

Silcosteel® Regulators and Switchover Systems

Applications:

- CEM continuous emission monitoring.
- Environmental stack and gas emission standards.
- Low-level sulfur and mercury analysis.
- Reactive or corrosive gases.
- Off-shore platform systems.
- Corrosive and salt water exposure.

Single- and dual-stage regulators and switchover systems are available with Silcosteel® surface treatment. This proprietary passivation process provides excellent inertness for sulfur and mercury calibration standards and improved corrosion resistance over bare 316L stainless steel or other more expensive alloys.

Silcosteel®-treated sampling and transfer systems allow oil and gas exploration companies, chemical and petrochemical plants, and refineries to obtain accurate sulfur and mercury data the first time, every time, with no delay, sample errors, or false readings, down to part-per-billion (ppb) levels. Analysts charged with monitoring sulfur and mercury levels in process streams can save thousands of dollars in improved yields, better test cycle times, and improved system reliability.

Silcosteel® Regulators (Dual Stage & Single Stage)

Description	qty.	cat.#
Single-Stage Regulator		
CGA 330 (H ₂ S and other reduced sulfurs)	ea.	21361-5
CGA 350 (H ₂ , P ₂)	ea.	21361-6
CGA 660 (NO, NO ₂ , SO ₂)	ea.	21361-11
Dual-Stage Regulator		
CGA 330 (H ₂ S and other reduced sulfurs)	ea.	21360-2
CGA 350 (H ₂ , P ₂)	ea.	21360-7

For other CGA fittings, please contact your local Restek representative.



Outlet pressure: 0 to 150 psig
 Outlet gauge: 30"-0 to 200 psig
 Inlet gauge: 0 to 4,000 psig
 Outlet assembly: diaphragm valve, 1/4" tube fitting

Automatic Switchover System for Corrosive Gases (Silcosteel®-Treated)

Description	qty.	cat.#
CGA 320 (CO ₂ , CH ₃ F)	ea.	22364320
CGA 330 (H ₂ S and other reduced sulfurs)	ea.	22364330
CGA 350 (H ₂ , P ₂)	ea.	22364350



Outlet pressure: 0 to 150 psig
 Outlet gauge: 30"-0 to 200 psig
 Inlet gauge: 0 to 4,000 psig
 Outlet assembly: diaphragm valve, 1/4" tube fitting

Overview of Restek Ultra-High Purity (UHP) Gas Regulators

- Regulators feature metal-to-metal seals throughout for long-term leak-tightness.
- Metal diaphragm outlet valve ensures gas purity.
- Each regulator is helium leak-test-certifiable to 1×10^{-8} scc/sec.
- Temperature range: -40 °C to 60 °C.

Ultra-High Purity (UHP) Brass Body Gas Regulators

UHP brass regulators are the best choice when using ultra-high purity carrier gas for sensitive GC applications using MS, PID, or ECD detection methods. They feature reduced internal dead volume relative to stainless steel bodies. The metal valve diaphragm ensures leak-free shutoff. Oxidation-resistant chrome plating maintains a like-new appearance.

Dual-Stage Ultra-High Purity Chrome-Plated Brass Gas Regulators

- Oxidation-resistant, chrome-plated.
- Most stable outlet pressure control.
- Secondary pressure regulation not needed.
- Most widely used regulator.
- Less internal volume than stainless steel gas regulators.



All regulators are rated to 3,000 psig (20,684 kPa) maximum inlet pressure.

Inlet gauge: 0 to 4,000 psig (0–27,579 kPa)
Outlet assembly: diaphragm valve, $\frac{1}{4}$ " tube fitting

Fitting	Outlet Pressure	Outlet Gauge	qty.	cat. #
CGA 580 (N ₂ , He, Ar)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	21667
CGA 350 (H ₂ , P ₂)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	21668
CGA 590 (Air)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	21669
DIN 477 #1 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22369
DIN 477 #6 (He, Ar)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22368
DIN 477 #9 (Air)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22370
DIN 477 #10 (N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22371
BS 341 #3 (He, Ar, Air, N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22136
BS 341 #4 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22137

Note: CGA fittings are for U.S. use; DIN fittings are for European use; BS fittings are for use in the UK.

Single-Stage Ultra-High Purity Chrome-Plated Brass Gas Regulators

- Oxidation-resistant, chrome-plated.
- Use when there is secondary pressure regulation downstream.
- Identical gas purity protection as with dual-stage gas regulators.



All regulators are rated to 3,000 psig (20,684 kPa) maximum inlet pressure.

