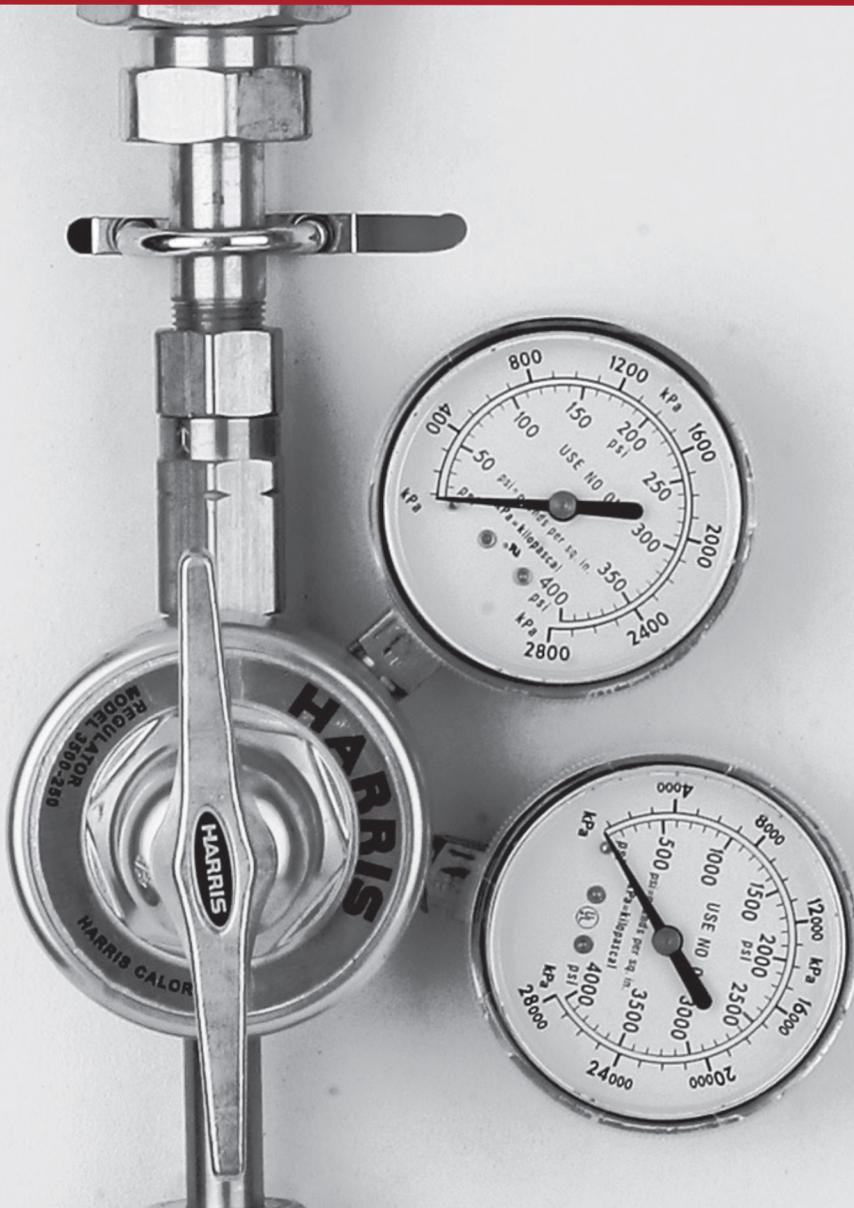


A LINCOLN ELECTRIC COMPANY

GAS DISTRIBUTION SYSTEMS

MANIFOLDS FOR INDUSTRIAL, SPECIALTY GAS, MEDICAL & ACCESSORIES



INDUSTRIAL MANIFOLDS

Manifold selection guide is exclusively on www.harrisproductsgroup.com

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MEDICAL MANIFOLDS

State-Of-The-Art manufacturing of high quality products.

MSA 900 Semi Automatic Switchover	60, 61
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OTHER ACCESSORIES

Quality products you can count on.

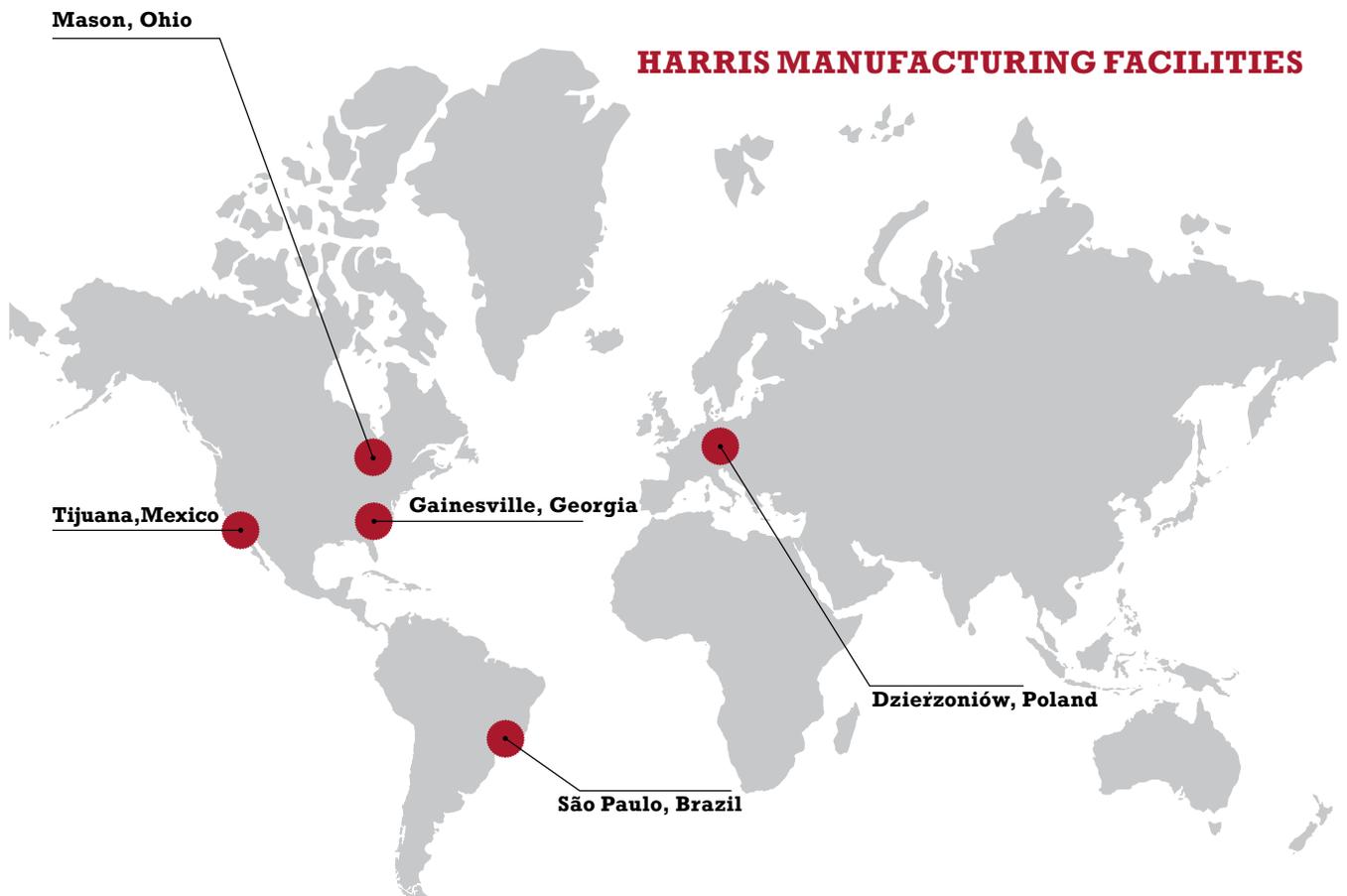
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The Harris Products Group was formed by combining two strong names in the gas apparatus business—Harris Calorific and J.W. Harris. The Harris Products Group is a world leader in metalworking products used in brazing, soldering, welding, cutting and gas distribution industries. The combined company offers excellence in the manufacture of:

THE HARRIS PRODUCTS GROUP

- Gas welding and cutting equipment
- Brazing and soldering alloys
- Industrial and specialty gas regulation equipment
- Welding alloys
- Gas distribution systems
- Pre-formed bends, rings and return bends

The Harris Products Group is a wholly-owned subsidiary of The Lincoln Electric Company. Lincoln has 45 manufacturing locations, including operations and joint ventures in 20 countries and a worldwide network of distributors and sales offices covering more than 160 countries.



Gas Distribution Systems

MANIFOLD SELECTOR PROGRAM

The Harris Manifold selector program is available exclusively on The Harris Products Group website (www.harrisproductsgroup.com). This convenient program allows the user to quickly and easily specify and choose manifolds and pipeline accessories for virtually any gas distribution system. Multiple system features can be specified by simply choosing from the various options available. The program allows for multiple systems and components to be specified and it then compiles all selections in a list that can be emailed to the Harris Customer Service Department for a quote.

