

## Severe service control valve

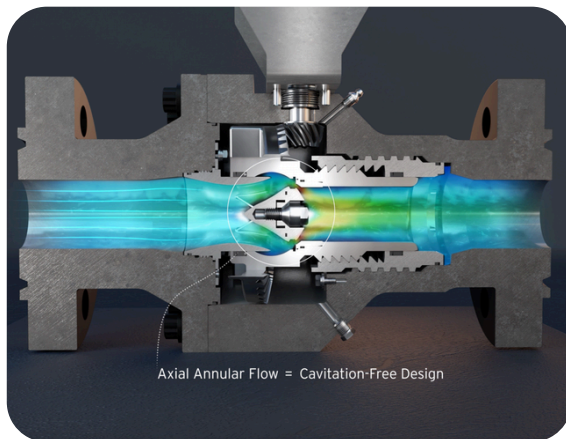
### The Problem

Industrial fluid processing systems depend on control valves to be accurate and reliable. Yet in high-pressure, choked-flow conditions, conventional severe service valves suffer from cavitation damage, erosion, vibration, and premature failure. Every shutdown means lost revenue. Every repair means lost time.

### The Solution

Atlas is the only severe service control valve engineered from first principles to maintain choked-flow conditions across its full control range – without damage, without compromise.

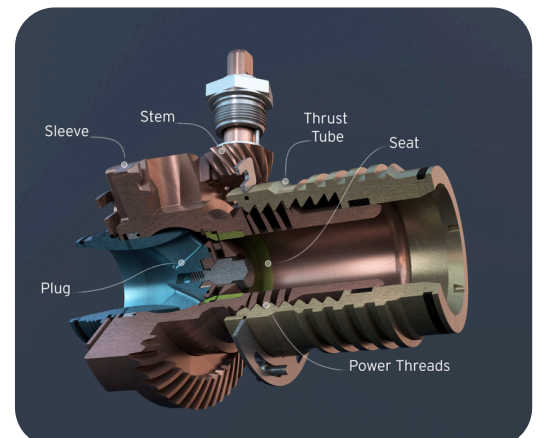
### Hydraulic and Mechanical Performance



- Static pressure in the trim zone maintained below vapor pressure → zero cavitation
- Axisymmetric flow → zero flow-induced vibration
- Containment surfaces fully isolated from high-velocity erosive fluids
- Zero-backlash, multi-turn precision across the full control range
- Minimal actuator torque – reduced actuator sizing

### Engineered for Reliability

- Zero cavitation damage across 10+ years of continuous service
- Operating range: 0 → 6,000 psi DP (up to 10,000 psi with reduced trim)
- Control range: up to 700:1 with +/-3% accuracy
- Noise: < 60 dB in choked flow
- Maintenance cycle: 2+ years (vs. 3-6 months for standard valves)
- 27 units in service, trim replacement only

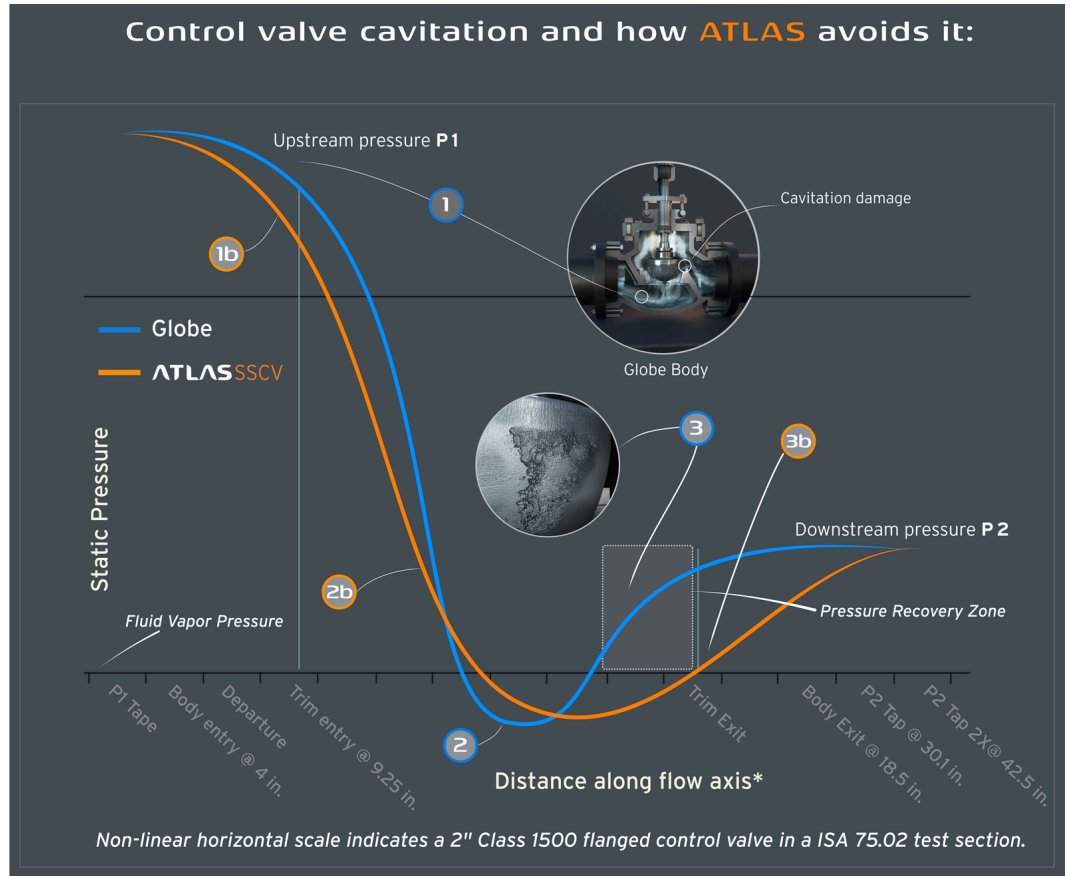


**In traditional globe**

- 1 Velocity begins to increase rapidly as fluid turns into lower globe body cavity.
- 2 Fluid instantly accelerates as it passes trim restriction, dropping static pressure below vapor pressure.
- 3 Velocity decreases as fluid expands past the trim restriction. The upper globe body cavity causes pressure to build rapidly before fluid exits trim, leading to cavitation damage.

**In ATLAS**

- 1b Velocity increases gradually in Atlas as fluid enters annular trim restriction.
- 2b Fluid, still in liquid state, reaches maximum velocity in trim restriction.
- 3b Absence of velocity restriction in Atlas maintains static pressure in trim below vapor pressure.



**Three Models for Your Application Range**

Model	NPS	Flow Capacity (Cv)	Rangeability (ISA 75.11)	Ideal for
Atlas 15	2"	up to 70	Up to 80:1	Highest capacity, high pressure, precision control in a 2" valve
Atlas 21	3"	up to 130	Up to 58:1	Pump testing, storage blowdown, severe service control
Atlas 32	4"	up to 300	Up to 58:1	Maximum capacity high-flow applications

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