Introduction to Gas Handling Equipment

GTS' equipment section contains a wide variety of products necessary for the proper handling and delivery of specialty gases. All of the items offered in this greatly expanded equipment line are of the highest quality and are state of the art.

The expanded use of specialty gases, and the increased demand for higher levels of purity, has created a need for more sophisticated delivery systems of the highest quality and integrity. Stringent quality control in our equipment line, just as in the production of gases and mixtures, is a vital part of our operation to insure that our customers receive products of uncompromising quality.

Regulators

- **The Purpose of a Regulator.** Pressure regulators reduce the pressure of a gas supplied from a high pressure source to a desired working pressure. A regulator does not control flow unless equipped with a flow control device, such as a metering valve, on the outlet.
- **Single Stage Regulators.** Single stage regulators reduce cylinder or line pressure to working (outlet) pressure in one step. Extensive changes in inlet pressure result in delivery pressure variations. They are recommended in systems where inlet pressure is constant, i.e., in liquefied gas systems or where some variation of delivery pressure can be tolerated.
- **Two Stage Regulators.** Two stage regulators reduce pressure in two steps. Inlet pressure is reduced in the first stage to a pre-set intermediate pressure. Because the inlet pressure to the second stage is constant, the delivery pressure is not affected by changes in the cylinder or line pressure. Two stage regulators give a more precise and constant control and are recommended for use with all high pressure gases and gas mixtures and also with liquefied gas where changes in ambient temperature may cause large variations in cylinder pressure.

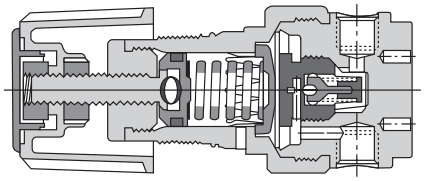
  Most regulators, whether single or two stage, are equipped with two gauges, inlet pressure and delivery pressure. Some regulators used with low pressure liquefied gases do not have an inlet pressure/gauge since cylinder pressure is relatively constant until the last liquid has vaporized.
- **Flow Rates.** The regulators shown on the following pages are designed for use with specialty gases and have the proper flow capacity for most applications. Because rate of flow depends on many variables (inlet and outlet pressure, outlet fittings, length of line, etc.), a single figure for flow capacity has little significance. For more specific flow capacity information, contact your nearest GTS location.

- **Warranty.** GTS warrants that any pressure regulator sold by GTS will perform in accordance with published specifications for the time period listed below, on the condition that it is used according to our recommendations and not abused, modified or otherwise tampered with by the user.

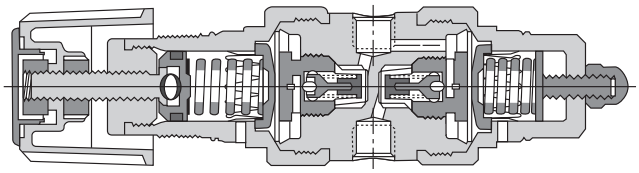
  1. Regulators used in non-corrosive service are warranteed for 1 year from date of shipment. These include the Series 420, 325, 315, 158, 150, 120, 100, 145, 360, S250B, 170, 270, 700, 720, 152, 900, S-EC1, S270 and S202.

  2. Regulators used in corrosive gas service are warranteed for 6 months from date of shipment. This warranty is limited to repair or replacement at seller's option. These include the Series S300, S250S, S320, S300VCR®, S220, S210, S360S, S960, S450, S452 and S190S.

- **Warranty; Limitation of Liability.** SELLER MAKES NO OTHER WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, IN FACT OR BY LAW, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Seller's sole liability and Buyer's exclusive remedy for the delivery of products not conforming to specification shall be limited to the replacement of such non-conforming Products delivered by Seller. Seller shall not be liable in contract or tort for any other direct, or for any indirect, incidental, special, punitive or consequential damages, including by way of illustration and not of limitation, loss of use, loss of work in process, downtime or loss of profit. Notice of a claim as to any non-conforming products delivered to Buyer shall be made within ten (10) days of the date of delivery and failure to give such notice shall constitute a waiver by Buyer of all claims with respect to such nonconformity.



Single Stage



Two Stage

Glossary of Terms

Self Contained Pressure Regulator - A pressure regulating device wherein all elements of the mechanism are contained in one unit.

Single Stage Pressure Reducing Regulator - A regulator which reduces high pressure to low pressure and controls the low or outlet pressure with one stage of pressure reduction.

Two Stage Pressure Reducing Regulator - A regulator which reduces high pressure to low pressure and controls the low or outlet pressure with two stages of pressure reduction. Used when more stability of operation is required.

Back Pressure Regulator - Used for controlling inlet pressure (upstream pressure) rather than reducing. Normally used for pressure relief applications.

Dome Loaded Pressure Regulator - Can be a pressure reducing or a back pressure type. It is not a completely contained regulator. In place of the range spring and associated components the load is placed on the regulator diaphragm or piston by external means. It is usually pneumatic but it can be loaded by bleeding down inlet pressure of the regulator.

Hand Loaded Pressure Regulator - A spring loaded manually controlled pressure reducing regulator usually used to apply pressure to the dome of a dome loaded regulator.

Inlet Pressure - Always the pressure at the inlet of the regulator regardless of whether you are speaking of a pressure reducing or back pressure types.

Outlet Pressure - Always the pressure at the outlet of the regulator regardless of whether you are speaking of a pressure reducing or back pressure types.

Absolute Pressure - Usually expressed as psia. This is the pressure reading taking into consideration atmospheric pressure of 14.7 psi at 68˚ F. Pounds per square inch gauge (psig) plus 14.7 equals psia. (psig + 14.7 = psia)

CGA/DIN Fittings - CGA is the abbreviation for Compressed Gas Association which is the group that has established standards in the gas industry for fittings which are used to attach to gas cylinders. The DIN system is European and established by the Germans and used by everyone else in Europe.

Process Wetted - This term refers to the area of the device which come into contact with the flow system. This does not normally include the cap, range spring knob, etc.

Creep - This is an increase in outlet pressure occurring after the initial setting. Creep normally appears as a gradual rise in outlet pressure over a period of time. The usual cause of creep is contamination on the regulator seat assembly causing the seat assembly to remain slightly open allowing a rise in outlet pressure.

Bubble Tight Shutoff - Determined by attaching a section of tubing to the outlet of the regulator and submerging the open end in water. No bubbles should be detected over a given period of time.

Balanced Poppet - This is a design description of the poppet assembly wherein the forces exerted on the top and the bottom of the poppet are equal. In the case of regulator description the unit is sometimes referred to as a balanced pressure regulator or pressure compensated regulator.

Set Point - this is the control point desired for operation of a regulator.

Inboard Leakage - This refers to the leakage of the atmosphere or the environment surrounding the regulator while it is in service at operating pressure. The test for this usually done with a mass spectrometer leak detector which is sensitive to helium and for practical purposes a Vacuum is pulled on the internal of the regulator and helium surrounding the regulator. For this reason the leak rate is usually expressed in std cc per second of helium and the numbers are usually small such as 1 x 10-8 cc/sec helium.

Outboard Leakage - This refers to leakage of the regulator form the internal area to the atmosphere while at operating pressures.

Supply Pressure Effect or Regulation Accuracy - This is accuracy of the set pressure or outlet pressure with a change in the inlet pressure. In the case of a single stage regulator, 1 % accuracy means 1 psi outlet change per 100 psi inlet change.

Droop - This is the amount of outlet pressure decrease with respect to increasing flow demand on a pressure reducing regulator. It can be expressed in percentage change of the set point or can be shown as pounds per square inch change with respect to flow increases.

Setability - This is a term used to describe the ability to adjust a hand loaded pressure regulator to a specific set point. This involves the number of turns of rotation on the adjusting knob to reach the set point. This is sometimes referred to as resolutions.

