

Diaphragm Seal, Diffusion-Resistant Valves

Diaphragm seal valves are mandatory for high purity gas handling systems where inboard diffusion of air or moisture must be kept to a minimum. Their packless design maintains gas purity at maximum levels (typical inboard leakage is less than 2×10^{-8} scc/sec Helium) while permitting operation at pressures ranging from vacuum to 3000 psig. Advanced diaphragm seal valves are available in brass or Type 316L Stainless Steel construction.

The multi-turn version has a hand wheel which operates from “fully closed” to “fully opened” in approximately $\frac{3}{4}$ turn. The $\frac{1}{4}$ -turn version has a lever-type handle which operates from “fully closed” to “fully opened” in a 90° arc. The handle also serves as a visual aid in determining if the valve is open or closed. For example, the valve is open when the handle is parallel to the piping system. The $\frac{1}{2}$ " NPT diaphragm seal valve can be used on manifolds or systems having higher flow requirements.



SG5460N/SG5463N/SG5480N



SG5475N

Specifications

Operating Pressure Range: Vacuum to 3000 psig

Operating Temperature Range: -40°F to 140°F

Flow Coefficient: See Table I

Inlet and Outlet Connections: See Table I

Materials of Construction

Body: See Table I

Other Metal Parts Exposed to Gas:

Brass Valves: Brass and Stainless Steel

Stainless Steel Valves: Type 316 SS

Seat: PCTFE

Diaphragm: Type 316 Stainless Steel



SG5441N/SG5451N



SG5452N



SG5461N/SG5481N



SG5492V

Table I

Part No.	Body Material	Configuration	Connections		Flow Coefficient (Cv)
			Inlet	Outlet	
SG5440N	Brass Bar Stock	1/4-Turn	1/4" NPT male	1/4" NPT female	0.15
SG5441N	Brass Bar Stock	1/4-Turn	1/4" NPT female	1/4" NPT female	0.15
SG5442	Brass Bar Stock	1/4-Turn	1/4" compression	1/4" compression	0.15
SG5450N	Type 316L SS Bar Stock	1/4-Turn	1/4" NPT male	1/4" NPT female	0.15
SG5451N	Type 316L SS Bar Stock	1/4-Turn	1/4" NPT female	1/4" NPT female	0.15
SG5452N	Type 316L SS Bar Stock	1/4-Turn	1/4" compression	1/4" compression	0.15
SG5453N	Type 316L SS Bar Stock	1/4-Turn	1/4" NPT male	1/4" compression	0.15
SG5460N	Brass Bar Stock	Multi-Turn	1/4" NPT male	1/4" NPT female	0.17
SG5461N	Brass Bar Stock	Multi-Turn	1/4" NPT female	1/4" NPT female	0.17
SG5463N	Nickel-Plated Brass	Multi-Turn	1/4" NPT male	1/4" NPT female	0.17
SG5475N	Type 316L SS	Multi-Turn	1/2" NPT male	1/2" NPT female	0.35
SG5480N	Type 316L SS Bar Stock	Multi-Turn	1/4" NPT male	1/4" NPT female	0.17
SG5481N	Type 316L SS Bar Stock	Multi-Turn	1/4" NPT female	1/4" NPT female	0.17
SG5482V	Type 316L SS Bar Stock	Multi-Turn	1/4" male vacuum*	1/4" male vacuum*	0.26
SG5492V	Type 316L SS Bar Stock	1/4-Turn	1/4" male vacuum*	1/4" male vacuum*	0.15

* Connection is compatible with 1/4" VCR® fittings.