The program features graphic user controls and inputs. It also includes links to informative articles on common terminology and function. The part number is developed by selecting on the desired features, such as gas purity, number of cylinders and accessories.

<u>Model</u>	<u>Description</u>
Series 210	Pressure Differential Switchover
Series 220	Pressure Differential Switchover
Series 240	Liquid Cylinder Gas Manifold

Follow these simple steps:

Go to: apps.harrisproductsgroup.com/manifoild

Step 1 - Choose gas purity (industrial, medical, etc.)

Step 5 - Review and edit selection

Step 2 - Select from the appropriate models given

Step 6 - Add to quotation page that can be emailed directly to Harris Customer Service

Step 3 - Select the number of cylinders

Step 4 - Select gas service

Selector Main Menu **Quotation List**

SERIES 220 ORDERING INFORMATION

220

PRESSURE DIFFERENTIAL SWITCHOVER

Click on appropriate gray boxes to make selections or add features

SERIES	TYPE	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
220	<input type="text"/> (-) HL HP - = 30-125 PSI HL = for CO ₂ , N ₂ O HP = 100-190 PSI *** Acetylene systems include pigtails w/ flashback arrestor and check valves.	<input type="text"/> 24" Pigtails 1R 2R 3R 4R 36" Pigtails 1R36 2R36 3R36 4R36	<input type="text"/> 24" Pigtails 1L 2L 3L 4L 36" Pigtails 1L36 2L36 3L36 4L36	<input type="text"/> CGA 300 - Acetylene CGA 320 - Carbon Dioxide CGA 326 - Nitrous Oxide CGA 346 - Breathing Air CGA 350 - Methane CGA 350H - Hydrogen CGA 510 - Propane / LPG / Fuel Gases CGA 510A - Acetylene CGA 540 - Oxygen CGA 580 - Argon / Nitrogen CGA 580H - Helium CGA 590 - Industrial Air



Gas Distribution Systems

GAS DELIVERY SYSTEMS

When gases are used in significant volumes, a centralized gas delivery system is a practical necessity. A well-conceived delivery system will reduce operating costs, increase productivity and enhance safety.

A centralized system will allow the consolidation of all cylinders into one storage location. With all the cylinders in one place, inventory control will be streamlined and cylinder handling will be simplified and improved. Gases can be separated by type to enhance safety.

The frequency of cylinder changeouts is reduced in a centralized system. It is achieved by connecting multiple cylinders to manifolds in banks in such a way that one bank can be safely vented, replenished and purged while a second bank provides continuous gas service. This type manifold system can supply gas to multiple applications and even entire facilities, eliminating the need for separate cylinders and regulators for each point of use.

Since cylinder switchover can be accomplished automatically by the manifold, cylinders in a bank will be uniformly exhausted, resulting in improved gas utilization and lower costs. The integrity of the delivery system will be better protected since cylinder change-outs will be done in an isolated, controlled environment. The gas manifolds used in these systems should be equipped with check valves to prevent gas backflow and purge assemblies to eliminate contaminants from entering the system during change-out. Additionally, most gas delivery systems can be configured with alarms to indicate when a cylinder or bank of cylinders needs replacing.

Purity

The level of gas purity required at each point of use is extremely important in designing a gas delivery system. Maintaining the gas purity is simplified with a centralized system as described above. Selection of materials for construction should be consistent throughout. For example, if a research grade gas is being utilized, all stainless steel construction and diaphragm packless shut-off valves should be used to eliminate contamination of the gas stream.

In general, three levels of purity are sufficient to describe nearly any application.

The first level, usually described as a **MULTI-PURPOSE** application, has the least stringent purity requirement. Typical applications may include welding, cutting, laser assist, atomic absorption or ICP mass spectrometry. Manifolds for multi-purpose applications are economically designed for safety and convenience. Acceptable materials for construction include brass, copper, Teflon®, Tefzel® and Viton®. Packed valves, such as needle valves and ball valves, are often used for flow shut-off. Gas distribution systems manufactured to this level should not be used with high purity or ultra-high purity gases.

The second level, called **HIGH-PURITY** application, requires a higher level of protection against contamination. Applications include laser resonator gases or chromatography where capillary columns are used and system integrity is important. Materials of construction are similar to multi-purpose manifolds, except flow shut-off valves are diaphragm packless to prevent diffusion of contaminants into the gas stream.

The third level is referred to as **ULTRA-HIGH PURITY** application. This level requires the highest level of purity for components in a gas delivery system. Trace measurement in gas chromatography is an example of an ultra-high purity application. Wetted materials for manifolds at this level must be selected to minimize trace components adsorption. These materials include 316 Stainless Steel, Teflon®, Tefzel® and Viton®. All tubing should be 316SS cleaned and passivated. Flow shut-off valves must be diaphragm packless.

It is particularly important to recognize that components that are suitable for multi-purpose applications may adversely affect results in high or ultra-high purity applications. For example, out-gassing from neoprene diaphragms in regulators can cause excessive baseline drift and unresolved peaks.

Types of Gas Delivery Systems

SINGLE STATION SYSTEMS – In some applications, a gas is used only to calibrate instrumentation. For example, a continuous emissions monitoring system (CEMS) may only require calibration gases to flow for a few minutes each day. Such an application clearly does not require a large-scale automatic changeover manifold. However, the delivery system should be designed to protect against contamination of the calibration gas and to minimize costs associated with cylinder change-outs.

A single station manifold with bracket is an ideal solution for this type of application. It provides a safe and cost-effective means of connecting and changing out cylinders by eliminating the need to struggle with the regulator. When the gas includes corrosive components such as HCl or NO, a purge assembly should be incorporated into the manifold to allow the regulator to be purged with an inert gas (usually nitrogen) to protect it from corrosion. The single / station manifold can also be equipped with a second pigtail. This arrangement allows an additional cylinder to be connected and held in reserve. Switchover is accomplished manually using the cylinder shut-off valves. This configuration is usually desirable with calibration gases since the precise mix of components generally varies somewhat from cylinder to cylinder. A cylinder change may require resetting the instrument.

SEMI-AUTOMATIC SWITCHOVER SYSTEMS – Many applications require continuous use and/or larger volumes of gases beyond what is practical for a single station manifold. Any pause in the gas supply results in lost or ruined experiments, a loss of productivity and even downtime for an entire facility. Semi-automatic switchover systems provide the capability to switch from a primary to a reserve cylinder or bank without interrupting the gas supply, thus minimizing costly downtime. Once the primary cylinder or bank is depleted, the system automatically switches to the reserve cylinder or bank for continuous gas flow. The user then changes the empty cylinders for new cylinders, while the gas is still flowing from the reserve side. A bi-directional valve is used to indicate the primary or reserve side during cylinder change-out.

FULLY AUTOMATIC PROGRAMMABLE SWITCHOVER SYSTEMS – In some critical manufacturing and laboratory processes, an uninterrupted gas supply is an absolute necessity. Failure of the gas supply in these facilities can result in loss of a entire laboratory's in-process experiments or even shutdown of a manufacturing production line or process. The potential cost of either of these events is so high that the installation of a gas delivery system, designed to provide an uninterrupted gas supply, is clearly justified. A fully automatic programmable switchover system is generally selected for these applications.

Harris' fully automatic systems perform in a similar way to the semi automatic systems, but with additional features. These features include a programmable switchover pressure between the primary and reserve banks, automatic leak detection and output contacts for remote sensing and gas level detection.



MANIFOLD SELECTION GUIDE

INDUSTRIAL



MANIFOLD SERIES	PAGE NO.	SWITCHOVER METHOD			ALARM SYSTEM	
		PRESSURE DIFFERENTIAL	MANUAL	FULLY AUTOMATIC	LOCAL	REMOTE
200 Simplex	10	N/A	√	N/A	N/A	N/A
200 Duplex	10	N/A	√	N/A	N/A	N/A
210	12	√	N/A	N/A	N/A	N/A
220	14	√	N/A	N/A	√	OPT.
220HL w/ Heater	14	√	N/A	N/A	√	OPT.
220HP	14	√	N/A	N/A	√	OPT.
230	16	N/A	N/A	√	√	OPT.
230HL w/ Heater	16	N/A	N/A	√	√	OPT.
230HP	16	N/A	N/A	√	√	OPT.
240	18	√	N/A	N/A	√	OPT.
240HP	18	√	N/A	N/A	√	OPT.

