

AG3870 Series

Ultra High Purity, Positive Seal (Tied Seat), Single-Stage Regulators

The AG3870 Series regulator is designed for use with ultra high purity, corrosive gases, such as those used in semiconductor manufacturing. It is recommended for applications where inlet pressure does not vary greatly, as with liquefied gases. The AG3870 Series features a tied seat (tied diaphragm) design and a stainless steel diaphragm to insure positive shutoff of the regulator with hazardous gases. Particle entrapment and droop are minimized by the welded diaphragm/link assembly.



AG3877 Regulator

Standard Features

- Tied Seat ensures positive shutoff if particulate matter should lodge in the seat, a common problem with corrosive gases.
- 1/16" NPT Female Bonnet Vent Port and Stem Packing allows for complete capturing of bonnet when connected to a vent line or disposal system.
- Low Internal Volume facilitates purging and reduces contamination potential.
- Type 316 Stainless Steel Bar Stock Construction provides maximum corrosion resistance.
- Metal to Metal Diaphragm to Body Seal (without back-up o-ring) assures maximum diffusion resistance.
- High Purity Regulator Design permits vacuum purging of regulator.
- Diaphragm Seal Outlet Valve maintains gas purity.
- Filter traps foreign matter, extends regulator life and reduces maintenance.
- Threaded Holes in Rear of Regulator permit front panel mounting.

Optional Features

- Mounting Ring permits regulator to be panel mounted.
- Internal (Inboard) Helium Leak Test and Test Report determines inboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 2×10^{-8} sccs air equivalent.
- External (Outboard) Helium Leak Test and Test Report determines outboard leak rate of gas from regulator to atmosphere; test report certifies leak rate of less than 5×10^{-7} sccs air equivalent.

Specifications

Maximum Inlet Pressure:

AG3870, AG3872, AG3873: 800 psig
AG3874, AG3876, AG3877: 3000 psig

Inlet Pressure Gauge: See Table I

Delivery Pressure Range: See Table I

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Filter: 40 micron

Gauge Size: 2" Dial

Operating Temp. Range: -40°F to 140°F

Flow Coefficient:

Regulator: Cv = 0.06

Outlet Valve: Cv = 0.17

Internal Volume:

Regulator (body only): 6.0 cc

Bonnet Vent Connection: 1/16" NPT female

Inlet Connection: CGA 320, 326, 330, 350, 580, 660 or 705 as ordered

Outlet Connection: 1/4" NPT female

Approximate Weight: 3 lbs.

Materials of Construction

Body and Outlet Valve:

Type 316 Stainless Steel Bar Stock

Gauges: Type 316 Stainless Steel

Bonnet: 300 Series Stainless Steel

Other Metal Parts Exposed to Gas:

Type 316 Stainless Steel

Seats: PCTFE

Friction Sleeve: Teflon®

Diaphragms: Type 316 Stainless Steel

Table I

Part No.	Inlet Pressure		Delivery Pressure		
	Gauge (dual scale) (psig)	(bar)	Range (psig)	Gauge (dual scale) (psig)	(bar)
AG3870-(CGA)	0-1000	0-69	2-30	-30" Hg-0-60	-1-0-4
AG3872-(CGA)	0-1000	0-69	4-75	-30" Hg-0-100	-1-0-7
AG3873-(CGA)	0-1000	0-69	10-150	-30" Hg-0-200	-1-0-14
AG3874-(CGA)	0-4000	0-275	2-30	-30" Hg-0-60	-1-0-4
AG3876-(CGA)	0-4000	0-275	4-75	-30" Hg-0-100	-1-0-7
AG3877-(CGA)	0-4000	0-275	10-150	-30" Hg-0-200	-1-0-14

Where "(CGA)" is indicated above, insert appropriate Compressed Gas Association connection number to complete the part number. Example: AG3870-330. Order by complete part number.

Optional Equipment

Equipment	Part No.
Panel Mounting Ring*	PM3803
Regulator Mounting Plate*	RP1
Inboard Helium Leak Test and Test Report	HT1000
Outboard Helium Leak Test and Test Report	HT1001
Outlet Fittings* (male connectors)	
1/4" NPT male x 1/8" compression	SG6713
1/4" NPT male x 1/4" compression	SG6714
1/4" NPT male x 1/4" VCR® male	SG6960
1/16" NPT male x 1/8" compression	SG6715
Safety Mounting Brackets*	See page 62
Purge Assemblies* (cross purge assemblies are recommended)	See page 134

* If selected, these items are not installed on the regulator. They are shipped as separate items.