

SI 220 | DIAPHRAGM PRESSURE REGULATOR FOR HP & UHP APPLICATIONS

The SI 220 Regulator was created in response to the industry's need for a Highflow, High Pressure, Springless, Tied Diaphragm Regulator for specialty source gas service, i.e. gas cabinets. The design and materials of construction, plus some unique features make it an ideal choice for gas source applications with reactive and hazardous gases the Semiconductor and Allied Industries use.

APPLICATIONS

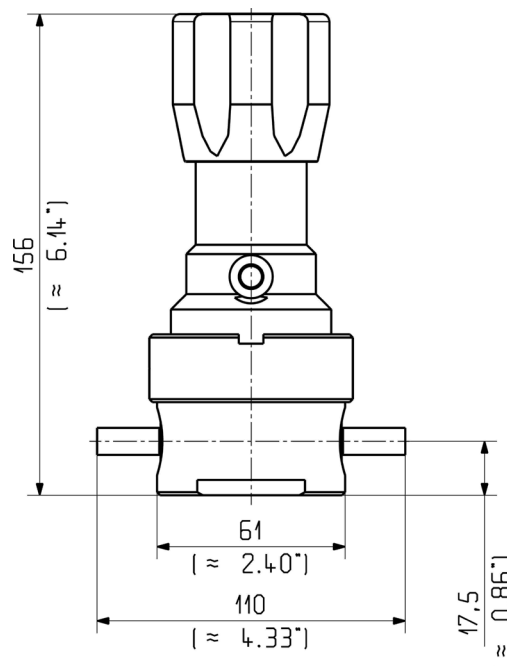
- Tied diaphragm design
- Springless design
- Unique features include a special leak test port that enables the diaphragm seal to be outboard leak tested 10^{-9} mbar.l./sec range at high pressure.
- Precise control of the gas discharge with minimum deviation caused by the supply pressure effect.
- Counter balance springs outside the gas stream to ensure the unit functions correctly with downstream vacuum and upstream high pressure
- A unique spherical ball pressure pad to give ultra smooth delivery pressure adjustment
- Choice of delivery pressure: 3, 8, 10, 15, 25 or 50 bar / 45, 116, 145, 217, 365 or 725 psi

KEY FEATURES

- Individual Serial number, for full traceability
- Ergonomic Design
- Spherical ball for ultra smooth control
- Metal to metal seal to Atmosphere
- Sealed bonnet for extra protection
- Minimal wetted surfaces for optimal purging
- Gas specific solutions (Body and Seat Materials)
- Assembling, testing & Packaging in cleanroom Cl. 10
- Controlled (PC) electropolishing for better corrosion resistance
- No spring in the wetted area for zero particle emission
- 2,3,4 or 6 ports options available
- Diaphragm counter balance springs
- Excellent response at high and low pressures (droop, hysteresis, creep)



DIMENSIONS



SPECIFICATIONS

Fluid Media	Standard, High and Ultra High Purity, corrosive and non-corrosive gases	Temperature range	-20°C to + 60°C (-2F to 140F)	Certified max. Helium outboard leak rate (at max. pressure)	< 1.10 ⁻⁹ mbar.l/sec
Inlet pressure	240 bar (3500 PSI)	Nomnal flow	170 slpm (N ₂)	Certified max. Helium across the seat leak rate (at max. pressure)	< 1.10 ⁻⁹ mbar.l/sec
Outlet pressure	3 - 8 - 10 - 15 - 25 - 50 bar (45-116-145-217-365-725 PSI)	Flow Coefficient (Cv)	CV = 0,2	Number of ports	2, 3, 4, 5 or 6
		Certified max. Helium inboard leak rate	< 1.10 ⁻⁹ mbar.l/sec		

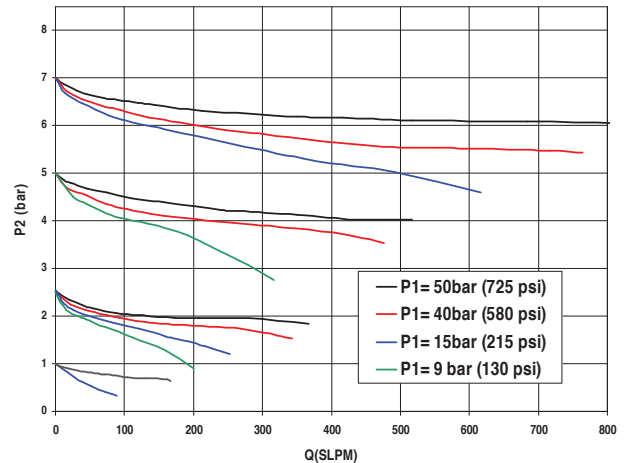
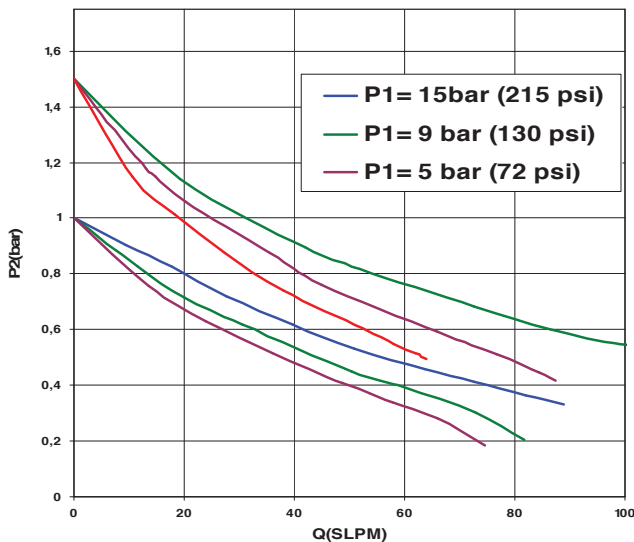
CONSTRUCTION MATERIAL

	Parts	Material
Wetted parts	Body	AISI 316L, VAR, Hastelloy®
	Diaphragm	Hastelloy®
	Seat	PCTFE (Kel-F®)
	Poppet	AISI 316L, VAR, Hastelloy®
Non-wetted parts	Bonnet	Nickel Plated Brass
	Handle	Extruded Plastic
	Others	Stainless Steel or others

SURFACE FINISH

U	V	S
< Ra 0,18µm Ep. (7µin Ra)	< Ra 0,25µm Ep. (10µin Ra)	< Ra 0,4µm nonEP(15µin Ra)

FLOW CURVES



SI	220	Series & Surface Finish	Port Configurations	Body material (other son request)	Seat Material	Outlet regulated Pressure	End Connection
		S	2V1	A	K	10b	A/B: V ^{3/8} F
		Ra 0,18µm Ep. (7µin Ra)	U	AISI 316L, VAR	PCTFE (Kel-F®)	3 bar 45 psi	3b Metal face seal 1/4" - Female
		Ra 0,25µm Ep. (10µin Ra)	V	AISI 316L	I	8 bar 116 psi	8b Metal face seal 3/8" - Female
		Ra 0,4µm nonEP(15µin Ra)	S	Hastelloy®	H	10 bar 145 psi	10b Metal face seal 1/4" - Male
						15 bar 217 psi	15b Metal face seal 3/8" - Male
						25 bar 365 psi	25b Metal face seal 1/4" - Internal Female
						50 bar 725 psi Inlet: 240 bar 3500psi	50b