

# Model 3100 Series

## High Purity Brass Regulators

### DESCRIPTION

The Models 3102 and 3104 brass all metal pressure regulators provide the sensitive pressure control demanded for high purity carrier gas or calibration mixture applications in gas chromatography. The two-stage design guarantees constant delivery pressure regardless of variations in cylinder pressure insuring accurate analysis.

### APPLICATIONS

Gas Chromatography  
Thermal Conductivity  
Flame Ionization (FID)  
Flame Photometric  
Electron Capture (ECD)

Instrument Analysis Techniques in which brass is acceptable.

Semiconductor Manufacture applications in which brass is acceptable.

### DESIGN FEATURES

- **Large Second-Stage Diaphragm** . . . Assures sensitive pressure control even under changing flow conditions.
- **Brass Body/Stainless Steel Diaphragm** . . . Assures high system purity for non-corrosive gas streams.
- **Ultrasonically Cleaned** . . . Allows high purity gas handling without costly "pre-cleaning".
- **Interstage Relief Valve preset to 600 psi** . . . Protects second-stage and the operating system in the unlikely event of first stage failure.
- **Relief valve and bonnet port threaded** . . . Allows safe venting of hazardous gases in the unlikely event of diaphragm failure.
- **Helium leak rate certification available** . . . Assurance that inboard leak rate is less than  $2 \times 10^{-8}$  sccs and that possible back diffusion of atmospheric contamination is eliminated.
- **Diaphragm sealed packless outlet valve** . . . Maintains system purity even at regulator outlet.

### MATERIALS OF CONSTRUCTION

Body: Brass  
Diaphragm: 302 Stainless Steel  
Seat: Molded Tefzel  
Gaskets: Viton®  
Relief valve seat: Teflon®

### SPECIFICATIONS

Maximum inlet pressure: 3000 psi (20,700 kPa)  
Temperature range: - 0°F to 150°F (- 18°F to 65°C)  
Maximum flow: 3102: 150 cfh ( 70 liters/min)  
3104: 630 cfh (300 liters/min)  
w/o valve 1,250 cfh  
Flow coefficient:  $C_v = 0.16$  less outlet valve  
Inlet port in body: 1/4" NPT  
Relief Valve Bonnet Vent Port: 1/4" F NPT  
Outlet: 1/4" flareless tube fitting (Brass)  
Overall dimensions: 8 1/2" w x 8 1/2" h x 8" d  
(22 x 22 x 20 cm)  
Shipping weight: 9 1/2 lbs. (4.3 kg)

For additional information, request Tech/Brief TB-128.



### MODELS

Model (Specify CGA)	Delivery Pressure Range (psig)	Delivery Pressure Gauge (psig)	Cylinder Pressure Gauge (psig)
3102 (Specify CGA)	0-15	30" vac-0-30	0-3000
3104 (Specify CGA)	4-100	0-200	0-3000

### OPTIONS

**Inboard Helium Leak Rate Certification** — Consists of a five minute check of Helium diffusion into the regulator. Maximum acceptable leak rate is  $2 \times 10^{-8}$  ccs.

#### Combination Inboard/outboard Helium Leak Rate Certification

**Tee Purge Assembly — Model 4753-350** (510 and 660 also available) used for eliminating atmospheric contamination or hazardous materials before and after use (for details see page 175).

#### Bonnet Venting Kit

**Cross Purge Assembly — Model 4774** — Eliminates the escape of toxic, corrosive, and/or flammable gases when regulator is disconnected from gas source. Also eliminates atmospheric contamination before use (for details see page 175).

**Low Temperature Operating Kit** — Allows the use of these regulators to temperatures as low as - 40°F (- 40°C)