SPECIALTY GAS/LASER



MANIFOLD SERIES	PAGE NO.	SWITCHOVER METHOD			ALARM SYSTEM	
		PRESSURE DIFFERENTIAL	MANUAL	FULLY AUTOMATIC	LOCAL	REMOTE
SG 900BR	32	√	N/A	N/A	N/A	OPT.
SG 900SS	34	√	N/A	N/A	N/A	OPT.
SG 905BR/ SS	39	√	N/A	N/A	N/A	OPT.
SG 910BR	46	N/A	√	N/A	N/A	OPT.
SG 910SS	48	N/A	√	N/A	N/A	OPT.
SG 960BR	38	N/A	N/A	√	√	√
SG 960SS	40	N/A	N/A	√	√	√
SG 960LE	42	N/A	N/A	√	√	√
SG 960LAM	44	N/A	N/A	√	√	√

MEDICAL



MANIFOLD SERIES	PAGE NO.	SWITCHOVER METHOD			ALARM SYSTEM	
		PRESSURE DIFFERENTIAL	MANUAL	FULLY AUTOMATIC	LOCAL	REMOTE
MSA 900	58	√	N/A	N/A	√	OPT.
MSA HL 900 w/ Heater	58	√	N/A	N/A	√	OPT.
MSA HP 900	58	√	N/A	N/A	√	OPT.
MFA 910	60	N/A	N/A	√	√	OPT.
MFA HL 910 w/ Heater	60	N/A	N/A	√	√	OPT.
MFA HP 910	60	N/A	N/A	√	√	OPT.

MATERIAL OF CONSTRUCTION		GAS SERVICE					
BRASS	STAINLESS STEEL	DELIVERY PRESSURE RANGE	HP OXY/ INERT	FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS	
√	N/A	UP TO 200 PSIG	√	√	N/A	√	
√	N/A	UP TO 200 PSIG	√	√	N/A	√	
√	N/A	UP TO 200 PSIG	√	√	N/A	N/A	
√	N/A	30-125 PSIG	√	√	N/A	N/A	
√	N/A	30-125 PSIG	OPT.	N/A	N/A	N/A	
√	N/A	50-235 PSIG	√	√	N/A	N/A	
√	N/A	40-100 PSIG	√	N/A	N/A	N/A	
√	N/A	40-100 PSIG	OPT.	N/A	N/A	N/A	
√	N/A	100-190 PSIG	√	N/A	N/A	N/A	
√	N/A	40-85 PSIG	N/A	N/A	N/A	√	
√	N/A	40-180 PSIG	N/A	N/A	N/A	√	

MATERIAL OF CONSTRUCTION		GAS SERVICE					
BRASS	STAINLESS STEEL	DELIVERY PRESSURE RANGE	HP OXY/ INERT	FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS	
√	N/A	UP TO 125 PSIG	√	√	N/A	N/A	
N/A	√	UP TO 125 PSIG	√	√	√	N/A	
√	√	UP TO 125 PSIG	√	√	√	N/A	
√	N/A	N/A	√	√	N/A	√	
N/A	√	N/A	√	√	√	√	
√	N/A	UP TO 225 PSIG	√	√	N/A	√	
N/A	√	UP TO 225 PSIG	√	√	√	√	
√	N/A	UP TO 225 PSIG	√	N/A	N/A	√	
√	N/A	UP TO 400 PSIG	√	N/A	N/A	√	

MATERIAL OF CONSTRUCTION		GAS SERVICE					
BRASS	STAINLESS STEEL	DELIVERY PRESSURE RANGE	HP OXY/ INERT	FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS	
√	N/A	30-60 PSIG	√	N/A	N/A	N/A	
√	N/A	30-60 PSIG	√	N/A	N/A	N/A	
√	N/A	100-190 PSIG	√	N/A	N/A	N/A	
√	N/A	30-70 PSIG	√	N/A	N/A	N/A	
√	N/A	30-70 PSIG	√	N/A	N/A	N/A	
√	N/A	100-190 PSIG	√	N/A	N/A	N/A	



INDUSTRIAL GAS DISTRIBUTION

SINGLE REGULATOR MANIFOLDS

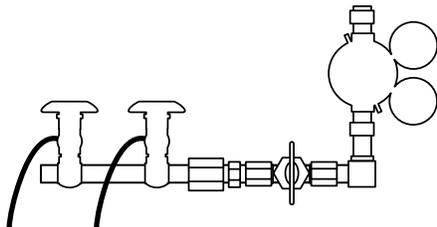


Series 200

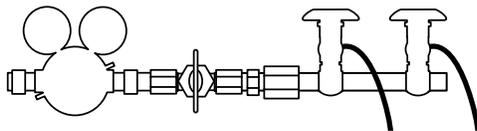
The Series 200 Single Regulator Manifold provides continuous gas from a single bank of cylinders (simplex) or two banks of cylinders (duplex). The 1/2" brass headers are available in left and right configurations. The outlet regulator is ordered separately based on the required delivery pressure.

FEATURES

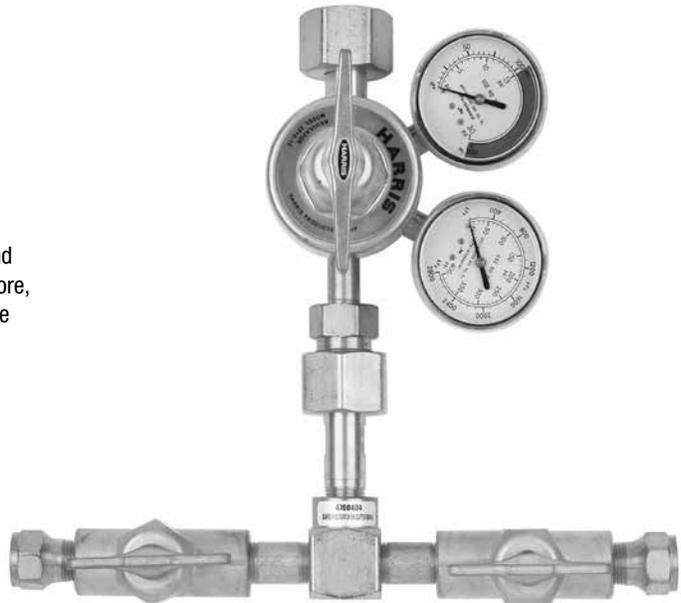
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Acetylene systems (CGA 510) include dry-type flash arrestors on pigtail end
- ▶ All systems include stainless steel braided pigtails with PTFE lined inner core, except those for helium and hydrogen that have a stainless steel inner core
- ▶ Available in simplex style (order OR, OL, OR36 or OL36)
- ▶ All pigtails include check valves



Left Simplex System (OR)



Right Simplex System (OL)



Shown with outlet regulator - Order Separately
(See Page 11)

ORDERING INFORMATION

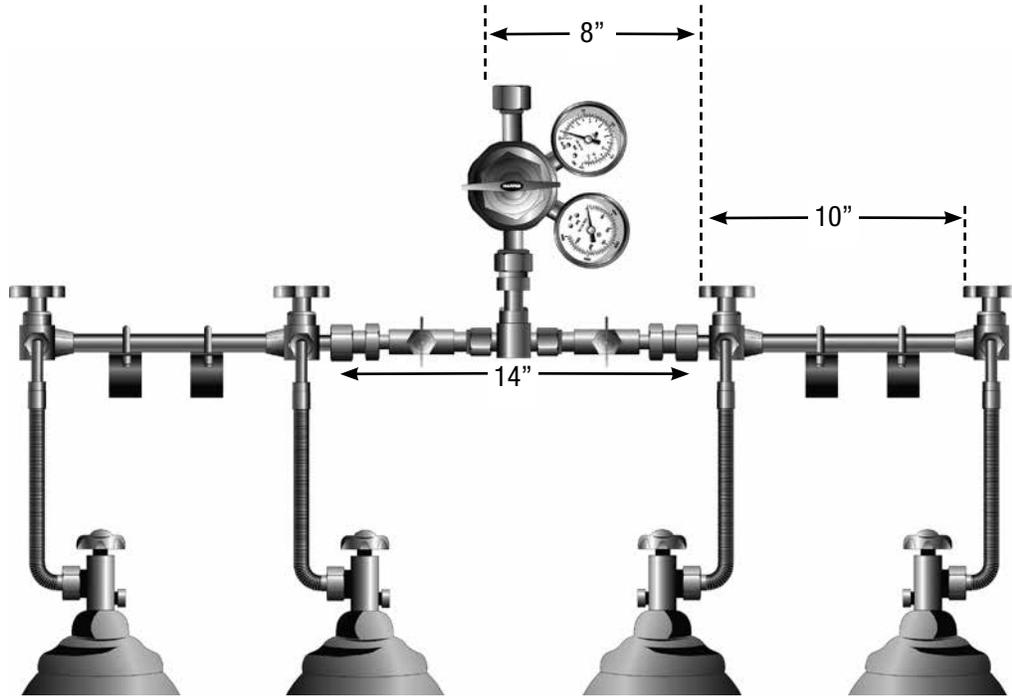
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
200	24" Pigtails	24" Pigtails	320- Carbon Dioxide 346- Air (Breathing) 350H- Hydrogen 510A- Acetylene 540- Oxygen 580- Nitrogen/Argon 590- Industrial Air 580H- Helium 510 - LPG Fuel Gas
	OR	OL	
	1R	1L	
	2R	2L	
	3R	3L	
	4R	4L	
	36" Pigtails	36" Pigtails	
	OR36	OL36	
	1R36	1L36	
	2R36	2L36	
3R36	3L36		
4R36	4L36		

