

Optimux Control Valves for Aerospace Testing Systems

The aerospace industry is experiencing heightened competition, as well as increasingly stringent regulatory and security requirements both domestically and in emerging markets. In order to remain competitive, ensure adherence to exacting standards, and garner maximum value from their capital investments, aerospace companies – and governments – need to depend on vendors with products of unquestionable reliability, as well as the capacity to meet delivery milestones.

As a respected supplier to the U.S. government, as well as to a variety of notable aerospace and defense contractors, Trimteck combines its engineering expertise and unparalleled customer service to offer high-quality, differentiated process control solutions conforming to the strictest military and international standards.

Ground testing of turbines, rocket engines, fuel systems and components is critical to ensuring flight worthiness. We routinely custom-design and build Optimux control valves to tackle the most challenging process conditions in the industry. We design and manufacture a suite of flow, temperature, and pressure control solutions for aerospace applications that include the OpTE - a robust triple offset butterfly valve that ensures bubble tight shutoff at any temperature - and the OpGL-XT - a rugged, multi-purpose, custom-engineered globe control valve for applications ranging from extreme differential pressures to extreme cryogenic temperatures.

Case Studies

Application: Rocket Propulsion System Testing - Bubble-tight Shutoff of Liquid Oxygen in Chemical Steam Generator

Customer: NASA Stennis Space Center Mississippi, USA

Requirements: A cage-less cryogenic globe valve for quick, safe, and repeatable Class VI shutoff of LOX in a new CSG system used by NASA to create a vacuum chamber for rocket testing.

Solution: In close collaboration with NASA engineers, Trimteck designed and manufactured QTY27 custom 2" CL300 OpGL-XTSB Cryogenic Angle/Split Body valves fitted with OpTK piston-cylinder actuators. The rugged split body configuration allows for the seat to be held in place without the need for a retainer or a cage – a requirement for most LOX valves at Stennis Space Center. The force applied by eight equidistant bolts holding the upper and lower body segments together ensures that the seat is subjected to even pressure, and is "sandwiched" in place to reduce the effects of line torsion and vibration on the seal. Tight shutoff is achieved using a specially-designed soft wafer seat insert, which is easily and inexpensively replaceable.

Photo: Trimteck's Custom Optimux OpGL-XTSB Split-Angle-Body LOX Valve



Trimteck designed valves for LOX and IPA service on the Chemical Steam Generator at NASA's A-3 Test Facility



Application: Turbofan Engine Testing - Controlling Compressor Exhaust

Customer: GE Aviation Massachusetts, USA

Requirements: A series of compact, versatile globe control valves for bleeding of compressors on GE's Small Engine Compression Testing (SPECT) system. 19 distinct applications were provided, each with various process conditions – depending on what test the customer would be running – and GE wanted to maximize reusability of the equipment without sacrificing performance.

Solution: Working closely with GE test engineers, Trimteck devised a solution, using our rugged, stem-guided Optimux OpGL Globe Control Valves ranging in size from 1/2" to 6" and CL150 to CL600, with custom-designed trims. We were able to minimize the number of valves purchased by GE to 12, so that at least seven (7) of the units could be easily re-used for multiple test configurations. This exemplifies our desire to work closely with our customers in order to understand their applications as thoroughly as possible, which in turn allows us to offer a truly tailor-made engineered solution.

Photo: 4" CL300 Optimux OpGL Globe Control Valve with HPP4500 Smart Positioner



Trimteck manufactures control valves for a broad range of aerospace operating requirements

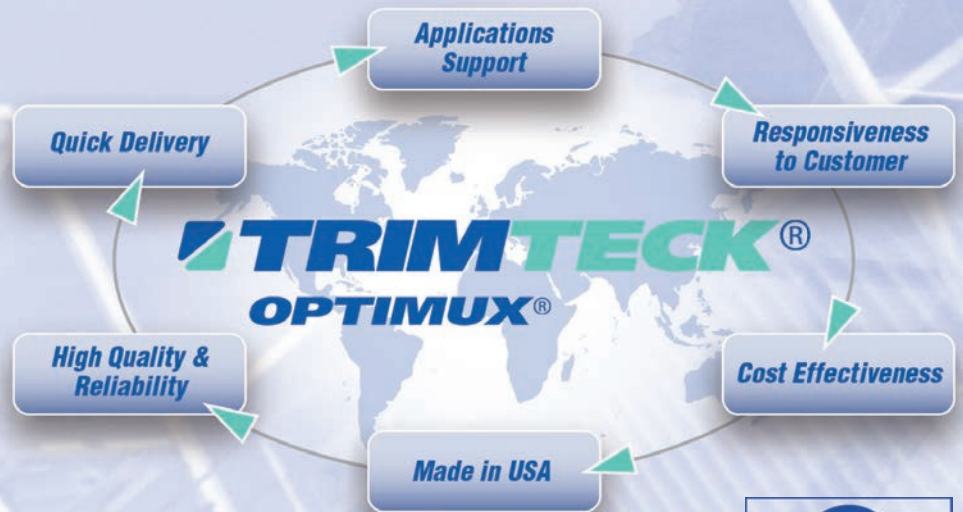
- Cavitating Service
- Flashing Service
- High Pressure Let Down
- Noise Attenuation
- High Rangeability Applications
- Y-Body Choke Valves
- High Pressure Ball Valves
- Grayloc End Connections
- High Pressure Drop Applications
- Velocity Control Applications
- Tight Shut-Off Applications
- Tanker Loading and Unloading facilities
- High Pressure Butterfly style control and isolation valves
- Vacuum Jacketed Valves
- Steam Jacketed Valves
- Cryogenic Applications
- Oxygen Cleaning
- Cold Box control with extended bonnets
- Low flow
- Hydrogen and Nitrogen Liquefaction



Expect more when you partner with Trimteck®

Trimteck is a NASA VDB-registered, ISO 9001-certified U.S. company (Registration No. 2012-98243) with over thirty years of experience engineering, manufacturing, and marketing high-quality, cost-effective flow, pressure, and temperature control solutions and equipment for critical processes, and our products are currently helping customers safely improve quality, optimize throughput, and reduce emissions and energy costs across an array of industries in more than 42 countries.

We design and manufacture a comprehensive line of control valves – and variety of actuators, positioners, severe service trims, and other accessories – that our applications engineers and representatives use to solve even the most complex flow control problems quickly and economically.



Products in compliance with:
ASME B16.34
ANSI/ISA-75.05.01-2000 (R2005)

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