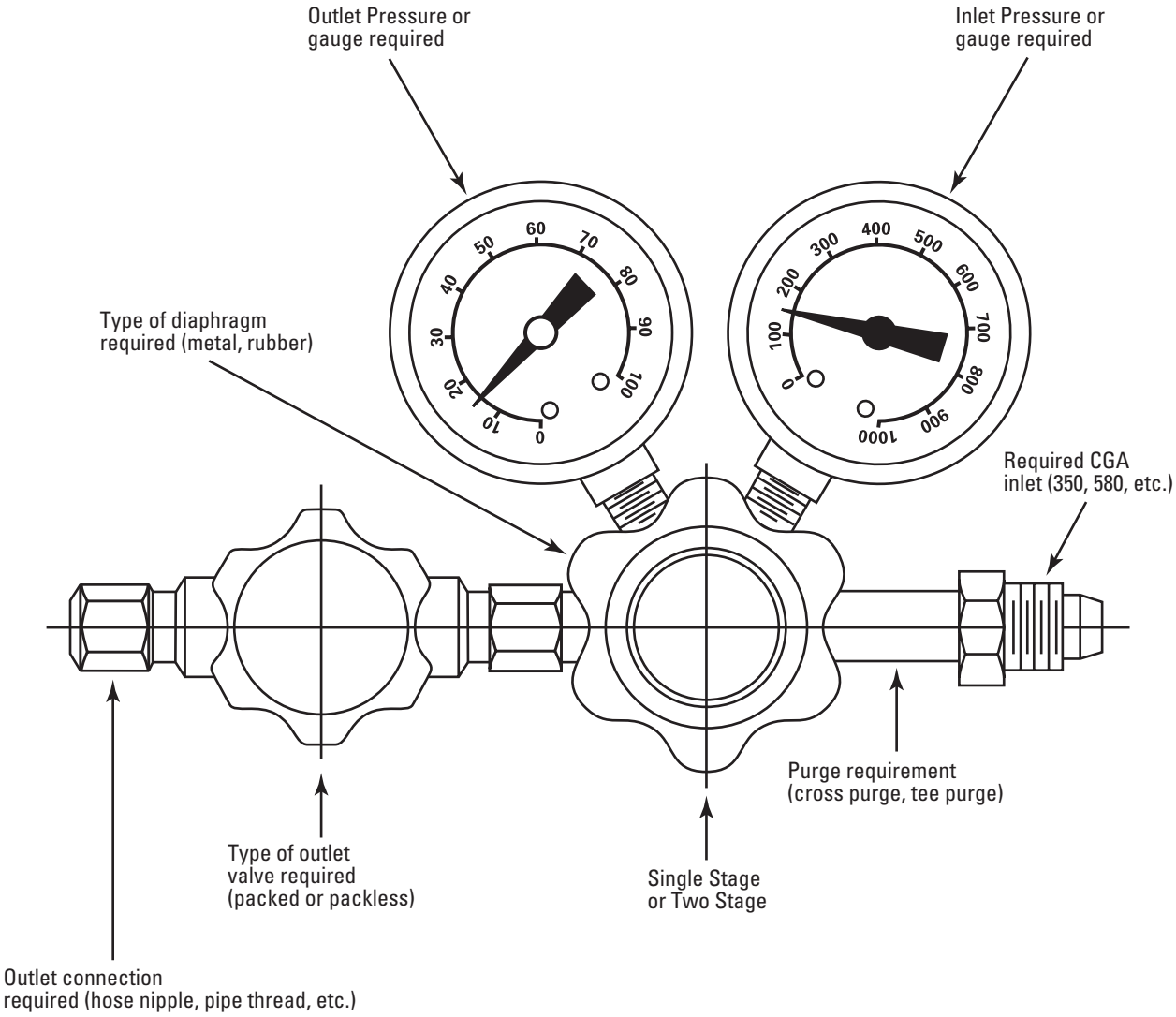
Cv - Flow Coefficient. This is a flow expression which number is a measure of the gallons per minute of water that will pass through a stated flow restriction based on a pressure drop of one psi.

Critical Flow - This is also sometimes referred to as sonic flow and is the maximum flow which can pass through a regulator or an orifice.

Flow Rate - A quantity of gas or liquid passing through a controlled orifice during a specific time period. Units of measure include, SCFM - Standard Cubic Feet Per Minute, SCFH - Standard Cubic Feet Per Hour.

SLPM - Standard Liters Per Minute, SCC/Min - Standards Cubic Centimeters Per Minute. Standard condition for all of the above are 68˚ F and 14.7 psia.

How To Order A Regulator



If possible, specify GTS series and product code. Recommendations for specific gas handling applications are given under "Equipment Recommendation" in the Pure Gas section of this catalog.

CYLINDER PRESSURE REGULATORS QUICK REFERENCE GUIDE

GAS SERVICE	APPLICATION	STAGES	BODY	DIAPHRAGMS	SEATS/SEALS	SERIES	PAGE
Non Corrosive	General Purpose	1	Brass	Neoprene	Neoprene	150	184
		1	Brass	Stainless Steel	Neoprene/Nylon	100	179
		2	Brass	Stainless Steel/Neoprene	Neoprene/Nylon	158	182
		2	Brass	Stainless Steel	Neoprene/Nylon	120	179
	High Purity	2	Chrome-Plated Brass	Stainless Steel	PTFE Teflon®	420	180
		1	Chrome-Plated Brass	Stainless Steel	PTFE Teflon®	202	181
		1	Brass	316 L Stainless Steel	PCTFE & Teflon®	315	177
		2	Brass	316 L Stainless Steel	PCTFE & Teflon®	325	178
Mildly Corrosive	High Purity	1	Aluminum	316 L Stainless Steel	PTFE Teflon®	220	185
Corrosive	General Purpose	1	Nickel Plated Brass	Nickel Plated NiAg Alloy	Kel-F®/Kel-F® & Teflon®	210	186
	High Purity	1	316 L Stainless Steel	316 L Stainless Steel	PCTFE & Teflon®	300	175
		2	316 L Stainless Steel	316 L Stainless Steel	PCTFE & Teflon®	320	176
	Ultra High Purity	1	316 L Stainless Steel	316 L Stainless Steel	Kel-F®/Kel-F®	450	183
		2	316 L Stainless Steel	316 L Stainless Steel	Kel-F®/Kel-F®	452	183
Non Corrosive (High Pressure)	High Purity	Piston	Brass	316 Stainless Steel Piston	Kel-F®/Kel-F®	145	188
		Piston	Brass	303 Stainless Steel Piston	Kel-F®/Kel-F®	360	187
		Piston	Stainless Steel	303 Stainless Steel Piston	Kel-F®/Kel-F®	360	187

SPECIALTY PURPOSE REGULATOR SELECTION CHART

GAS SERVICE	APPLICATION	STAGES	BODY	DIAPHRAGMS	SEATS/SEALS	SERIES	PAGE
Non Corrosive	High Flow Line Regulator	1	Brass	316 L Stainless Steel	PCTFE & Teflon®	250B	177
	Low Flow Line Regulator	1	Brass	Stainless Steel	Viton®/Kel-F®, Viton®	270	181
	Low Pressure Line Regulator	1	Zinc	Buna-N	Neoprene	170	189
	Medical Gas	1	Brass	Rubber	Nylon	700	193
		2	Brass	Stainless Steel/Neoprene	Teflon®/Neoprene	720	193
	Lecture Bottle	1	Brass	Neoprene	Polyurethane/Nylon	900	190
	Regulator/ Flowmeter Combinations	1	Brass	Neoprene	Neoprene/Nylon	152	187
		2	Brass	Stainless Steel/Neoprene	Neoprene/Nylon	152	187
	CaliBlend™ Cylinder Regulators	See Page 191, 192					
Corrosive	High Flow Line Regulator	1	316 L Stainless Steel	316 L Stainless Steel	PCTFE & Teflon®	250S	175
	Lecture Bottle Regulators	1	316 Stainless Steel	316 Stainless Steel	Teflon®/Kel-F®	960	189

