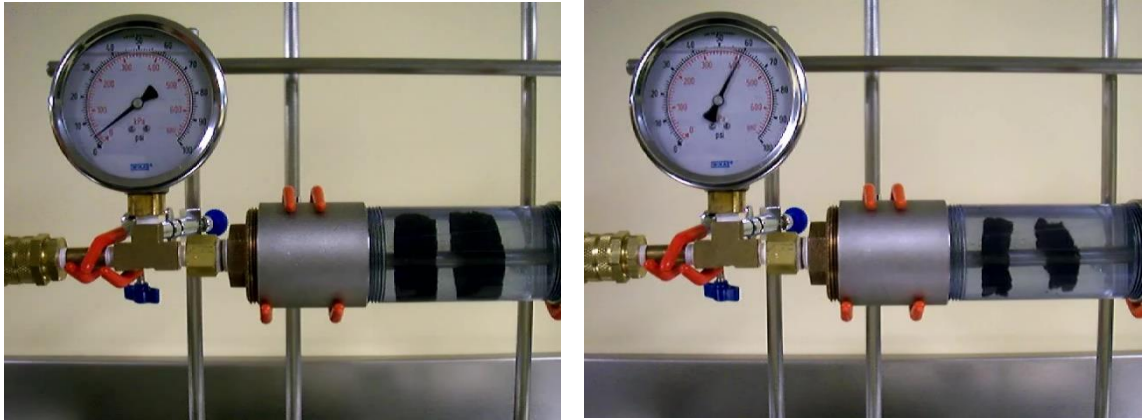
EVERY INNOVATIVE & UNIQUE PRODUCT HAS A STORY... AND WE HAVE OURS! Jay R. Smith Mfg. Co. Fluid Controls Figure Number 2694 – Trap-Defender Pressure Drop Trap Priming Valve

Anthony Stanaland, the inventor of the Trap-Defender, 2694 Pressure Drop Trap Primer, is an extraordinary product innovator at Jay R. Smith and has designed numerous patented devices. Anthony is known in-house for his out-of-the-box, creative thinking, and also believing everything has potential until proven differently. Outside of engineering, Anthony has many other interests and skills, including being a certified SCUBA diver. Several years ago, he was called by a local sheriff's department to dive in a large lake to search for a downed plane and its pilot. As he submerged, he noticed the wet suit loosening up and upon ascending observed the wet suit tightening.

Due to the nature of the wet suit material, the small gas pockets began to shrink on the descent, but on the ascent expanded back to their normal size. Using his trademark intellectual approach, Anthony decided to attempt applying this compression/decompression phenomenon into the design of a new and superior pressure drop trap primer valve he was developing. A pressure drop trap primer is a mechanically simple device that emits water into a P-trap water seal when detecting a positive and negative supply line pressure differential. His goal for this new device was to utilize the behavior of a compressible material, with respect to changes in water pressure, in an effort to eliminate friction caused by O-rings, pistons, and springs used in competing products. If Anthony's intuition was correct, the negligible pressure changes in water supply lines would provoke an immediate responsive reaction and superb sensitivity.

After several years of testing and experimenting with various materials, a proprietary, compressible elastomer was selected to serve as a pressure element. This pressure element is literally the device's heart. It compresses under static supply line pressure and expands during a drop in water pressure. The 2694 internal parts, including the pressure element are unique to the industry, being both friction-free and having unparalleled sensitivity, allowing the trap primer to discharge with only 3 PSI pressure drop in the potable water system. The 2694 is patented—# 9,708,808.





- THE PRESSURE ELEMENT IN THE TRAP-DEFENDER™ IS LITERALLY THE DEVICE'S **HEART**
- IT IS AN **“ENGINEERED, COMPRESSIBLE MATERIAL,”** WHICH REACTS TO POSITIVE OR NEGATIVE CHANGES IN WATER PRESSURE
- **COMPRESSES** UNDER PRESSURE, THEN **EXPANDS** DURING A **DROP** IN WATER PRESSURE

A characteristic of all pressure drop trap primers is, with an increase in sensitivity, the trap primer will generate its own mild water hammer or continuous, resonant valve oscillation during operation. The 2694 dampens this effect with the addition of a patented anti-oscillation valve (# 10,190,306) which prevents this resonant oscillation. By eliminating this effect, the 2694 has the ability to operate at lower than normal pressure drop changes, pushing the operational envelope beyond most competitors' trap primers.

