

Explosion-Resistant Environmental Test Chamber for Fuel Valve Testing

We had the opportunity to collaborate with a major designer and manufacturer of fuel delivery and thermal management systems. The customer approached us with a unique challenge: they required a specialized testing solution for their fuel valves. The goal was to design a test chamber that was capable of testing fuel valves while safeguarding the test environment against hazards that may arise during the testing of this volatile product.

CSZ quoted the customer a 32 Cu. Ft. environmental test chamber equipped with a temperature range of -40°C to +163°C and a series of explosion-resistant customizations.

Special features

- **Explosion-Resistant Light** to ensure safe operations during testing. This feature eliminates the risk surrounding potential sparks or ignition sources that could arise during testing processes.
- **Explosion-Resistant Air Circuit Motors** specifically engineered to eliminate any chances of ignition within the chamber, even under extreme temperature conditions.
- **Reinforced chamber floor** built to withstand up to 500 LBS of weight. This structural reinforcement guarantees the secure placement of fuel valves during testing, preventing any accidental damage or disturbances that could compromise the reliability of test results.
- **Intrinsically Safe Barriers** to limit the current, voltage, and total energy delivered to a sensor and prevent potential sparks from escaping the testing environment.



Cincinnati Sub-Zero's collaboration with the customer resulted in the successful development of a custom test chamber that meets the unique requirements for testing fuel valves. The addition of explosion-resistant features ensured that the testing environment remained secure and protected from potential ignition hazards.

By providing this tailored solution, our team empowered the customer to conduct safe, precise, and reliable tests on their products, gaining valuable insight into performance and safety under extreme conditions. The success of this project exemplifies how CSZ products offer cutting-edge solutions that surpass customer expectations and drive innovation within the industries we serve.