SERIES S300 - HIGH PURITY - STAINLESS STEEL - SINGLE STAGE REGULATOR

The 300 Series is a high purity single stage regulator that can be used where a slight pressure rise is acceptable upon decrease in cylinder pressure. Recommended for high purity, flammable, and corrosive gases, where the delivery pressure can be monitored.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S300-1	0 to 15 PSIG	-30-0-30 PSIG	0-4000 PSIG
S300-2	0 - 100 PSIG	-30-0-200 PSIG	0-4000 PSIG
S300-3	0 - 250 PSIG	0-400 PSIG	0-4000 PSIG
S300-4	0 - 500 PSIG	0-1000 PSIG	0-4000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Body: 316L SS construction	Corrosion resistant
Front & rear panel mountable	Easy installation
Diaphragm seal outlet valve	Maintains gas purity

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Ports	1/4" NPTF
Flow coefficient	Cv=.135
Helium leak integrity	1 x 10-9
Gauges	2"

MATERIALS

Body: 316L SS barstock	Bonnet: Chromed brass
Seats/Seals: PCTFE & Teflon®	Filter: 10 micron 316L SS
Diaphragm: 316L SS	Gauges: 316L SS

OPTIONS

		PAGE
Regulator brackets	S1, PL	208, 207
Tee purge	S502-S	269
Relief valve	S530 ?	274
Captured vent	S300-CV	
Panel mount (front)	S300-PMF	
Panel mount (rear)	S300-PMR	
Fittings		275, 276

SERIES S250-S - HIGH PURITY - STAINLESS STEEL - LINE REGULATOR

The Series 250-S is a secondary regulator used to provide exacting point of use control of high purity, inert, flammable and corrosive gases. It can be used on supply lines from bulk sources or in combination with a single stage regulator to eliminate pressure rise due to supply pressure effect.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGE
S250S-1	0 to 15 PSIG	-30-0-30 PSIG
S250S-2	0 - 100 PSIG	-30-0-200 PSIG
S250S-3	0 - 250 PSIG	0-400 PSIG
S250S-4	0 - 500 PSIG	0-1000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
316L SS barstock body	Corrosion resistant
Front and rear panel mountable	Easy installation

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Body ports	1/4" NPTF
Flow coefficient	Cv=.135
Gauges	2"

MATERIALS

Body	316L SS barstock
Bonnet	Chromed brass
Seats/Seals	PCTFE & Teflon®
Filter	10 micron 316L SS
Diaphragm	316L SS

OPTIONS

		PAGE
Panel mount (front)	S300-PMF	
Panel mount (rear)	S300-PMR	
Outlet check valve	S-44S	274
Captured vent	S300-CV	
Tee purge	S502-S	269
Diaphragm valves		247
Fittings		275, 276
Relief valve	S530	274

SERIES S320 - HIGH PURITY - STAINLESS STEEL - TWO STAGE REGULATOR

The 320 Series is a high purity, two stage regulator designed for corrosive and non-corrosive, high purity gas services, which require extremely precise delivery pressure control, regardless of inlet pressure variations. The Series 320 design is an excellent performer in gas services where purity is of the utmost concern. The barstock body and stainless steel construction ensures a long service life.

TYPICAL APPLICATIONS

EPA protocol gases
Petrochemical industry
High-purity carrier gases
Purge gases
Zero, span, and calibration gases
Gas and liquid chromatography
(FID, GC, HID, PID, FPD, TCD, ECD, etc…)
Mass spectrometers
Semiconductor process gases
Laboratory analysis
Research systems

FEATURES	BENEFITS
316L SS construction	Corrosion resistant
Threaded bonnet for panel mounting	Easy installation
Six ported configuration	Allows for relief valves
316L SS diaphragms	Eliminates "off gassing"
Diaphragm sealed outlet valve	Maintains gas purity
Pressure ranges 0-500 PSI	Wide range of applications

SPECIFICATIONS

Inlet pressure	3000 PSI
Temperature range	-40° F to 140°F
Ports	1/4" NPTF
Flow coefficient	Cv=.111
Helium leak integrity	1 x 10-9
Gauges	2"

MATERIALS

Body	316L SS barstock
Bonnet	Chromed brass barstock
Seats/Seals	PCTFE & Teflon®
Filter	10 micron 316L SS
Diaphragms	316L SS
Gauges	316L SS

OPTIONS		PAGE
Captured vent	S300-CV	
Panel mount (front)	S300-PMF	
Regulator brackets	PL, S1	207, 208
Relief valve	S300-RVS	
Tee purge	S502-S	269

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S320-1	0 to 15 PSIG	-30-0-30 PSIG	0-4000 PSIG
S320-2	0 - 100 PSIG	-30-0-200 PSIG	0-4000 PSIG
S320-3	0 - 250 PSIG	0-400 PSIG	0-4000 PSIG
S320-4	0 - 500 PSIG	0-1000 PSIG	0-4000 PSIG

SERIES S315 - HIGH PURITY - BRASS BARSTOCK - SINGLE STAGE REGULATOR

The 315 Series regulator is designed for use with non-corrosive high purity gases. Like the 325 series the barstock body and stainless steel diaphragms combine to make this an excellent instrument regulator. The Series 315 can be used in the same applications as a Series 325, where supply pressure effect is not a problem.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S315-1	0 to 15 PSIG	-30-0-30 PSIG	0-4000 PSIG
S315-2	0 - 100 PSIG	-30-0-200 PSIG	0-4000 PSIG
S315-3	0 - 250 PSIG	0-400 PSIG	0-4000 PSIG
S315-4	0 - 500 PSIG	0-1000 PSIG	0-4000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Front & rear mountable	Easy installation
Diaphragm seal outlet valve	Maintains gas purity
Six port configuration	Allows for relief valve

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Flow coefficient	Cv=.135
Ports	1/4" NPTF
Gauges	2 1/2"

MATERIALS

Body	High purity brass barstock
Diaphragm	316L SS
Seats/Seals	PCTFE & Teflon®
Bonnet	Chromed brass barstock
Filter	10 Micron Stainless Steel

OPTIONS

OPTIONS		PAGE
Captured vent	S300-CV	
Panel mount (front)	S300-PMF	
Panel mount (rear)	S300-PMR	
Relief valve	S530	274
Regulator brackets	S1, PL	208, 207
Fittings		275, 276

SERIES S250-B - HIGH PURITY - BRASS BARSTOCK - LINE REGULATOR

The Series S250-B is a secondary regulator used to provide exacting point of use control of high purity non-corrosive gases. It can be used on supply lines from bulk sources or in combination with a single stage regulator to eliminate pressure rise due to supply pressure effect.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGE
S250B-1	0 to 15 PSIG	-30-0-30 PSIG
S250B-2	0 - 100 PSIG	-30-0-200 PSIG
S250B-3	0 - 250 PSIG	0-400 PSIG
S250B-4	0 - 500 PSIG	0-1000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Brass barstock body	Quality surface finish
Front and rear mountable	Easy installation

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Flow coefficient	Cv=.135
Ports	1/4" NPTF
Gauges	2 1/2"

MATERIALS

Body	High purity brass barstock
Diaphragms	316L SS
Seats/Seals	PCTFE & Teflon®
Bonnet	Chromed brass barstock
Filter	10 Micron Stainless Steel
Adjusting knob	Machined aluminum

OPTIONS

OPTIONS		PAGE
Panel mount	S300-PMF	
Outlet check valve	S-44B	274
Captured vent	S300-CV	
Tee purge	S502-B	269
Tube fittings		275
Diaphragm Valves		247
Fittings		275, 276

SERIES S325 - HIGH PURITY - BRASS BARSTOCK - TWO STAGE REGULATOR

The Series 325 regulator is a high purity two stage regulator designed for non-corrosive gas service. It will provide extremely precise delivery control and long service life. The barstock body and two stainless steel diaphragms combine to minimize dead space and eliminate inboard diffusion of unwanted contaminants for analytical applications.

