

NATURAL GAS

Optimizing Gas Systems with Optimux® Control Valves

As more and more natural gas is produced and brought to market around the world, gas handling, processing, and distribution systems must respond by pushing the envelope to ensure maximum capacity where and when it is needed. It follows that the requirements for control valve applications in these systems are becoming increasingly challenging and complex: from the need for noise attenuation technology, to effective and robust severe service trims that allows for both accurate throttling and a bubble-tight shutoff - and the need for high differential pressures, to material hardening processes that reduce the erosive effect of particles in suspension. Not only must a control valve have the capacity to withstand these conditions, it must also perform with extreme precision and reliability in order to truly optimize the system.

Trimteck® builds Optimux® control valves that effectively and economically tackle these unique process conditions in natural gas systems. We manufacture a suite of flow control solutions for gas applications that include the **OpTB** - a dual-function trunnion-mounted ball valve with a characterized trim that allows for both accurate throttling and a bubble-tight shutoff - and the **OpGL** - a rugged, multi-purpose, custom-engineered globe control valve for applications ranging from extreme differential pressures and sour gas at the well-site, compressor station, or treating plant, to cryogenic applications at liquefaction plants.

Case Studies

Application: Recycle and Anti-Surge on Skid-Mounted Compressor

Location: Rubiales Field, Colombia

Requirements: A skid-mounted compressor manufacturer approached Trimteck with noise and wiredrawing problems that were pervasive in many of the cage-guided globe control valves on their compressor systems.

Solution: Trimteck's Optimux **OpGL Globe Control Valves** have a top-guided unbalanced plug that drastically reduces wear on both the plug and seat, minimizing any leakage and thus reducing wiredrawing. Combining its unbalanced top-guided design with a compact, fast, and accurate **OpTK Piston-Cylinder Actuator**, the OpGL makes for a powerful package for handling recycle and anti-surge applications. Moreover, when fitted with multi-stage ST-2 noise attenuating trim, which forces gas through a torturous path thereby reducing its velocity, the OpGL is a dramatically quieter valve than the one previously used by the customer.



Photos: Optimux® OpGL Globe Control Valve and Severe Service Trim



Application: Inlet at Remote Processing Plant

Location: South Texas, USA

Requirements A zero-leakage inlet valve situated upstream of a control valve, which is intended to throttle for pressure control on one train and flow control on another.

Solution: Two 10" CL600 Optimux **OpTB Trunnion-Mounted Ball Valves** were installed to replace both the ESD inlet valves and the adjacent downstream globe control valves. That is, one OpTB replaced two valves. Because of their characterized Process Optimizer Balls, the single OpTBs serve the dual function of block and throttling valves. Dubbed the "Big Bird Valves" by plant operators, both valves have been proving their reliability day-in and day-out in this remote location since 2009.



Photo: Optimux® OpTB Trunnion Valve

Features Required

Application	Control Element	Noise Abatement	Resistance to Debris	Resistance to Corrosion	High Capacity	High Differential Pressure	Cryogenic Service	Three-way	Zero Leakage
Gas Production	PCV	✓	✓	✓	✓	✓			✓
Compression	FCV, PCV, TCV	✓	✓		✓	✓	✓	✓	✓
Processing	FCV, PCV, TCV	✓	✓	✓	✓	✓	✓	✓	✓
Liquefaction	PCV, FCV, TCV	✓			✓	✓	✓		✓
Power Plant Fuel Gas	FCV, PCV	✓		✓	✓	✓			✓

Additional Trimteck-Optimux® Valves for Natural Gas Applications

- Gas-to-flare Valves
- Water and Gas injection Valves
- Cavitating Service Valves
- Flashing Service Valves
- High Pressure Let Down Valves
- Noise Attenuating Valves
- Wellhead Control Valves
- High Rangeability Applications
- High Pressure Drop Applications
- Velocity Control Applications
- Tight Shut-Off Applications
- Metering Stations & City Distribution Gates
- Tanker Loading and Unloading facilities
- Low flow control valves
- Gas Compressor Station Valves
- Gas Pipeline Valves
- High Pressure Butterfly style control and isolation valves
- Cryogenic Applications
- Oxygen Cleaned Valves
- Cold Box control valves with extended bonnets



About Trimteck

Trimteck® is a NASA VDB-approved, ISO 9001-2016-registered 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. 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 50 countries.

We 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.



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Products in compliance with:
ASME B16.34
ANSI/ISA-75.05.01-2019