

Product Applications

The Carten DCSA series (direct diaphragm design) is designed for gas distribution and solvent co-axial distribution service where cleanliness, purity and containment are of primary importance. The DCSA model is a normally closed pneumatically operated springless, packless, diaphragm valve. It controls the passage of gas or solvent through the primary tube while providing a complete secondary containment flow path. The secondary flow path remains open regardless of the primary passage being opened or closed. The DCSA model is suitable for inert gases, most toxic gases and most solvents delivering performance, containment and cleanliness for the process media.

The DCSA model is not intended for use in a vacuum application. The pneumatic actuator is supplied with a quick disconnect fitting. The pneumatic actuator requires 60 -100 psi (5.52-6.89 bar) supply to actuate the valve.

Primary Applications Include:

- Ultra-high purity process and toxic gases
- Installation in co-axial gas systems for superior containment
- Equipment applications
- Process chambers
- Suitable for inert, most toxic gases and most solvent media *

Primary Product Features:

- Durable diaphragm design for ultra-high purity, long cycle life and superior flow
- 316L st.st. direct diaphragm design for robustness and high durability
- Springless, packless design for ultra-high purity gas cleanliness and performance
- No internal particle shedding of components
- Unique open/close visual indicator for pneumatic actuator
- Superior leak rate of 1×10^{-9} scc/s Helium for diaphragm seal and PCTFE seat
- Assembled and tested in a class 10 cleanroom for cleanliness
- Electropolished wetted surface for superior corrosion resistance
- Individual serialisation of valves for complete quality traceability
- Capable of operating at temperatures between -30°C to +150°C **

> MORE INFORMATION

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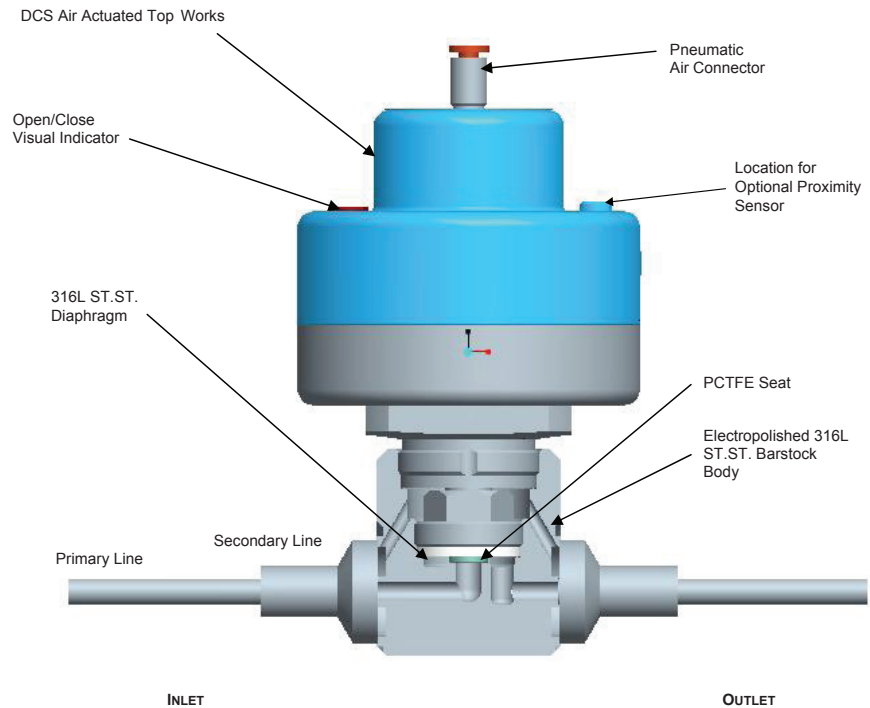
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* Carten can advise on the suitability of specific media based on the compatibility or otherwise with the materials of construction for the valve. It is the responsibility of the systems design engineer to make a selection on the suitability of valves based on their knowledge of gas design systems, the materials of construction and the specific operating conditions of the system.

** Standard operating temperature for PCTFE is -30°C to +82°C. A polyimide (VespeI) seat will enable the valve to operate at a high temperature up to +150°C.

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Construction Material	Wetted Areas	316L St.St., PCTFE
	Non-Wetted Areas	316L St.St., 303 St.St., Aluminium, Viton, Delrin *
Maximum Operating Pressure	DCSA250 DCSA375	0 to 250 PSI (0 to 17Bar)
Orifice	DCSA250 DCSA375	0.250" (6.35mm) 0.250" (6.35mm)
Maximum Operating Temperature	PCTFE Seat Vespel Seat	-30°C to +82°C (-22°F to +180°F) -30°C to +150°C (-22°F to +302°F)
Flow Coefficient (C _v)	DCSA250 DCSA375	0.41 0.41

Helium Leak Test	Inboard/across the seat	1 x 10 ⁻¹⁰ scc/s He max	Rated
		1 x 10 ⁻⁹ scc/s He max	Standard Production
Helium leak test performed with 100% Helium			
Cleanliness	Assembled and tested in a Class 10 cleanroom. Purged and packaged in a Class 1 area. Double-bag packaging for containment. Cleaned in 18 Ω DI water for O ₂ service.		
Standard Finish	Electropolished to 10Ra (0.25µm) EP on all wetted surfaces.		
Options	<ul style="list-style-type: none"> • Optional surface finishes • High temperature capability • Pneumatically operated • Tube stubs, VCR connections • Particle, moisture, THC and O₂ testing • Optional body materials in VIM/VAR st.st. and hastelloy • Proximity sensor to indicate open/close status 		

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