TYPICAL APPLICATIONS

High purity carrier gases
Calibration gases
GC applications
Petro/Chemical
FID
TCD
HID
ECD
Non corrosive gas mixtures for analytical instrumentation
EPA protocol gases
Mass spectrometers

FEATURES	BENEFITS
High purity brass barstock	Quality surface finish
Threaded bonnet for panel mounting	Easy installation
Six port configuration	Allows for relief valve
316 L SS diaphragms	Eliminates "off gassing"
Diaphragm sealed outlet valve	Maintains gas purity
Pressure ranges 0-500 psi	Wide range of applications

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Ports	1/4" NPTF
Flow coefficient	Cv=.111
Helium leak integrity	1 x 10-9
Gauges	2 1/2"

MATERIALS

Body	High purity brass barstock
Bonnet	Chromed brass barstock
Seats/Seals	PCTFE & Teflon®
Filter	10 micron 316L SS
Diaphragms	316L SS
Gauges	Polished brass/Bourdon

OPTIONS		PAGE
Captured vent	S300-CV	
Panel mount (front)	S300-PMF	
Relief valve	S530	274
Regulator bracket	S1, PL	208, 207
Fittings		275, 276

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S325-1	0 to 15 PSIG	-30-0-30 PSIG	0-4000 PSIG
S325-2	0 - 100 PSIG	-30-0-200 PSIG	0-4000 PSIG
S325-3	0 - 250 PSIG	0-400 PSIG	0-4000 PSIG
S325-4	0 - 500 PSIG	0-1000 PSIG	0-4000 PSIG

SERIES S120 - GENERAL PURPOSE - BRASS - HIGH FLOW TWO STAGE REGULATOR

The Series S120 is an economical instrument regulator, for use where precise pressure control is required. It is recommended for non-corrosive gases, for general plant and laboratory applications.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S120-1	2 to 15 PSIG	0-30 PSIG	4000 PSIG
S120-2	4 - 80 PSIG	0-100 PSIG	4000 PSIG
S120-3	5 - 125 PSIG	0-200 PSIG	4000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Preset safety relief valve	Prevents pressure buildup in 2nd stage
Large diaphragms	Provides precise control
Needle valve	Controls gas flow

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	0° F to 140°F
Flow coefficient	Cv=0.08
Body ports	1/4" NPTF
Gauges	2 1/2"

MATERIALS

Body	Forged brass
Diaphragms	316L SS
Seats/Seals	Neoprene/Nylon
Bonnet	Chrome plated forged brass
Needle valve	Forged brass

OPTIONS

		PAGE
Regulator bracket	S1	208
Tube fittings		275, 276
Check valves	S44B	274

SERIES S100 - GENERAL PURPOSE - FORGED BRASS - SINGLE STAGE REGULATOR

The Series S100 is an economical single stage regulator with high flow capabilities. It can be used for the same applications as a model S100 where a slight variation in delivery pressure can be tolerated.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S100-1	2 to 15 PSIG	0-30 PSIG	0-4000 PSIG
S100-2	4 - 80 PSIG	0-100 PSIG	0-4000 PSIG
S100-3	5 - 125 PSIG	0-200 PSIG	0-4000 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Preset safety relief valve	Prevents pressure buildup
2 1/4" Stainless steel diaphragm	Sensitive pressure control
Needle valve	Controls gas flow

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	0° F to 140°F
Flow coefficient	Cv=.05
Body ports	1/4" NPTF

MATERIALS

Body	Forged brass
Diaphragm	Stainless steel
Seats/Seals	Neoprene/Nylon
Bonnet	Chrome plated forged brass

OPTIONS

		PAGE
Regulator bracket	S1	208
Tube fittings		275, 276
Check valves	S44B	274

SERIES S420 - HIGH PURITY- BRASS - TWO STAGE REGULATOR

The Series S420 is a two stage high purity regulator designed for non-corrosive gas services. It offers extremely precise delivery control, and has been designed for years of trouble free service. Stainless steel diaphragms prevent inboard diffusion into the gas stream, making the Model S420 an excellent choice for your laboratory instrumentation.

TYPICAL APPLICATIONS

Gas chromatography
Mass spectrometers
Instrument calibration
Process stream applications
Fuel gases
Flushing systems
Calibration gases
Purging systems
Carrier gases
Sampling gases
"BTU" analyzers
Non corrosive gas mixtures for analytical instrumentation

FEATURES	BENEFITS
Forged brass body	Chrome plated for system appearance
316L SS diaphragms	Eliminates "off gassing"
Diaphragm sealed outlet valve	Maintains gas purity
Large diaphragms	Provides precise delivery
Pressure ranges	Wide range of applications

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	0° F to 140°F
Body ports	1/4" NPTF
Flow coefficient	Cv=0.04
Helium leak integrity	2 x 10-6
Gauges	2 1/2"

MATERIALS

Body	Chrome plated forged brass
Bonnet	Chrome plated forged brass
Seats/Seals	1st stage Kel-F® 2nd stage Viton®
Diaphragms	316L SS
Filter	10 Micron

OPTIONS	PAGE
1/8" Tube fitting (outlet)	275
1/4" Tube fitting (outlet)	275
Regulator bracket	208
Check valves	274

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S420-1	0 to 15 PSIG	-30-0-30 PSIG	4000 PSIG
S420-2	0 - 40 PSIG	0-60 PSIG	4000 PSIG
S420-3	0 - 120 PSIG	0-200 PSIG	4000 PSIG

SERIES S270 - FORGED BRASS - LOW PRESSURE LINE REGULATOR

The Series 270 is a secondary line regulator used to provide an exacting point of use control, of low pressure, non-corrosive gases.

PRODUCT CODE	DELIVERY PRESSURE RANGES	DELIVERY PRESSURE GAUGE
S270-1	2 to 15 PSIG	0-30 PSIG
S270-2	4 - 80 PSIG	0-100 PSIG
S270-3	5 - 125 PSIG	0-200 PSIG

TYPICAL APPLICATIONS

Recommended for inert and non-corrosive low pressure gas applications, where diffusion resistance is required.

FEATURES	BENEFITS
Large SS diaphragm	Sensitive pressure control
Forged brass body	Economical design
Pressure ranges	Wide range of applications

SPECIFICATIONS

Maximum inlet pressure	Cv=.33
Temperature range	350 PSIG
Body ports	0˚F to 140˚F
Gauge	1/4" NPTF
	2 1/2" compression

MATERIALS

Body	Chrome plated forged brass
Bonnet	Chrome plated forged brass
Diaphragm	316L SS

OPTIONS		PAGE
Tube fittings		275, 276
Panel mount	S270PMR	
Diaphragm valves		247

SERIES S202 - HIGH PURITY - HYDROCARBON - CHROME PLATED BRASS SINGLE STAGE "BTU" REGULATOR

The Series S202 regulator has been specifically designed for low pressure calibration standards. It is highly recommended for use on "BTU" analyzers.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S202-1	0 to 15 PSIG	0-30 PSIG	0-400 PSIG
S202-2	0 - 30 PSIG	0-60 PSIG	0-400 PSIG
S202-3	0 - 60 PSIG	0-100 PSIG	0-400 PSIG

FEATURES	BENEFITS
Chrome-plated forged brass body	Economical quality finish, long life
Diaphragm sealed outlet valve	Maintains system purity
Standard relief valve	Diaphragm and gauge protection

SPECIFICATIONS

Inlet pressure	350 PSIG
Temperature range	-40° F to 140°F
Flow coefficient	Cv=0.05
Body ports	1/4" NPTF
Gauges	2 1/2"

MATERIALS

Body	Chrome plated forged brass
Bonnet	Chromed plated forged brass
Seats/Seals	Kel-F®
Diaphragms	316 L SS
Filter	10 micron SS

OPTIONS		PAGE
Regulator bracket	S1, PL	208, 207
Tube fittings		275, 276

SERIES S158 - GENERAL PURPOSE - FORGED BRASS - TWO STAGE REGULATOR

The Series S158 is not intended for precise analytical work. It is a low cost general purpose regulator recommended for non-corrosive gases. It can be used where inboard diffusion and slight "out gassing" of elastomeric compounds can be tolerated.

