

Gas Regulators

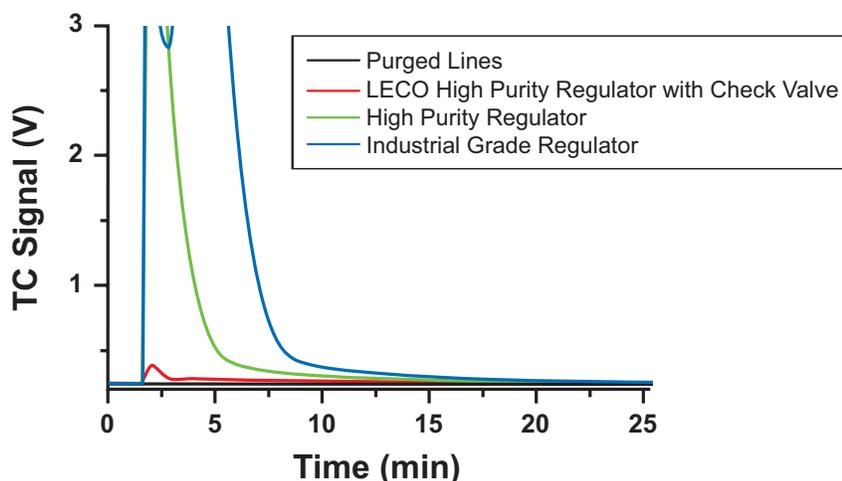
LECO Corporation now offers High Purity Gas Cylinder Regulators for use with its full line of high performance elemental analyzers, calorimeters, thermogravimetric analyzers, and spectrometers.

The construction of these regulators has been carefully selected to ensure the highest leak integrity, contamination resistance, and ease of use.



- Constructed of nickel-plated brass barstock for increased contamination resistance and improved resistance to adsorption of moisture and impurities.
- Metal diaphragms—316 Stainless or Hastelloy C22—are utilized to minimize adsorption and diffusion of contaminants.
- Cartridge or threadless seats for improved flow, enhanced pressure regulation, and increased lifetime.
- Outlet valve utilizing a 1/4-turn packless diaphragm for increased contamination resistance and easy shut-off capability.
- Swagelok outlet fittings with 1/4 in to 1/8 in line adaptor for ease of use and increased contamination resistance.
- Cylinder connections with check valves for reduced line contamination during cylinder change.
- The Ultra High Purity regulator utilizes a proprietary diaphragm chamber which ensures responsiveness, pressure regulation with flow changes, repeatability in delivery pressure, and ease of operation.

The incorporation of a check valve into the gas inlet of the regulator reduces contamination in the regulator and instrument gas supply lines during cylinder change. The check valve regulator results in faster instrument recovery and stabilization time required after a cylinder change. The following chart illustrates thermal conductivity (TC) detector disturbances of various gas cylinder regulator technologies after gas cylinder change. As the chart shows, the LECO High Purity Regulator with check valve returns to baseline in less than 2 minutes, compared to other high purity regulators without check valves (10 minutes) or industrial grade regulators without check valves (22 minutes).



Comparison of TC cell disturbances during gas cylinder changes.



Cylinder Connector with Check Valve

	In-line	High Purity Two-Stage Brass Regulator	Ultra High Purity Two-Stage Brass Regulator*	Scientific Series Brass Regulator
Gas	All	Inert Gas CO ₂ Oxygen Hydrogen	Inert Gas	Air
External Surfaces	Nickel Plated	Nickel Plated	Nickel Plated	Nickel Plated
Max. Inlet Pressure	1250 psi	3500 psi	3500 psi	3500 psi
Outlet Pressure	50 psi	50 psi	50 psi	125 psi
Body Material	Stainless Steel	Brass Barstock	Brass Barstock	Brass Barstock
Diaphragm	Hastelloy C22 with metal-to-metal seal	316 Stainless Steel with metal-to-metal seal	Hastelloy C22 with metal-to-metal seal	316 Stainless Steel with Teflon seal
Bonnet	Machined brass	Machined brass	Machined brass	Die Cast Zinc
Seat	Threadless seat	Cartridge seat	Threadless seat	Cartridge seat
Gauges	2.5 in Dual scale psi/bar	2.5 in Dual scale psi/bar	2.5 in Dual scale psi/bar	2.5 in Dual scale psi/bar
Outlet Valve	1/4-turn packless diaphragm valve			
Outlet Connection	1/4 in Swagelok with 1/4 in to 1/8 in Swagelok adaptor			
Leak Integrity (scc/sec)	2x10 ⁻⁸	2x10 ⁻⁸	2x10 ⁻⁸	Bubble tight helium
Flow Coefficient (Cv)	0.15	0.02	0.06	0.02
Part Numbers	633-103-359	See chart below	See chart below	See chart below

Cylinder Connections/Part Numbers

Oxygen		Inert Gas		Air	
Cylinder Connection	Part Number	Cylinder Connection	Part Number	Cylinder Connection	Part Number
CGA 540	633-103-356	CGA 580	633-103-358	CGA 346	633-103-354
DIN 9	633-103-362	DIN 10	633-103-364	DIN 13	633-103-360

CO ₂		Hydrogen		UHP Inert Gas*	
Cylinder Connection	Part Number	Cylinder Connection	Part Number	Cylinder Connection	Part Number
CGA 320	633-103-355	CGA 350	633-103-357	CGA580	633-103-353
DIN 6	633-103-361	DIN 1	633-103-363	N/A	N/A

*Recommended for RHEN602



In-line Brass Regulator



High Purity Two-Stage Brass Regulator



Ultra High Purity Two-Stage Brass Regulator



Scientific Series Brass Regulator

Specifications and part numbers may change. Consult LECO for latest information.

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