Inlet gauge: 0 to 4,000 psig (0–27,579 kPa)
Outlet assembly: diaphragm valve, $\frac{1}{4}$ " tube fitting

Fitting	Outlet Pressure	Outlet Gauge	qty.	cat. #
CGA 580 (N ₂ , He, Ar)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20646
CGA 350 (H ₂ , P ₂)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20647
CGA 590 (Air)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20648
DIN 477 #1 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22373
DIN 477 #6 (He, Ar)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22372
DIN 477 #9 (Air)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22374
DIN 477 #10 (N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22375
BS 341 #3 (He, Ar, Air, N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22138
BS 341 #4 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22139

Note: CGA fittings are for U.S. use; DIN fittings are for European use; BS fittings are for use in the UK.

Ultra-High Purity Chrome-Plated Brass Line Gas Regulator

- Oxidation-resistant, chrome-plated.
- Use where you need to reduce the line pressure by 20 psig (138 kPa) or more.
- Same purity protection as high-pressure cylinder regulators.



Inlet connections: $\frac{1}{4}$ " FPT
Outlet assembly: $\frac{1}{4}$ " FPT port

Fitting	Outlet Pressure	Outlet Gauge	qty.	cat. #
$\frac{1}{4}$ " female NPT ports*	0–50 psig (0–345 kPa)	30", 0 to 100 psig (0–689 kPa)	ea.	21666
$\frac{1}{4}$ " female NPT ports*	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	22452

*Order appropriate male connector, pipe-to-tube fittings.

Ultra-High Purity (UHP) Stainless Steel Body Gas Regulators

UHP stainless steel regulators are the standard for ultra-high-purity and corrosion-resistant pressure regulation. They are more easily purged of atmospheric components, compared to brass gas regulators, making them ideal for the most demanding applications. Stainless steel is especially useful in atmospheres of dry corrosive gases such as hydrogen.

Dual-Stage Ultra-High Purity Stainless Steel Gas Regulators

- Most stable outlet pressure control.
- Secondary pressure regulation not needed.

Fitting	Outlet Pressure	Outlet Gauge	qty.	cat.#
CGA 580 (N ₂ , He, Ar)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20662
CGA 350 (H ₂ , Ps)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20663
CGA 590 (Air)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20664
DIN 477 #1 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22377
DIN 477 #6 (He, Ar)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22376
DIN 477 #9 (Air)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22378
DIN 477 #10 (N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22379
BS 341 #3 (He, Ar, Air, N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22140
BS 341 #4 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22141

Note: CGA fittings are for U.S. use; DIN fittings are for European use; BS fittings are for use in the UK.

Single-Stage Ultra-High Purity Stainless Steel Gas Regulators

- Use when there is secondary pressure regulation downstream.
- Identical gas purity protection as with dual-stage gas regulators.

Fitting	Outlet Pressure	Outlet Gauge	qty.	cat.#
CGA 580 (N ₂ , He, Ar)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20665
CGA 350 (H ₂ , Ps)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20666
CGA 590 (Air)	0 to 150 psig (0–1,034 kPa)	30", 0 to 200 psig (0–1,379 kPa)	ea.	20667
DIN 477 #1 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22380
DIN 477 #6 (He, Ar)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22445
DIN 477 #9 (Air)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22446
DIN 477 #10 (N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22447
BS 341 #3 (He, Ar, Air, N ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22142
BS 341 #4 (H ₂)	0 to 10 bar (0–150 psig)	30", 0 to 14 bar (0–200 psig)	ea.	22143

Note: CGA fittings are for U.S. use; DIN fittings are for European use; BS fittings are for use in the UK.



All regulators are rated to 3,000 psig (20,684 kPa) maximum inlet pressure.

Inlet gauge: 0 to 4,000 psig (0–27,579 kPa)

Outlet assembly: diaphragm valve, 1/4" tube fitting



All regulators are rated to 3,000 psig (20,684 kPa) maximum inlet pressure.

Inlet gauge: 0 to 4,000 psig (0–27,579 kPa)

Outlet assembly: diaphragm valve, 1/4" tube fitting

ordering note

International Fittings

All gas regulators are available with the following BS (British Standard) and DIN (German Industrial Standards Organization) connections. Please contact your local Restek representative for more information.

BS 341 #01	BS 341 #08	BS 341 #15	DIN 477 #06	DIN 477 #10	DIN 477 #14
BS 341 #02	BS 341 #10	DIN 477 #01	DIN 477 #07	DIN 477 #11	DIN 477 #15
BS 341 #03	BS 341 #13	DIN 477 #03	DIN 477 #08	DIN 477 #12	
BS 341 #04	BS 341 #14	DIN 477 #05	DIN 477 #09	DIN 477 #13	



BS 341 #3 Fitting



DIN 477 #3 Fitting