FEATURES	BENEFITS
Preset safety relief valve	Prevents pressure buildup in 2nd stage
Needle valve	Controls gas flow
Large diaphragm	Sensitive pressure control

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	140°F
Flow coefficient	Cv=0.08
Body ports	1/4" NPTF
Gauges	2 1/2"

MATERIALS

Body	Forged brass
Diaphragms	Nylon reinforced neoprene
Seats/Seals	Neoprene/Nylon
Bonnet	Chrome plated brass
Needle valve	Forged brass

OPTIONS		PAGE
Regulator bracket	S1	208
Tube fittings		275, 276
Check valves		274

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S158-1	0 to 50 PSIG	0-60 PSIG	0-4000 PSIG
S158-2	0 - 100 PSIG	0-200 PSIG	0-4000 PSIG
S158-3	0 - 250 PSIG	0-400 PSIG	0-4000 PSIG

SERIES S452 - ULTRA HIGH PURITY - STAINLESS STEEL TWO STAGE REGULATOR

The S452 Series UHP process gas regulator is designed to be used with ultra high purity corrosive gases. It is free of internal threads that can trap impurities. The Series S452 is ideal for use with ultra high purity electronic grade corrosive gases, where precise and demanding pressure control is required.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S452-1	0 to 15 PSIG	0-30 PSIG	0-4000 PSIG
S452-2	0 - 60 PSIG	-30-0-100 PSIG	0-4000 PSIG

FEATURES
- Low internal volume
- Stainless steel construction
- Diaphragm sealed outlet valve

BENEFITS
- Facilitates purging
- Proven service life
- Maintains system purity

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40°F to140°F
Flow coefficient	Cv=0.04
Body ports	1/4" NPTF
Surface finish	15 Ra
Gauges	2"

MATERIALS

Body: 316L SS barstock	Diaphragms: 316L SS (tied)
Seats/Seals: Kel-F®	Bonnet: Nickel plated brass
Filter: 10 micron 316L SS	Gauges: 316L SS

OPTIONS
- Cross purges
- Surfaces
- *Welded VCR®
- *10 Ra; 5 Ra finish
- Panel Mount
- *Contact nearest GTS location

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269

SERIES S450 - ULTRA HIGH PURITY - STAINLESS STEEL SINGLE STAGE REGULATOR

The Series S450 UHP process gas regulator is designed to be used with ultra high purity corrosive gases. It is ideal for use with ultra high purity corrosive electronic grade gases, where slight variations in delivery pressure can be tolerated.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S450-1	0 to 15 PSIG	-30-0-30 PSIG	4000 PSIG
S450-2	0 - 60 PSIG	-30-0-100 PSIG	4000 PSIG

FEATURES
- Low internal volume
- Stainless steel construction
- Diaphragm sealed outlet valve

BENEFITS
- Facilitates purging
- Proven service life
- Maintains system purity

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-40° F to 140°F
Flow coefficient	Cv=0.04
Body ports	1/4" NPTF
Surface finish	15 Ra
Gauges	2"

MATERIALS

Body	316 L SS barstock
Diaphragm	316 L SS
Seats/Seals	Kel-F®
Bonnet	Nickel plated brass
Filter	10 micron SS
Gauges	316 L SS

OPTIONS
- Cross purges
- Surfaces
- *Welded VCR®
- *10 Ra; 5 Ra finish
- Panel Mount
- *Contact nearest GTS location

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269

SERIES S150 - GENERAL PURPOSE - ACETYLENE REGULATOR - FORGED BRASS SINGLE STAGE REGULATOR

The 150 Series is designed for use with acetylene, carbon dioxide and liquefied hydrocarbons.

Caution: do not discharge acetylene at pressures greater than 15 PSIG.

SPECIFICATIONS

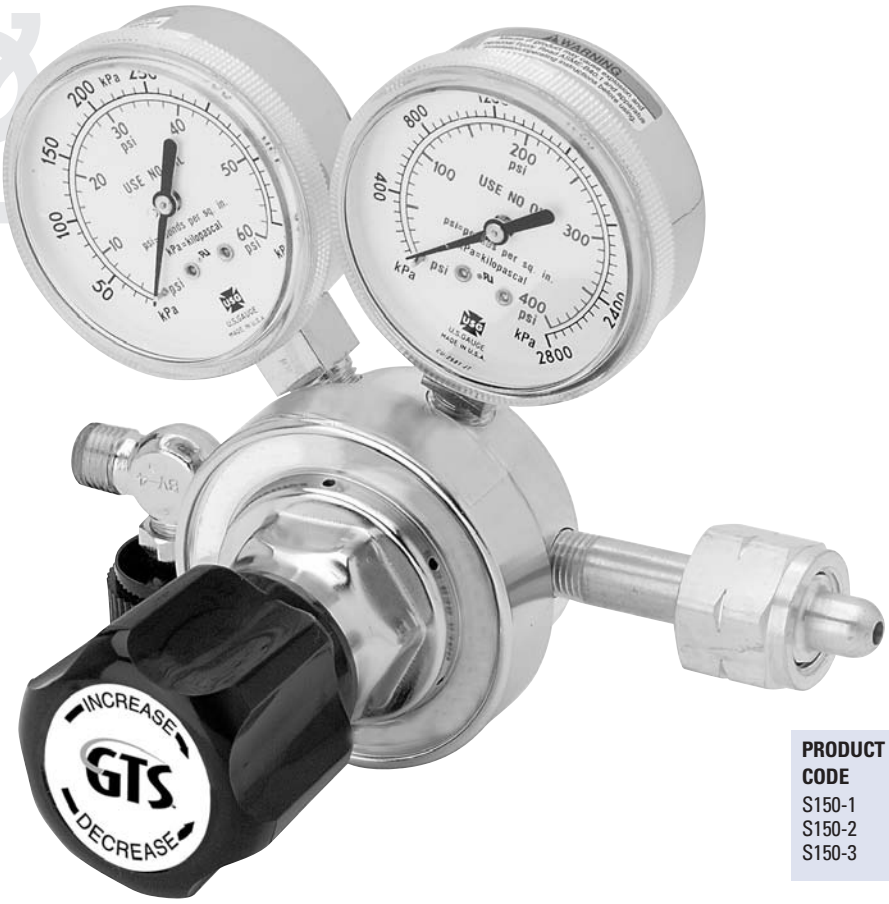
Inlet pressure	3000 PSIG
Temperature range	-20°F to 140°F
Flow coefficient	Cv=0.18
Body ports	1/4" NPTF
Outlet pressure rise	< .85 PSI/100 PSI decay
Gauges	2 1/2"

MATERIALS

Body	Forged brass
Diaphragms	Neoprene
Seats/Seals	Neoprene
Inlet filter	Sintered bronze
Outlet	Forged brass needle valve