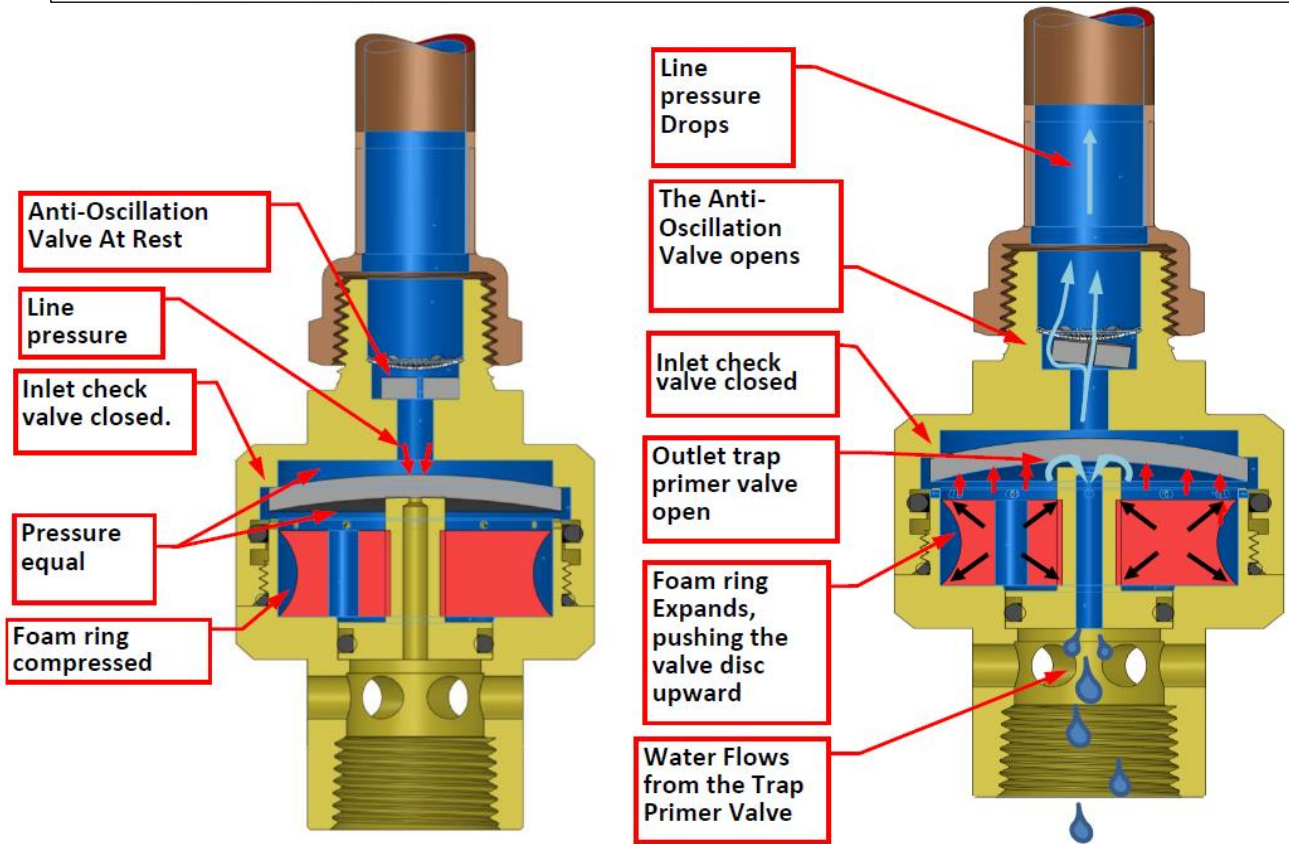
Some competitors will assert using an engineered compressible material will only endure for a short time period. **WRONG:** The 2694 has passed all test requirements of the American Society of Sanitary Engineering (ASSE) 1018 Standard for Trap Primer Valves, including a cycle test where the device is activated 5,000 times. Several of these units have been tested for over 2,500,000 cycles and are still providing at least 0.10ml output per cycle with no fatigue.

Some competing trap primers require adjustment at start-up or at the factory level during assembly. Another beneficial and valuable feature of the 2694 is that it is completely self-adjusting. Building regulator adjustment or service main changes increase or decrease pressure in supply lines. The 2694 immediately and automatically self-adjusts to any pressure changes.

The 2694 does not require flow through the device in order to activate. It can be installed remotely and at the end of the branch line.

OPERATION

STATIC CONDITION – READY **PRESSURE DROP – ACTIVATION**



The 2694 serves one floor drain P-trap. To serve up to four floor drain P-traps, specify figure number 2694DA "Cloverleaf" distribution unit, available in lead-free brass or ABS. Optional connections are available, including NPT, compression, and push-in type.



2694DA-ABS with Brass Compression Fittings



2694DA-CTS with 5/8" Push-In Connection Fittings

ENGINEERING SPECIFICATION:

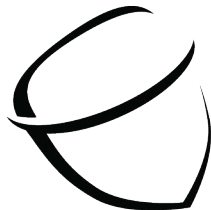
PRESSURE DROP TRAP PRIMER DEVICE

- Smith Fluid Controls figure number 2694
- Device shall be certified to and comply with ASSE 1018, Trap Primer Valves, be installed per the manufacturer's installation instructions and shall be ASSE and IAPMO/UPC listed.
- Device shall be a pressure drop activated trap primer valve designed to operate at a minimum pressure drop of 3 PSI, provided with air gap relief ports for backflow protection and shall be self-adjusting with no field adjustment required.
- The System Operating Pressure Range shall be 20 PSI (138 kpa) minimum to 80 PSI (552 kpa) maximum.
- The body shall be lead-free brass material. Optional: Nickel-plated (-NP) or chrome-plated (-CP).
- Connections shall be ½" (13) male NPT inlet and ½" (13) female NPT outlet.
- Device shall be installed in a cold-water supply line per the manufacturer's installation instructions to service one floor drain P-trap or up to four P-traps when using an optional distribution device.
- Optional Connections: Sweat Connections (Fig. No. 2694-SW) or Union Connections (Fig. No. 2694-UN)
- Optional Distribution Devices to Prime up to Four Floor Drain P-Traps: Fig. No. 2694DA (Brass) or 2694DA-ABS (ABS). Refer to Fluid Controls product submittal fig. no. 2694DA.

And, as for the aircraft, both it and the pilot were found in 110 feet of water.

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