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





200 TYPICAL LAYOUT



MODEL 3510
MANIFOLD REGULATOR
- order separately -

- ▶ All brass construction
- ▶ High flow
- ▶ Neoprene diaphragm
- ▶ Internal relief valve
- ▶ Cv = .55
- ▶ 1.00-11.5 NPS inlet/outlet fittings
- ▶ 1/2" NPT body ports

PART NO.	DESCRIPTION
3003549	Model 3510 - 125 RH
3003550	Model 3510 - 200 RH
3003546	Model 3510 - 15 RH *
3003548	Model 3510 - 125 LH
3003551	Model 3510 - 200 LH
3003547	Model 3510 - 15 LH *

SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	RECOMMENDED OUTLET REGULATOR	DELIVERY RANGE
200 (Simplex or Duplex)	3000 PSIG	2000 SCFH	3510-125 RH	0-125 PSIG
200 (CO ₂)	3000 PSIG	35 SCFH	3510-125 RH	0-125 PSIG
200 (Acetylene, LPG)	400 PSIG	500 SCFH	3510-15 LH*	0-15 PSIG
200 (Hydrogen, Methane)	3000 PSIG	2000 SCFH	3510-125 LH	0-125 PSIG

* Not for high pressure cylinder gases



INDUSTRIAL GAS DISTRIBUTION

PRESSURE DIFFERENTIAL SWITCHOVER

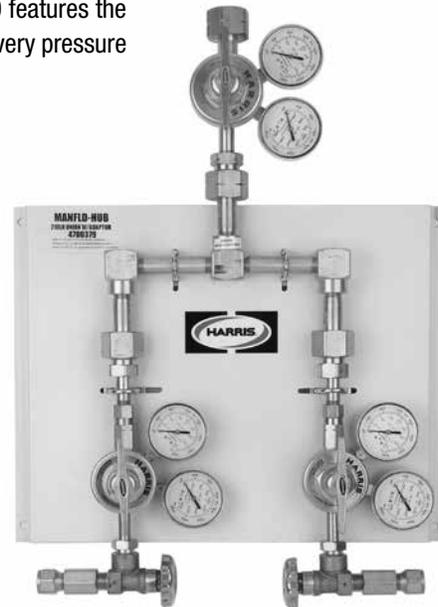


Series 210

The Series 210 Manifold automatically switches gas supply from the primary cylinder bank to the reserve cylinder bank. Regulators must be manually reset to change the primary and reserve bank. The Series 210 Manifold features 1/2" brass construction with silver brazed connections. The Series 210 features the Model 3510 high flow brass regulator. The outlet regulator is ordered separately based on delivery pressure requirements.

FEATURES

- ▶ Master shut-off valves included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Acetylene systems (CGA 510) include dry-type flash arrestors on pigtail end
- ▶ Headers include: stainless steel pigtails, check valves, header valves. Hydrogen and helium systems include stainless steel braided pigtails with a stainless steel plastic inner core. All other systems include stainless steel braided pigtails with a PTFE lined inner core.
- ▶ All pigtails include check valves



Shown with outlet regulator
order separately
(See Page 13)

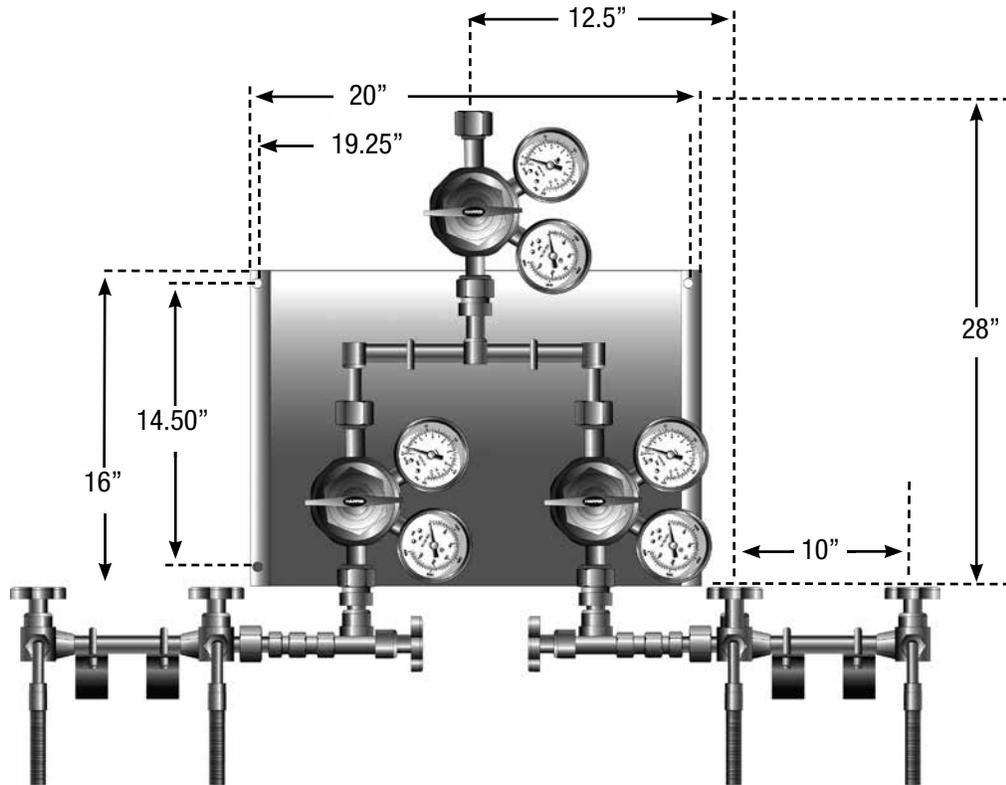
ORDERING INFORMATION

SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
210	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	320 - Carbon Dioxide
			346 - Air (Breathing)
			350H - Hydrogen
			510A - Acetylene
	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	540 - Oxygen
			580 - Nitrogen/Argon
			590 - Industrial Air
			580H - Helium
			510 - LPG Fuel Gas

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.



210 TYPICAL LAYOUT



MODEL 3510
MANIFOLD REGULATOR
- order separately -

- ▶ All brass construction
- ▶ High flow - 1/4" encapsulated seat
- ▶ Neoprene diaphragm
- ▶ Internal relief valve
- ▶ Cv = .55
- ▶ 1.00-11.5 NPS inlet/outlet fittings
- ▶ 1/2" NPT body ports

PART NO.	DESCRIPTION
3003549	Model 3510 - 125 RH
3003550	Model 3510 - 200 RH
3003546	Model 3510 - 15 RH *
3003548	Model 3510 - 125 LH
3003551	Model 3510 - 200 LH
3003547	Model 3510 - 15 LH *

SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	RECOMMENDED OUTLET REGULATOR	DELIVERY RANGE
210	3000 PSIG	1200 SCFH	3510-125 RH	0-125 PSIG
210 (CO ₂ , N ₂ O)	3000 PSIG	300 SCFH	3510-125 RH	0-125 PSIG
210 (Acetylene, LPG)	400 PSIG	400 SCFH	3510-15 LH*	0-15 PSIG
210 (H ₂ , Methane)	3000 PSIG	2000 SCFH	3510-125 LH	0-125 PSIG

* Not for high pressure cylinder gases



INDUSTRIAL GAS DISTRIBUTION

PRESSURE DIFFERENTIAL SWITCHOVER



Series 220

The Series 220 Manifold prevents downtime by automatically switching gas supply from the primary cylinder bank to the reserve cylinder bank. All components are enclosed and protected inside a tamper-resistant case. A green light indicates the primary cylinder bank is functioning and the reserve cylinder bank is ready for service. A red light alerts the user that the unit has changed over and one or both banks are depleted (except on fuel gas units). The user resets the primary bank by turning the knob.