OPTIONS

OPTIONS	PAGE
Tube fittings	275, 276
Regulator bracket	208



PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S150-1	0 to 15 PSIG	0-30 PSIG	0-400 PSIG
S150-2	0 - 50 PSIG	0-60 PSIG	0-400 PSIG
S150-3	0 - 100 PSIG	0-200 PSIG	0-4000 PSIG

SERIES S300-4VCR STAGE REGULATOR

The Series S300-4VCR process gas regulator has been designed for use in semiconductor manufacturing. It is highly recommended for use with toxic, corrosive and pyrophoric gases.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S300-VCR®-1	0 to 30 PSIG	0-4000 PSIG	-30-0-60 PSIG
S300-VCR®-2	0 - 100 PSIG	0-4000 PSIG	-30-0-200 PSIG

FEATURES / BENEFITS

FEATURES	BENEFITS
Butt welded connections	Maintain purity
Vented bonnet	

SPECIFICATIONS

Inlet pressure	3000 PSI
Temperature range	-40-140°F
Flow coefficient	Cv=0.04
Body ports	VCR®
Surface finish	10 Ra.
Gauges	2"

MATERIALS

Body	316L Stainless Steel
Diaphragms	316L Stainless Steel
Seats/Seals	Kel-F®/Teflon®
Bonnet	Chrome plated brass
Filter	10-Micron
Gauges	2" 316L Stainless Steel

Also available in 2 stage design.

SERIES S220 - SPECIAL PURPOSE - SINGLE STAGE REGULATOR

The 220 Series is ideally suited for mildly corrosive gases such as ammonia, hydrogen sulfide and amines.

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S220-1	0 to 15 PSIG	-30-0-30 PSIG	4000 PSIG
S220-2	0 - 100 PSIG	-30-0-200 PSIG	4000 PSIG
S220-3	0 - 250 PSIG	0-400 PSIG	4000 PSIG
S220-4	0 - 500 PSIG	0-1000 PSIG	4000 PSIG

SPECIFICATIONS

Inlet pressure	3000 PSI
Temperature range	0°F to 120°F
Body ports	1/4" NPTF
Flow coefficient:	CV = .10
Gauges	2"

MATERIALS

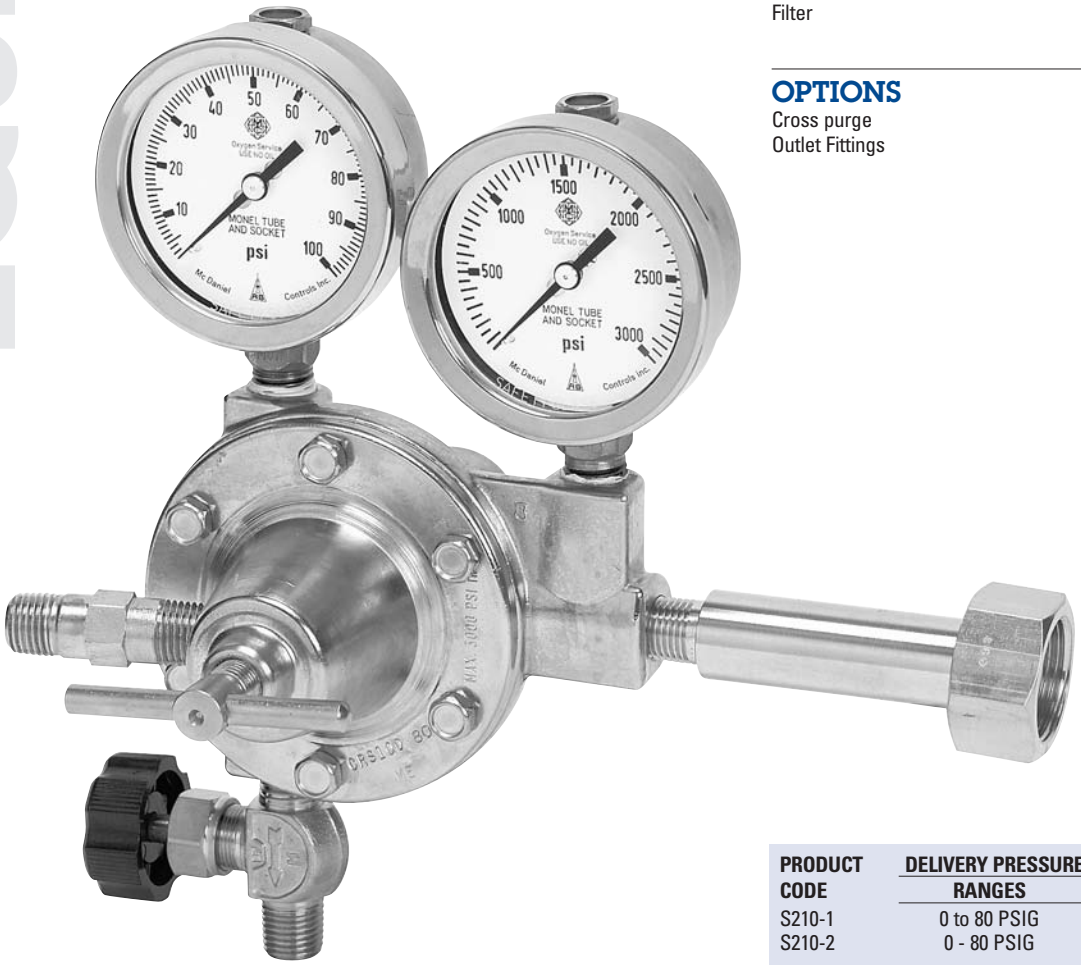
Body	Aluminum barstock
Diaphragm	316 L SS
Seat/Seals	Teflon®
Inlet Filter	10 Micron sintered bronze

OPTIONS / PAGE

OPTIONS		PAGE
Tee purge	S502-S	269
Panel mount (front)	S300-PMF	
Panel Mount (rear)	S300-PMR	
Captured vent	S300-CV	
Regulator brackets	214, 215	

SERIES S210 - CORROSIVE - SINGLE STAGE REGULATOR

The Series S210 corrosive gas regulator is designed for use with acid forming gases.



FEATURES

- Nickel plated forged brass body
- Four seats on a mountable block precision yoke interconnects the diaphragm and seat block

BENEFITS

- Durable long lasting construction
- Long service life
- Instant response to flow demands

SPECIFICATIONS

Inlet pressure	3000 PSIG
Temperature range	-20˚F - 160°F
Body ports	1/4" NPTF
Gauges	Monel®

MATERIALS

Body	Electroless nickel-plated brass
Diaphragms	302 Stainless Steel
Seats/Seals	Kel-F®/Teflon®
Nozzle	Monel®
Filter	Electroless nickel-plated sintered bronze

OPTIONS

	PAGE
Cross purge	269
Outlet Fittings	275, 276

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S210-1	0 to 80 PSIG	0-100 PSIG	0-1000 PSIG
S210-2	0 - 80 PSIG	0-100 PSIG	0-3000 PSIG

SERIES S360 - PISTON REGULATOR

The 360 Series is designed to reduce high pressures down to a usable level. The piston design is self relieving, which allows the user to reduce downstream pressure in a closed system by venting through the regulator. It also features a positive shut-off.

SPECIFICATIONS

Inlet pressure	See table
Temperature range	-40˚F to 165˚F
Body ports	1/4" NPTF
Maximum flow brass	3000 SCFH
Maximum flow SS	10,000 SCFH

MATERIALS

Body	Brass/SS
Pistons	303 SS
Seat/Seals	Kel-F®/Viton®
Filter	20-Micron, brass/SS

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S360-1*	0 to 500 PSIG	0-600 PSIG	7500 PSIG
S360-2*	25 - 4000 PSIG	0-5000 PSIG	7500 PSIG
S360-3**	25 - 4000 PSIG	0-5000 PSIG	10000 PSIG
S360-4**	60 - 6000 PSIG	0-10000 PSIG	10000 PSIG

*Brass
**Stainless Steel

SERIES S152 - SPECIAL PURPOSE - REGULATOR/FLOWMETER COMBINATION

The Series 152 Regulator Flowmeter is a combination of our Series 150 or 158 Regulator and a Series 65 Flowmeter. They permit convenient adjustment of both pressure and flow.

