Valcor Publishes New White Paper on Surge Pressure Mitigation Devices

Valcor Engineering Corporation, a designer and manufacturer of fluid control components and subsystems, clutches, brakes & OBIGGS systems, is proud to present their latest white paper from the Aerospace Group, titled “Comparison of Surge Pressure Mitigation Devices for Use in Propellant Feedlines During a Priming Event.”

SPRINGFIELD, N.J. (PRWEB) August 27, 2019 -- Valcor Engineering Corporation, a designer and manufacturer of fluid control components and subsystems, clutches, brakes & OBIGGS systems, is proud to present their latest white paper from the Aerospace Group, titled “Comparison of Surge Pressure Mitigation Devices for Use in Propellant Feedlines During a Priming Event.” The paper was written by Vitor Cardoso, Rich Kelly and Yuri Gerasimov from Valcor’s Aerospace Engineering Department.

The priming of a liquid propellant feed system can create surge pressures that can be damaging to the system. In the past, spacecraft have used flow restrictions such as orifices and venturis. The addition of such restrictions can cause significant pressure loss during thruster firings. This paper will discuss a new approach, which will be to install a flow limiter in the propellant line. Such a device would sense an abnormally high flow, and close so that the orifice size is reduced. This would limit the flow velocity, thus reducing the pressure surge. It would then return to its full open position during nominal flow, thus not producing any excess pressure drop during normal operation. This paper presents a trade study that compares four devices: an orifice, a venturi, a flow fuse, and a flow fuse with a dashpot (slow closing).

“Valcor’s flow fuse solution is very versatile, allowing the user to decrease the water hammer during the priming event, yet introduces little to no pressure drop during normal operation,” stated Leo Loiacono, VP, Business & Product Development. “It does not interfere with the system performance and does not affect system reliability. It takes up the same weight and space as a flow limiting device such as a venturi, but has significant benefits.”

The full paper can be found on our website for free here: https://www.valcor.com/white-paper-comparison-surge-use-flow-limiter-propellant-feedlines-priming-event/

About Valcor
Valcor Engineering Corporation (www.valcor.com), founded in 1951, designs and manufactures solenoid valves and other fluid control components, as well as subsystems, clutches, brakes and OBIGGS systems in critical applications in the aerospace, nuclear, light industrial and scientific industries. Headquartered in Springfield, New Jersey, Valcor’s world-class staff of engineers, designers, and technical support personnel utilize fully-equipped, modern test facilities to test the most precise and exacting standards.

With a library of more than 18,000 designs, Valcor’s design team can modify existing technology to suit practically every hard to handle application. Valcor specializes in custom applications and can create an entirely new product to meet your needs.

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