FEATURES

- ▶ All systems include stainless steel braided pigtails with PTFE lined inner core except, helium and hydrogen systems that have a thermoplastic inner core
- ▶ Acetylene systems include: 500 SCFH flashback arrestor and piping, stainless steel braided pigtails with individual flashback arrestors and check valves
- ▶ Electrical - 115 volts (AC) except for fuel gas
- ▶ Manifold outlet - 1/2" NPT
- ▶ Relief valve outlet - 1/4" NPT
- ▶ 1/2" brass, silver brazed headers



OPTIONAL ACCESSORIES

- 4300698 - Remote Alarm Box
- 4300699 - 10ft. Alarm Cable
- 4300709 - 50ft. Alarm Cable
- For Fuel Gas Alarms see page 25

ORDERING INFORMATION

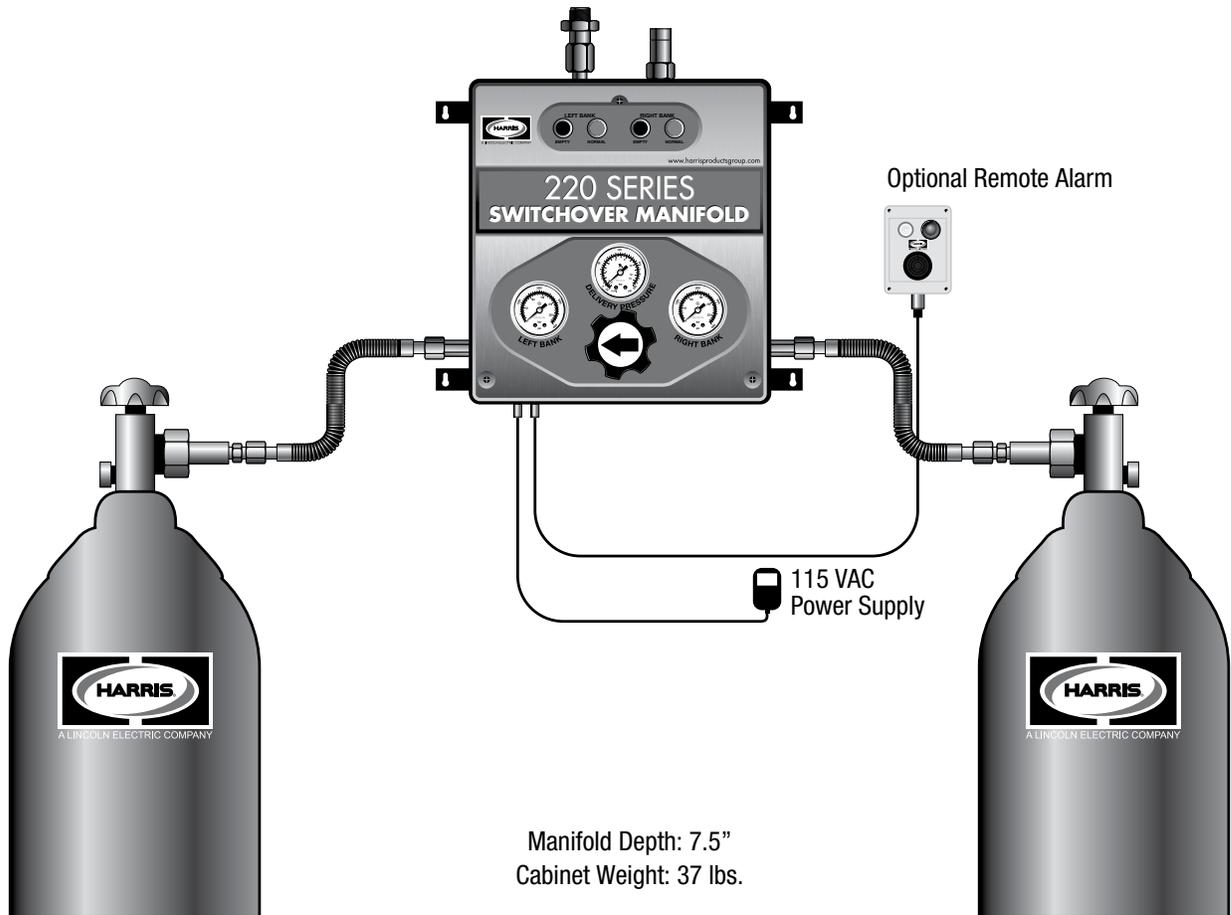
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
220 Oxy/Inert (30-125 PSIG) Acetylene (0-15 PSIG) LPG (0-30 PSIG)	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	320- Carbon Dioxide
			326- Nitrous Oxide
			346- Air (Breathing)
			510A- Acetylene
220HL (30-125 PSIG) For CO ₂ , N ₂ O and mixtures 500 SCFH heater included	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	510- Propane, LPG, Fuel Gases
			300- Acetylene
			540- Oxygen
			590- Industrial Air
			580H- Helium
220HP (50-200 PSIG) Delivery Pressures up to 235 available upon request			580- Argon/Nitrogen
			350H- Hydrogen
			350- Fuel Gases (Methane)

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





220 TYPICAL LAYOUT



SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	INTERNAL ADJUSTABLE LINE REGULATOR DELIVERY RANGE
220	3000 PSIG	1200 SCFH	30-125 PSIG
220 (CO ₂ , N ₂ O)	2000 PSIG	35 SCFH	30-125 PSIG
220 (Acetylene, LPG)	400 PSIG	500 SCFH	0-15, 0-30 PSIG
220HL (CO ₂ , N ₂ O)	2000 PSIG	500 SCFH	30-125 PSIG
220HP	3000 PSIG	2000 SCFH	50-200 PSIG
220HPL (CO ₂ , N ₂ O)	2000 PSIG	500 SCFH	50-200 PSIG

Acetylene systems include 500 SCFH dry flashback arrestors.



INDUSTRIAL GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER



Series 230

The Series 230 Manifold provides fully automatic system control. An integrated circuit board monitors cylinder bank pressure electronically, controlling change-over and eliminating the need to manually reset levers or valves. Easy-to-read digital displays show the line and individual bank pressures. A series of lights for each bank indicates whether the bank is “in service”, “ready for use” or bank depleted”.

FEATURES

- ▶ Connects to remote alarm systems. Up to 3 amps 30 volts (DC) or 2 amps 250 volts (AC). Visual remote alarm is standard. Audio/Visual alarm optional
- ▶ Fully Automatic Change-over - no levers to reset, continuous, uninterrupted gas flow. The only manual function is to replace depleted cylinders
- ▶ Display read-out in PSIG, KPA or BAR
- ▶ Micro controller monitors all functions and controls change-over
- ▶ Built to accommodate future cylinder expansion by adding header extensions
- ▶ Special header configurations available upon request
- ▶ Optional audio/visual alarm and floor stand available
- ▶ Manifold Outlet: 1/2" MNPT
- ▶ Relief Valve Outlet: 1/2" MNPT
- ▶ 24" flexible stainless steel pigtails with check valves
- ▶ 1/2" brass, silver brazed headers
- ▶ Electrical - 115 volts (AC)



ORDERING INFORMATION

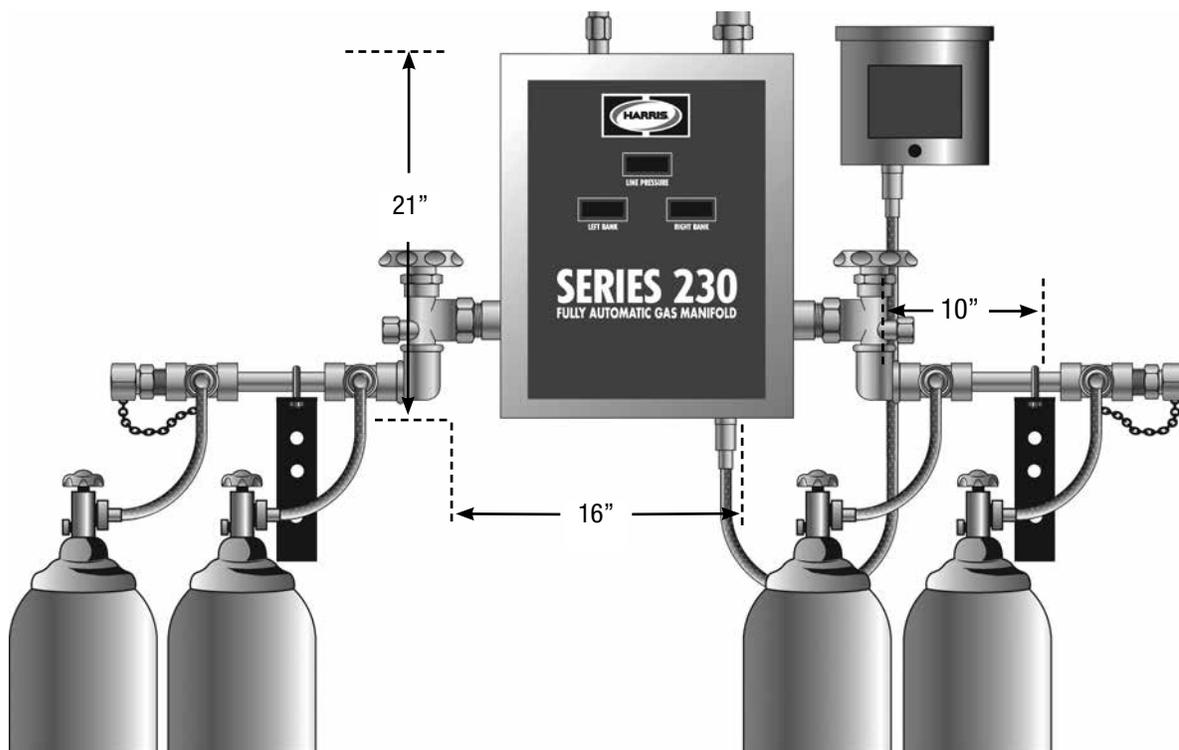
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
230 (40-100 PSIG)	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	320- Carbon Dioxide 326- Nitrous Oxide 346- Air (Breathing) 540- Oxygen 580- Argon/Nitrogen 580H- Helium 590- Industrial Air
230HL (40-100 PSIG) (For CO ₂ and N ₂ O, 500 SCFH heater included)	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	
230HP (100-190 PSIG)			

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





230 TYPICAL LAYOUT



Manifold Depth: 10"
Cabinet Weight: 55 lbs.

SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
230	3000 PSIG	2000 SCFH	40-100 PSIG
230 (CO ₂ , N ₂ O)	2000 PSIG	35 SCFH	40-100 PSIG
230 HL (CO ₂ , N ₂ O with heaters)	2000 PSIG	500 SCFH	40-100 PSIG
230 HP	3000 PSIG	2500 SCFH	100-190 PSIG



INDUSTRIAL GAS DISTRIBUTION

LIQUID CYLINDER GAS MANIFOLD



Series 240

The Series 240 Manifold is designed specifically to regulate and monitor vaporized gas from cryogenic cylinders. The Series 240 Manifold prevents downtime by automatically switching over when the primary cylinder bank is depleted. A green light indicates the primary cylinder service bank is functioning and the reserve cylinder bank is ready for service. A red light signals that the system has changed over and one or both banks are depleted. The user resets the primary bank by turning the knob.

FEATURES

- ▶ Adaptable up to 3 cylinders per side
- ▶ Electrical - 115 volts (AC)
- ▶ Maximum inlet pressure 230 or 350 PSIG
- ▶ Manifold outlet - 1/2" NPT
- ▶ Relief valve outlet - 1/4" NPT
- ▶ 240 Series for use with 235 PSIG relief valve liquid cylinders
- ▶ 240HP Series for use with 350 PSIG relief valve liquid cylinders
- ▶ Remote alarm available
- ▶ Economizer Circuit



OPTIONAL ACCESSORIES

- 4300698 - Remote Alarm Box
- 4300699 - 10ft. Alarm Cable
- 4300709 - 50ft. Alarm Cable
- 9101996 - CGA 320 Pigtail, 72"
- 9101997 - CGA 540 Pigtail, 72"
- 9101998 - CGA 580 Pigtail, 72"

ORDERING INFORMATION

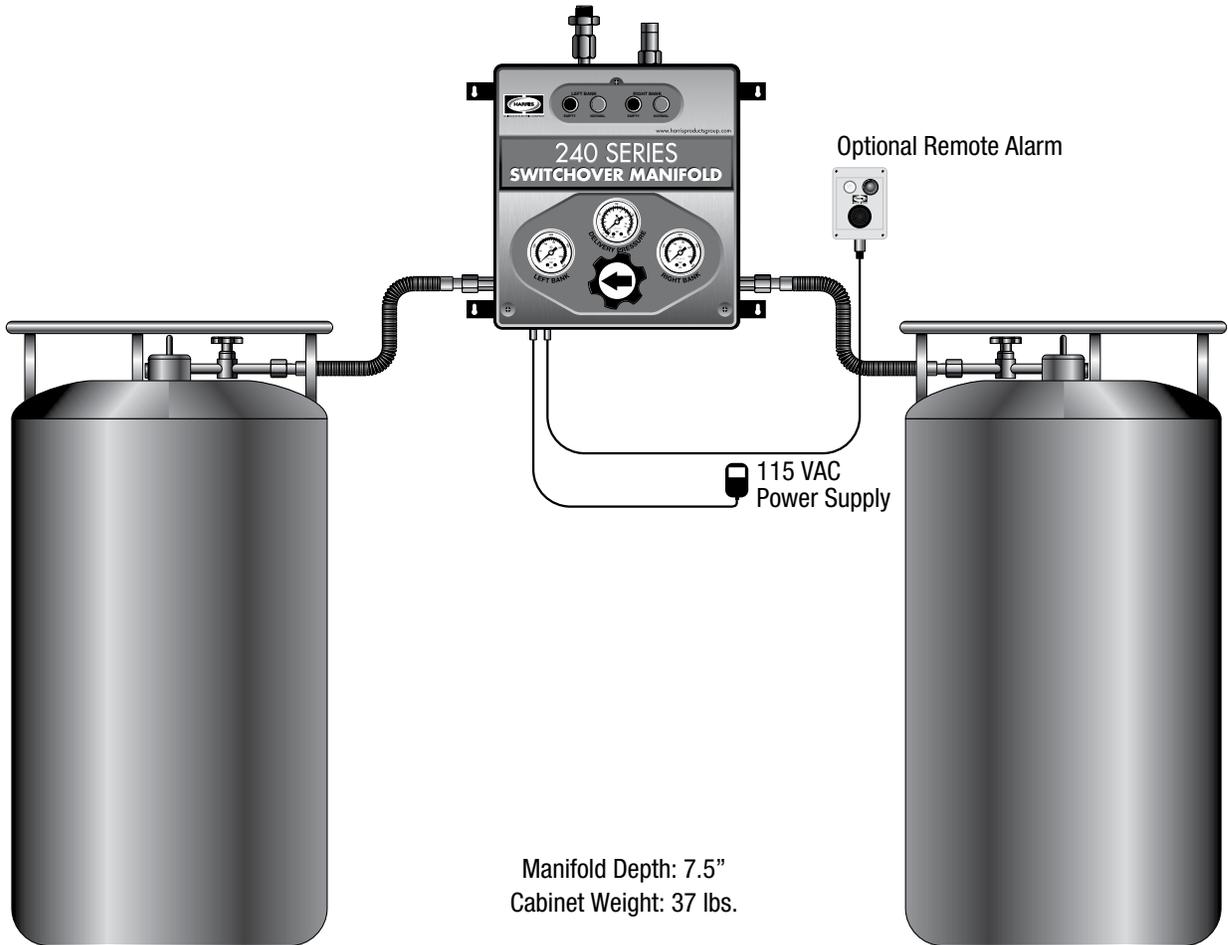
SERIES	LEFT HEADER (# cylinders)	RIGHT HEADER (# cylinders)	GAS SERVICE
240	72" Pigtails	72" Pigtails	320-Carbon Dioxide
240HP	1L72	1R72	540-Oxygen
	2L72	2R72	580-Argon/Nitrogen
	3L72	3R72	326-Nitrous Oxide

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





240 TYPICAL LAYOUT



SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	INTERNAL ADJUSTABLE LINE REGULATOR DELIVERY RANGE
240	235 PSIG	750 SCFH	40-85 PSIG
240HP	350 PSIG	800 SCFH	40-180 PSIG



INDUSTRIAL GAS DISTRIBUTION

COMPACT TWO-GAS BLENDER



Model US-S10 Welding Gases & Other Applications

Harris Model US-S10 is a small, compact, wall mounted variable-ratio gas blender designed to create a mix of blended gases from pure gas cylinders. The gases are mixed in proportions defined by the user with the turn of a single knob. The mixed gas is then distributed downstream through the pipeline system. The US-S10 requires no receiver tank and no electricity to operate.

FEATURES

- ▶ Variable ratios up to 100%
- ▶ Flow range up to 500 SCFH
- ▶ Inlet / outlet connections – 1/4" FNPT
- ▶ Accuracy +/- 2%

SPECIFICATIONS

- ▶ Minimum inlet pressure – 87 PSIG
- ▶ Maximum inlet pressure – 145 PSIG
- ▶ Minimum difference between the two inlet pressures - 15 PSIG
- ▶ Maximum difference between the two inlet pressures - 40 PSIG
- ▶ Dimensions – 6.5"L x 5"W x 4"D

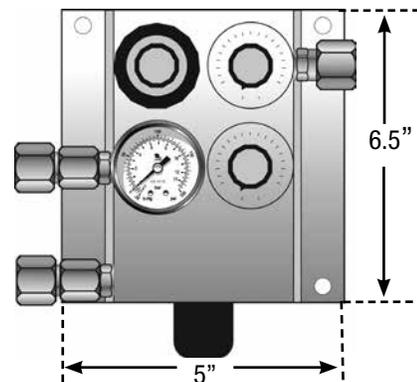
OPTIONAL ACCESSORIES

- 9000371 - Adaptor for inert hose "B" (CGA 032) 5/8" - 18 RH (F) x 1/4" MNPT
- 4302076 - CO₂/O₂ Analyzer



ORDERING INFORMATION

SERIES	GAS SERVICE	PART NO.	MIXING RANGE
US-S10-1	Ar/CO ₂	4302053	0-100% CO ₂ in Ar
US-S10-2	Ar/O ₂	4302054	0-25% O ₂ in Ar
US-S10-3	Ar/He	4302063	0-100% He in Ar
US-S10-4	He/H ₂	4302068	0-10% H ₂ in He
US-S10-5	N ₂ /O ₂	4302078	0-25% O ₂ in N ₂





CABINET TWO-GAS BLENDER

Model US-L20

Harris Model US-L20 variable-ratio gas blenders are designed to create a precise mix of welding shielding gases from pure gas cylinders. The gases are mixed in proportions defined by the user with the turn of a single knob. The mixed gas is then distributed to the welding machines through the pipeline system.