OPTIONS

	PAGE
Tube fitting	275, 276

PRODUCT CODE	FLOW RANGE SLPM (AIR)	SERIES 150	SERIES 158
S152-1	.05 to .5	√	
S152-2	0.2 - 2.0	√	
S152-3	0.5 - 6.0	√	
S152-4	1.0 - 10.0	√	
S152-5	2.0 - 25.0	√	
S152-12	.05 - .5		√
S152-11	0.2 - 2.0		√
S152-13	0.5 - 6.0		√
S152-14	1.0 - 10.0		√
S152-15	2.0 - 25.0		√

SERIES S145 - SPECIAL PURPOSE - PISTON REGULATOR

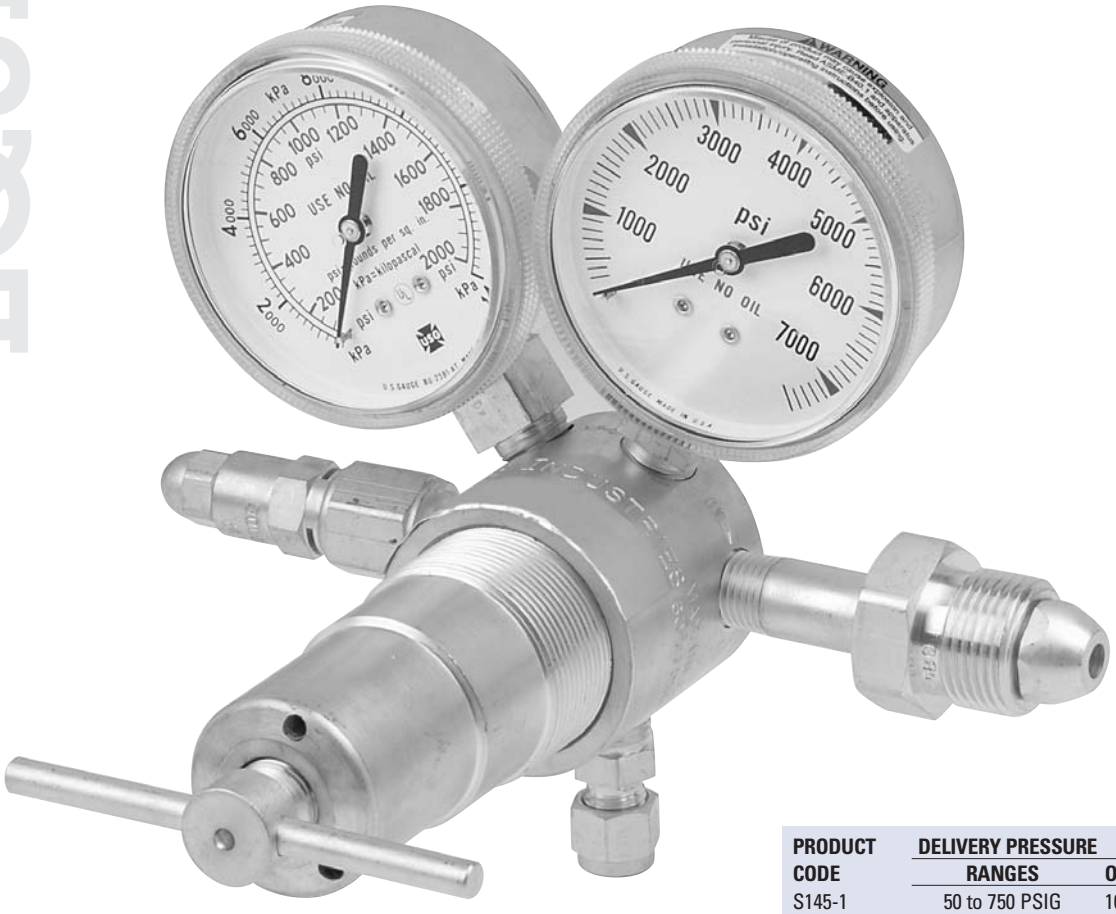
The 145 Series is designed for applications requiring inlet pressures up to 6000 PSI. the S145-1 and S145-2 are capped with self-reseating relief valves. The piston design requires little or no maintenance.

SPECIFICATIONS

Inlet pressure	6000 PSI
Temperature range	0˚F to 120˚F
Body ports	1/4" NPTF
Flow	22000 SCFH @ 4500 PSI 16000 SCFH @ 3000 PSI
Outlet	1/4" Tube fitting

MATERIALS

Body	Machined brass
Piston	Brass
Seat/Seals	Kel-F®
Inlet filter	Sintered bronze



PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S145-1	50 to 750 PSIG	1000 PSIG	7000 PSIG
S145-2	1000 - 1500 PSIG	2000 PSIG	7000 PSIG
S145-3	200 - 3000 PSIG	4000 PSIG	7000 PSIG
S145-4	300 - 4500 PSIG	6000 PSIG	7000 PSIG

SERIES S170 - LOW PRESSURE LINE REGULATOR

These regulators are designed to provide sensitive and accurate pressure control of non-corrosive gases at low pressure. The large rubber diaphragm delivers a steady flow at pressures below 10 PSIG. 2 1/2 inch delivery pressure gauge makes outlet pressure setting easy and accurate.

The pressure adjusting screw is protected by a plastic cap to prevent accidental changes of pressure setting.

PRODUCT CODE	DELIVERY PRESSURE RANGES	DELIVERY PRESSURE GAUGE
S170-1	0.5 to 8 PSIG	0-10 PSIG
S170-2	5 - 10 PSIG	0-15 PSIG

SPECIFICATIONS

Maximum inlet pressure	250 PSIG
Operating temperature	-40˚F to +160˚F
Maximum flow (air):	
S170-1	(360 CFH)
S170-2	(550 CFH)
Inlet & outlet connections	1/4" NPTM

MATERIALS

Body	Die cast zinc
Diaphragm	Buna-N
Seat/Seal	Neoprene
Nozzle	Brass
Gauge	2-1/2" chrome plated brass
Outlet	Brass needle valve

OPTIONS

		PAGE
Brass cylinder connection	CGA 510	
Brass check valve	S44-B	274

SERIES S960 - STAINLESS STEEL - LECTURE BOTTLE REGULATOR

The Series 960 is a compact, lightweight, all stainless steel lecture bottle regulator suitable for corrosive gases. It is designed to withstand vacuum purging and incorporates a vented bonnet to facilitate safe venting.

PRODUCT CODE	DELIVERY PRESSURE RANGES	DELIVERY PRESSURE GAUGE	CYLINDER PRESSURE GAUGE
S960-1	0 to 25 PSIG	-30-0-30 PSIG	0-4000 PSIG
S960-2	0 - 50 PSIG	-30-0-100 PSIG	0-4000 PSIG

SPECIFICATIONS

Body	Barstock 316 SS
Diaphragm	316 SS
Seats/Seals	Teflon® and Kel-F®
Gauge	1 1/2" 316 SS
Inlet	CGA-110
Outlet	SS 1/8" NPTM needle valve
Ports	1/8" NPTF (3)

MATERIALS

Body	316 Stainless Steel
Spring housing cap	Nickel-plated brass
Diaphragm	316 Stainless Steel
Nozzle	316 Stainless Steel
Seat	Kel-F®
Seals	Teflon® and Kel-F®
Poppet	316 Stainless Steel
Filter	10 Micron sintered Stainless Steel
Seat return spring	316 Stainless Steel
Pressure adjusting spring	Music wire
Adjusting knob	Glass filled polypropylene
Gauges	316 Stainless Steel

OPTIONS

	PAGE
Check valve	274
Fittings	275, 276

SERIES S900 - NONCORROSIVE LECTURE BOTTLE REGULATOR

The Series 900 is a lightweight, compact regulator for use with non-corrosive gases. It has a brass body, neoprene diaphragm, polyurethane seat, and nylon seals. It is equipped with a self reseating relief valve on the diaphragm, and a brass needle valve on the outlet.

