

## Ultra High Purity Stainless Steel Two-Stage Models (Threadless Seat)

**Description:** This series of stainless steel two-stage regulators are designed to have minimal gas paths in the regulators and prevent contaminants from entering during cylinder change out. These regulators have a check valve cylinder connection, packless diaphragm valve built into the regulator, and a 1/8" stainless steel compression fitting on the outlet. The regulator also has a unique design that causes the gas to continuously sweep the diaphragm chamber ensuring that there is no air or other contaminants in the regulator body. The diaphragm valve built into the body shortens the gas path allowing the gas to enter the process more quickly and without contamination. This makes it an excellent regulator for EPA protocol gas mixtures, as well as other high purity applications.

The two-stage design provides a constant delivery pressure and the supply inlet effect that causes the outlet pressure to change as the inlet pressure drops is less than .01/100 psi of inlet pressure change.

Convuluted Hastelloy C-22 diaphragms provide excellent regulating characteristics and allow for internal vacuum purging. The metal-to-metal diaphragm seal prevents contamination by eliminating the need for a soft seal and provides a leak-rate design of less than  $2 \times 10^{-6}$  ccs helium. This minimizes cleanup time in vacuum purging and yields lower residual contaminant levels.

Captured bonnet ports with optional vent adaptors are standard on both stages and allow the venting of hazardous gases in the event of diaphragm failure. These regulators are ultrasonically cleaned for the most demanding high-purity service.

Ultra High-Purity

PRESSURE REGULATORS



### Design Features

- Packless diaphragm valve built into the body**
- Unique internal design sweeps diaphragm cavity**
- Check valve CGA**
- Convuluted Hastelloy® C-22 Diaphragms**  
provide superior leak integrity without contamination from a non-metallic liner or seal.
- Bonnet Vent Ports** (with optional bonnet vent adaptors)  
allow venting of hazardous gases in the event of diaphragm failure.
- Standard Threaded Bonnet** (with optional collar-mount nuts)  
for easy panel mounting.
- Diaphragm Packless Valve** (with 1/8" Compression fitting)  
promotes system purity.
- Threadless Seat Design**  
provides longer regulator life.

### Specifications

<b>Maximum Rated Inlet Pressure</b>	4,000 psig
<b>Outlet Pressure Ranges</b>	0-30, 0-60, 0-100, 0-250 psig
<b>Flow Capacity</b>	Cv=0.06
<b>Ambient Operating Temperature</b>	-40° F to +150° F
<b>Designed Leak Rate</b>	bubble tight
<b>Weight</b>	4 lbs
<b>Ports (5)</b>	1/4" FNPT
<b>Inlet</b>	1/4" FNPT
<b>Outlet</b>	1/8" Compression
<b>Decay Inlet Characteristic</b>	0.01/100 psi

### Materials

<b>Body</b>	316 Stainless Steel
<b>Bonnet</b>	Nickel-Plated Brass
<b>Seat</b>	PCTFE
<b>Diaphragm</b>	Hastelloy C-22
<b>Gauges</b>	2 1/2" Stainless Steel
<b>Filter</b>	316 Stainless Steel
<b>Outlet Valve</b>	316 Stainless Steel
<b>Trim</b>	316 Stainless Steel
<b>Poppet Spring</b>	Inconel

## Ultra High Purity Stainless Steel Two-Stage Models (Threadless Seat) Cont.

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PRESSURE REGULATORS

Ordering Information						
Product Number	Material	Max Inlet Pressure (psig)	Max Outlet Pressure (psig)	Capacity (scfh @ Max Del. Pressure)	Inlet Gauge Range (psig)	Delivery Gauge Range (psig)
Y12-CHP445A(CGA)	316 SS	4,000	30	190	0 - 4,000	30 Hg - 0 - 30
Y12-CHP445B(CGA)	316 SS	4,000	60	270	0 - 4,000	0 - 100
Y12-CHP445D(CGA)	316 SS	4,000	100	380	0 - 4,000	0 - 200
Y12-CHP445F(CGA)	316 SS	4,000	250	850	0 - 4,000	0 - 400

Available Options	
Product Number	Description
Y99-CHROMNUT	Panel Mounting Nut
Y99-BONNETADP	Bonnet Vent Adaptor
Y99-4VCR	1/4" VCR® connection on Inlet/Outlet (VCR x 1/4" MNPT)
Y15-QMS1	Quick Mounting Option for 1 Cylinder
Y15-QMS2	Quick Mounting Option for 2 Cylinders