FEATURES

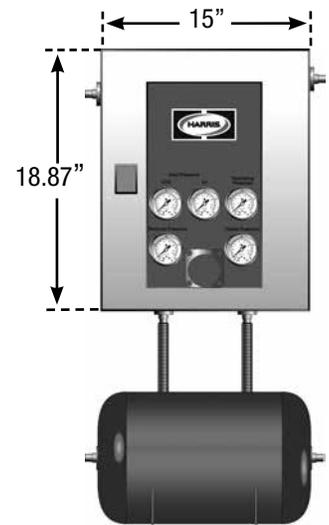
- ▶ Ar/CO₂ variable ratio up to 100%
- ▶ Ar/O₂ variable ratio up to 25%
- ▶ Outlet shut off valve included
- ▶ Ar/CO₂ maximum flow rate – 700 SCFH
- ▶ Ar/O₂ maximum flow rate – 425 SCFH
- ▶ Connections – 1/2" NPT
- ▶ Receiver Tank – 5 gal. with relief valve
- ▶ 36" Flexible hoses and connection hardware to tank included
- ▶ Accuracy +/- 2%

SPECIFICATIONS

- ▶ Minimum inlet pressure – 116 PSIG
- ▶ Maximum inlet pressure – 145 PSIG
- ▶ Difference between the two inlet pressures – 40 PSIG max.
- ▶ Outlet pressure – 36 PSIG
- ▶ Electrical supply – 110VAC, 50/60 Hz
- ▶ Power consumption – 7.7VA
- ▶ Current consumption - .07A
- ▶ 200 psi relief valve on tank
- ▶ Connection - 1/2" NPT

ORDERING INFORMATION

SERIES	GAS SERVICE	PART NO.
US-L20-1 (no receiver tank)	Ar/CO ₂	4302050
US-L20-1R (with receiver tank and connection hardware)	Ar/CO ₂	4302070
US-L20-2 (no receiver tank)	Ar/O ₂	4302051
US-L20-2R (with receiver tank and connection hardware)	Ar/O ₂	4302071



Wall Mounted Blender Cabinet with receiver tank P/N 4302070



INDUSTRIAL GAS DISTRIBUTION

CABINET TWO-GAS BLENDER



Model US-L10

Harris Model US-L10 variable-ratio gas blenders are designed to create a precise mix of welding shielding gases from pure gas cylinders. The gases are mixed in proportions defined by the user with the turn of a single knob. The mixed gas is then distributed to the welding machines through the pipeline system.

FEATURES

- ▶ Ar/He variable ratio up to 100%
- ▶ Outlet shut-off valve included
- ▶ Maximum flow rate – 425 SCFH (12 Nm³/h)
- ▶ Receiver tank – 5 gal. with relief valve
- ▶ 36" Flexible hoses and connection hardware to tank included
- ▶ Accuracy +/- 2%

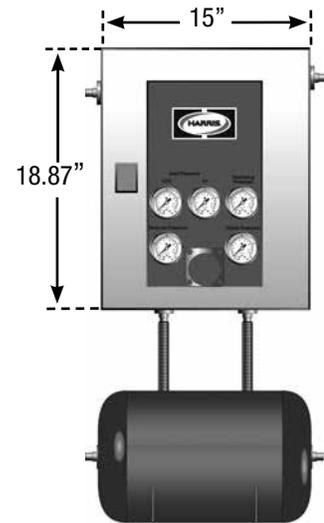
SPECIFICATIONS

- ▶ Ar/He variable ratio up to 100%
- ▶ Minimum inlet pressure – 116 PSIG
- ▶ Maximum inlet pressure – 145 PSIG
- ▶ Difference between the two inlet pressures – 40 PSIG max
- ▶ Outlet pressure – 36 PSIG max
- ▶ Maximum flow rate – 425 SCFH (12 Nm³/h)
- ▶ Connections – 1/2" NPT
- ▶ Electrical supply – 110VAC, 50/60 Hz
- ▶ Power consumption – 7.7VA
- ▶ Current consumption – .07A
- ▶ Flexible hoses and connection hardware to tank included
- ▶ 200 PSI relief valve on tank



ORDERING INFORMATION

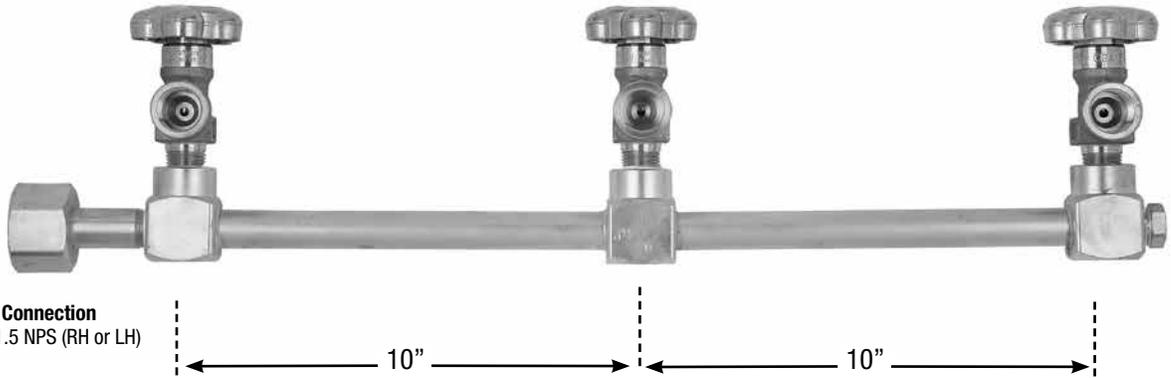
PART NO.	SERIES	GAS SERVICE
4302052	US-L10-3 (no receiver tank)	Ar/He
4302072	US-L10-3R (with receiver tank and connection hardware)	Ar/He



Wall Mounted Blender Cabinet
with receiver tank P/N 4302070



MANIFOLD HEADERS



Outlet Connection
1" - 11.5 NPS (RH or LH)

FEATURES

- ▶ Header valves with CGA 580 connection included
- ▶ Headers are 1/2" NPT silver brazed pipe
- ▶ Order pigtails separately
- ▶ Removable plug for expansion

ORDERING INFORMATION

MATERIAL	CYLINDERS	RIGHT HEADER		LEFT HEADER	
		RIGHT HAND THREAD PART NO.	LEFT HAND THREAD PART NO.	RIGHT HAND THREAD PART NO.	LEFT HAND THREAD PART NO.
Brass	2 Cylinders	9103309	9103311	9103310	9103312
Brass	3 Cylinders	9103313	9103315	9103314	9103316
Brass	4 Cylinders	9103317	9103319	9103318	9103320



INDUSTRIAL GAS DISTRIBUTION

PIGTAILS



FLEXIBLE PIGTAILS

PART NO.	OUTER MATERIAL & FITTINGS	INNER CORE	LENGTH	CONNECTIONS	PRESSURE RATING PSIG
9005745	Stainless Steel	PTFE	24"	1/4" FNPT x 1/4" FNPT	3000
9005731	Stainless Steel	Stainless Steel	24"	1/4" FNPT x 1/4" FNPT	3000
4300534	Stainless Steel	PTFE	36"	1/4" MNPT x 1/4" MNPT	5500
4300537	Stainless Steel	PTFE	72"	1/4" MNPT x 3/8" MNPT	5500
9005769	Stainless Steel	Stainless Steel	36"	1/4" FNPT x 1/4" FNPT	3000
9005770	Stainless Steel	PTFE	36"	1/4" FNPT x 1/4" FNPT	3000
9005771	Stainless Steel	Stainless Steel	36"	1/4" FNPT x 3/8" FNPT	3000
9005754	Stainless Steel	Stainless Steel	24"	1/4" FNPT x 3/8" FNPT	3000
9005729	Stainless Steel	PTFE	24"	1/4" FNPT x 3/8" FNPT	3000

REPLACEMENT PIGTAILS

PART NO.	INNER CORE	CYLINDER CONNECTION	LENGTH	MANIFOLD CONNECTIONS	PRESSURE RATING PSIG
9103352	PTFE	300 A	24"	510	500
9103353	PTFE	320	24"	580	3000
9103354	PTFE	326	24"	580	3000
9103355	PTFE	346	24"	580	3000
9103356	PTFE	350	24"	350	3000
9103357	Thermo Plastic	350 H	24"	350	3000
9103358	PTFE	510	24"	510	500
9103359	PTFE	510 A	24"	510	500
9103360	PTFE	540	24"	540	3000
9103361	PTFE	580	24"	580	3000
9103362	Thermo Plastic	580 H	24"	580	3000
9103363	PTFE	300 A	36"	510	500
9103364	PTFE	320	36"	580	3000
9103365	PTFE	326	36"	580	3000
9103366	PTFE	346	36"	580	3000
9103367	PTFE	350	36"	350	3000
9103368	Thermo Plastic	350 H	36"	350	3000
9103369	PTFE	510	36"	510	500
9103370	PTFE	510 A	36"	510	500
9103371	PTFE	540	36"	540	3000
9103372	PTFE	580	36"	580	3000
9103373	Thermo Plastic	580 H	36"	580	3000

