

# Model HPD

## Ultra High Purity, Single-Stage, Bar Stock Regulators

Model HPD brass bar stock regulators are designed to regulate ultra high purity non-corrosive gases commonly used in analytical instrument applications. The metal to metal diaphragm to body seal design assures maximum diffusion resistance. Convulsed stainless steel diaphragms provide enhanced performance and excellent accuracy. These regulators are specially suited for use in gas delivery systems requiring high leak integrity and minimal internal volume for maintaining guaranteed gas purity levels. These single-stage regulators are recommended for use with gases where inlet pressure does not vary greatly (such as liquefied gases), or where periodic readjustment of delivery pressure setting does not present a problem.



HPD Regulator

### Standard Features

- 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.
- Low Internal Volume facilitates purging and reduces contamination potential.
- 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.
- 1/16" NPT Female Bonnet Vent Port allows bonnet to be connected to a vent line or disposal system as a precaution in the unlikely event of a diaphragm failure.

### 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  $2 \times 10^{-8}$  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  $5 \times 10^{-7}$  sccs air equivalent.

### Specifications

Maximum Inlet Pressure:

- HPD-3: 3000 psig
- HPD-2: 800 psig
- HPD-1: 300 psig

Inlet Pressure Gauge: See Table I

Delivery Pressure Range: See Table I

Delivery Pressure Gauge: See Table I

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 296, 320, 326, 346, 350, 510, 540, 580, 590, or 660 as ordered

Outlet Connection: 1/4" NPT female

Supply Pressure Effect: 1 psi per 100 psi

Approximate Weight: 3 lbs.

### Materials of Construction

Body, Bonnet and Outlet Valve:  
Brass Bar Stock

Gauges: Brass

Filter: Sintered Bronze

Other Metal Parts Exposed to Gas:  
Brass and 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)
HPD-3-30-(CGA)	0-4000	0-275	2-30	-30" Hg-0-60	-1-0-4
HPD-3-75-(CGA)	0-4000	0-275	4-75	-30" Hg-0-100	-1-0-7
HPD-3-150-(CGA)	0-4000	0-275	10-150	-30" Hg-0-200	-1-0-14
HPD-3-300-(CGA)	0-4000	0-275	20-300	0-400	0-27
HPD-3-500-(CGA)	0-4000	0-275	30-500	0-600	0-41
HPD-2-30-(CGA)	0-1000	0-69	2-30	-30" Hg-0-60	-1-0-4
HPD-2-75-(CGA)	0-1000	0-69	4-75	-30" Hg-0-100	-1-0-7
HPD-2-150-(CGA)	0-1000	0-69	10-150	-30" Hg-0-200	-1-0-14
HPD-2-300-(CGA)	0-1000	0-69	20-300	0-400	0-27
HPD-2-500-(CGA)	0-1000	0-69	30-500	0-600	0-41
HPD-1-30-(CGA)	0-400	0-27	2-30	-30" Hg-0-60	-1-0-4
HPD-1-75-(CGA)	0-400	0-27	4-75	-30" Hg-0-100	-1-0-7
HPD-1-150-(CGA)	0-400	0-27	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: HPD-3-30-580. Order by complete part number.

### Optional Equipment

Equipment	Part No.
Panel Mounting Ring*	PM3803
Inboard Helium Leak Test and Test Report	HT1000
Outboard Helium Leak Test and Test Report	HT1001
Compression Fittings* (male connectors)	
1/4" NPT male x 1/8" compression	SG6703
1/4" NPT male x 1/4" compression	SG6704
1/16" NPT male x 1/8" compression	SG6705
Safety Mounting Brackets*	See page 62
Regulator Mounting Plate for Model HPD*	RP1

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