FEATURES

1-1/4" Diaphragm
1-1/2" Chrome plated gauges
Stem type seat assembly
Self reseating type relief valve in diaphragm (not designed to protect downstream apparatus)

SPECIFICATIONS

Maximum inlet pressure	3000 PSIG
Operating temperature	0˚F to 140˚F
Gauges	1 1/2" Brass
Ports	1/8" NPTF
Valve outlet	1/8" NPTM
Shipping weight	2 lbs.
Inlet	CGA 170 (CGA 180 optional)

MATERIALS

Body	Chrome plated brass
Spring housing cap	Chrome plated brass
Diaphragm	Neoprene
Nozzle	Brass
Seat	Nylon
Seals	Nylon
Poppet	Brass
Filter	50 Micron sintered bronze
Seat return spring	Stainless Steel
Pressure adjusting spring	Wire
Adjusting knob	ABS plastic77

OPTIONS

PAGE

Tube fittings 275, 276

PRODUCT CODE	DELIVERY PRESSURE RANGES	DELIVERY PRESSURE GAUGE	CYLINDER PRESSURE GAUGE
S900-1	0 to 15 PSIG	0-30 PSIG	0-4000 PSIG
S900-2	0 - 60 PSIG	0-100 PSIG	0-4000 PSIG

SERIES DR-4 & DR-4S - HIGH PURITY - FIXED FLOW REGULATOR

The Model DR4 is a flow regulator equipped with an orifice that determines the outlet flow rate in liters per minute. It is available with internal components in brass for non-corrosive gases or stainless steel for corrosive gases.

DR-4

DR-4S

SPECIFICATIONS

Maximum inlet pressure	1500 PSIG
Inlet connection	C-10 5/8" – 18 UNF
Outlet connection	3/16" Hose barb
Gauge	0-1500 PSIG
Available flow rates	0.5, 1.0, 1.5, 2.0, 2.5, 5.0, 6.0 lpm

PRODUCT CODE	MATERIAL	FLOW RATE
DR4-1	Brass	0.5 LPM
DR4-2	Brass	1.0
DR4-3	Brass	2.5
DR4-4	Brass	5.0
DR4-5	Brass	1.5
DR4-6	Brass	2.0
DR4-7	Brass	6.0
DR4S-.3	Stainless Steel	0.3
DR4S-1	Stainless Steel	1.0
DR4S-2	Stainless Steel	2.0

SERIES S-EC1 - VARIABLE FLOW REGULATOR

The Model S-EC1 is a flow regulator with an aluminum body and stainless steel internal components for mildly corrosive and non-corrosive applications. It is equipped with a variable flow control (0.5 to 5.0 lpm) and two gauges (a flow rate gauge and a cylinder pressure gauge).

SPECIFICATIONS

Maximum inlet pressure	3000 PSIG
Inlet connection	CGA-180
Outlet connection	1/4" Hose barb
Gauge	0-3000 PSIG
Available flow rates	0.5 to 5.0 lpm

OPTIONS

	PAGE
Fittings	275, 276

PRODUCT CODE	DELIVERY PRESSURE RANGES	GAUGES OUTLET	GAUGES INLET
S-EC1	0 to 5 LPM	0-5 LPM	3000 PSIG

SERIES S190B & S190S - HIGH PURITY - GRADUATED FIXED FLOW REGULATOR

The Model S190 is a 10-position flow regulator with an aluminum body and a cylinder pressure-indicating gauge. The first position is OFF and the remaining 9 positions are increasing, graduated flow rates from 0.3 LPM to 8.0 LPM. It is available with internal components in brass for non-corrosive gases or stainless steel for corrosive gases.

SPECIFICATIONS

Maximum inlet pressure	3000 PSIG
Inlet connection	CGA-180
Outlet connection	3/16" Hose barb
Gauge	0-3000 PSIG
Available flow rates	0.3, 0.5, 1.0, 1.5, 2.0, 2.5, 5.0, 6.0, 8.0 LPM

S190B-180
(Brass)

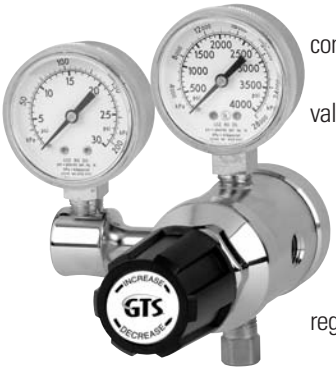
S190S-180
(Stainless Steel)

Shown with S-ECI

PRODUCT CODE	MATERIAL	FLOW RATES	GAUGES INLET
S190B	Brass	0.2 LPM to 6 LPM	3000 PSIG
S190B-180	Brass	0.5 LPM to 8 LPM	3000 PSIG
S190S-180	Stainless Steel	0.5 LPM to 8 LPM	3000 PSIG

SERIES S720 - MEDICAL BLOOD GAS REGULATOR

Modern Blood Gas Analyzers require extremely precise pressure and flow control. The Model 720 two stage regulator is designed to provide this. It is available with either pin-indexed or yoke connections for E cylinders, or the CGA 500 connection for larger cylinders. An optional metering valve can be installed on the outlet port for precise flow control. These regulators comply with FDA standards for medical gas regulators. These regulators can also be used with other medical gases and mixtures such as medical laser mixtures.



SPECIFICATIONS

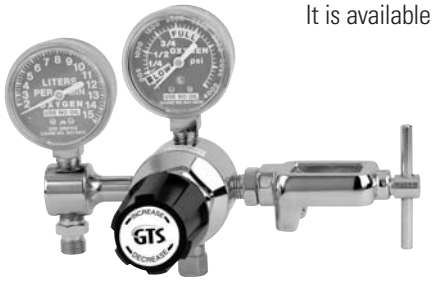
Maximum inlet pressure	3000 PSIG
Body	Chrome plated brass
Seat	Tefzel®
Seals	Neoprene
Diaphragms	SS/Neoprene
Outlet	1/8" male NPT

PRODUCT CODE	DELIVERY PRESSURE RANGES	DELIVERY PRESSURE GAUGE	CYLINDER PRESSURE GAUGE
S720-1	0 to 15 PSIG	0-30 PSIG	0-4000 PSIG
S720-2	0 - 75 PSIG	0-200 PSIG	0-4000 PSIG

*Please specify CGA when ordering

SERIES S700 - MEDICAL REGULATOR

This regulator is machined from high quality brass to provide long service life and then chrome plated to enhance appearance and sanitation. It features a built in safety relief valve, exceptional pressure stability and uniform gas flow. It is available with pin-indexed, which permit a quick and complete gas tight seal without the use of a wrench.



SPECIFICATIONS

Maximum inlet pressure	3000 PSIG
Body	Chrome plated brass
Seat	Tefzel®
Seals	Neoprene
Diaphragms	SS/Neoprene
Outlet	1/8" male NPT

PRODUCT CODE	DELIVERY PRESSURE GAUGE	CYLINDER PRESSURE GAUGE
S700-1	0 to 15 PSIG	0-3000 PSIG
S700-2	0 - 15 LPM	0-3000 PSIG