Pigtails include check valve at cylinder connection

ALARM KITS/PIPELINE PROTECTION



REMOTE ALARM KITS NOT FOR FUEL GAS SERVICE

PART NO.	DESCRIPTION	USE WITH MANIFOLD SERIES
4300698	A/V Alarm Box Only	220, 240 Systems
4300341	A/V Alarm Box Only	Optional on 230 Systems
4300699	Alarm Box Cable, 10'	220, 240 Systems
4300709	Alarm Box Cable, 50'	220, 240 Systems

REMOTE ALARM KITS FOR FUEL GAS SERVICE

PART NO.	GAS SERVICE	DESCRIPTION	USE WITH MANIFOLD SERIES
4300343	Acetylene	Visual and Audio	Optional on 220 Acetylene Systems
4300344	Hydrogen	Visual and Audio	Optional on 220 Hydrogen Systems
4300345	LPG Gases	Visual and Audio	Optional on 220 LPG Gas Systems

Kit includes piping

NFPA PIPELINE PROTECTION DEVICES

PART NO.	GAS SERVICE	DESCRIPTION	FLOW CAPACITY	INLET AND OUTLET CONNECTIONS	RELIEF VALVES
4300221	Acetylene	Dry Arrestor	500 SCFH	1" NPT	20 PSIG
4300222	Acetylene	Dry Arrestor	500 SCFH	1/2" NPT	20 PSIG
4300223	LPG, Natural Gas, H2	Dry Arrestor	1000 SCFH	1" NPT	40 PSIG
4300224	LPG, Natural Gas, H2	Dry Arrestor	1000 SCFH	1/2" NPT	40 PSIG
4300228	Oxygen	Dry Arrestor	5000 SCFH	1" NPT	225 PSIG
4300229	Oxygen	Dry Arrestor	5000 SCFH	1/2" NPT	225 PSIG
4300350	Acetylene	Hydraulic Arrestor	300 SCFH	1" NPT	20 PSIG
4300354	LPG/Hydrogen	Hydraulic Arrestor	300 SCFH	1" NPT	40 PSIG
4300357	-	Floor Stand	- -	-	

Floor Stand is for the Hydraulic Arrestors



PN: 4300222 Shown



INDUSTRIAL GAS DISTRIBUTION

FITTINGS

HEADER EXTENSION

PART NO.	MATERIALS	LENGTH	CONNECTIONS	HEADER PLUG
9103300	Brass	10"	1/2" NPT	9005711
9103304	Stainless Steel	10"	1/2" NPT	9005715



ADJUSTABLE WALL BRACKET

PART NO.	DESCRIPTION
9103308	90°, Black, includes "U"-Bolt and mounting clamp



HEADER VALVES - STATION VALVES

PART NO.	MATERIAL	VALVE TYPE	INLET	OUTLET
9005700	Brass	Packed Stem	1/2" MNPT	580 CGA
9005706	Brass	Master Shut-Off Valve	1/2" FNPT	1/2" FNPT
9005086	Brass	Station Oxygen	1/2" MNPT	7/8"-14-RH
9005088	Brass	Station Fuel	1/2" MNPT	7/8"-14-LH



Master Shut-off Valve



Packed Stem Valve



Station Valve

FLASH ARRESTORS

PART NO.	MATERIAL
4300378	1/4" FNPT x 1/4" FNPT



Prevents flashback in oxy-fuel gas systems. An internal check valve prevents backflow while a sintered metal filter absorbs the heat and extinguishes the flame from a flashback. Maximum flow rate - 50 SCFH

MANIFOLD CONNECTION FITTINGS

PART NO.	MATERIAL	DESCRIPTION	PRESSURE RATING PSIG
9005701	Brass	1.00 - 11.5 NPS union nut, RH	3000
9005725	Brass	1.00-11.5 NPS union nut, LH	3000
9005703	Brass	1/2 NPT union nipple, 3" long	3000
9005759	Brass	3/8" NPT union nipple 3" long	3000
9005708	Brass	1.00 - 11.5 NPS x 1/2 NPT union bushing, RH	3000
9005726	Brass	1.00 - 11.5 NPS x 1/2 NPT union bushing, LH	3000
9005747	Brass	1.00 - 11.5 NPS x 3/8 NPT union bushing, RH	3000
9005727	Brass	1.00 - 11.5 NPS x 3/8 NPT union bushing, LH	3000



Union Nipple



Union Nut



Union Bushing

HEATERS



Part No: 4302074
Fittings sold separately



Part No: 4302073



Part No: 4302075

Automatic electric heaters for compressed gases are recommended where conditions or flow rates may tend to cause equipment freeze-up. Heater units are thermostatically controlled and flow can pass in either direction through the heater. The Model 1000 is appropriate for flow rates up to 1000 SCFH and the Model 160 is suitable for flow rates up to 160 SCFH.

FEATURES

- ▶ Prevents equipment freeze-up
- ▶ Thermostatically controlled
- ▶ Can be left "ON" under no-flow conditions

PART NO.	DESCRIPTION
4302073	Heater, 1000SCFH 120VAC
4302074	Heater, 160SCFH 120VAC - 1/4" FNPT X 1/4" FNPT
4302075	Adaptor Block, 1000CFH 120VAC
9005740	Adaptor, 1/4 M X 1/2 F BR
9101166	SG920, 960LE, & 960LAM Heater Adaptor Kit
9101167	SG900 Heater Adaptor Kit
9101168	220 & 240 Heater Adaptor Kit
9101169	SG960 Heater Adaptor Kit



Part No: 4300361

STATION DROPS

PART NO.	GAS SERVICE	OUTLET CONNECTION	LENGTH	DESCRIPTION
4300361	Acetylene	7/8"-14 LH	25"	1/2" Single Outlet Station Drop
4300362	Compressed Air	9/16"-18 RH	25"	1/2" Single Outlet Station Drop
4300363	Argon	5/8"-18 RH	25"	1/2" Single Outlet Station Drop
4300364	Carbon Dioxide	5/8"-18 RH	25"	1/2" Single Outlet Station Drop
4300365	Helium	5/8"-18 RH	25"	1/2" Single Outlet Station Drop
4300366	Hydrogen	7/8"-14 LH	25"	1/2" Single Outlet Station Drop
4300367	Nitrogen	5/8"-18 RH	25"	1/2" Single Outlet Station Drop
4300368	Oxygen	7/8"-14 RH	25"	1/2" Single Outlet Station Drop
4300369	LPG Gases	7/8"-14 LH	25"	1/2" Single Outlet Station Drop
4300391	Acetylene	7/8"-14 LH	35"	1/2" Double Outlet Station Drop
4300392	Compressed Air	9/16"-18 RH	35"	1/2" Double Outlet Station Drop
4300393	Argon	5/8"-18 RH	35"	1/2" Double Outlet Station Drop
4300394	Carbon Dioxide	5/8"-18 RH	35"	1/2" Double Outlet Station Drop
4300395	Helium	5/8"-18 RH	35"	1/2" Double Outlet Station Drop
4300396	Hydrogen	7/8"-14 LH	35"	1/2" Double Outlet Station Drop
4300397	Nitrogen	5/8"-18 RH	35"	1/2" Double Outlet Station Drop
4300398	Oxygen	7/8"-14 RH	35"	1/2" Double Outlet Station Drop
4300399	LPG Gases	7/8"-14 LH	35"	1/2" Double Outlet Station Drop

Equipped with an in-line shut-off valve, drip leg, outlet cap, chain and labeled for the gas type



INDUSTRIAL GAS DISTRIBUTION

HIGH FLOW STATION REGULATORS

Model 447

The Model 447 regulators provide high gas flow from piping systems that are equipped with standard pipe connection outlets or with station regulator connections.

FEATURES

- ▶ 2-3/4" neoprene diaphragm
- ▶ One-piece encapsulated seat design with an internal filter and PTFE Teflon® seats
- ▶ Forged brass body and bonnet
- ▶ 2-1/2" dual scale brass gauge
- ▶ Conforms to CGA E-4
- ▶ 447-20p-1/4" for pipeline flowmeter regulator service



ORDERING INFORMATION

PART NO.	MODEL NO.	GAS	MAXIMUM INLET PSIG	DELIVERY PRESSURE RANGE PSIG	DELIVERY PRESSURE GAUGE PSIG	INLET CONNECTION	OUTLET CONNECTION
4000548*	447NC-1-CL	FUEL GASES	200	0-1	15	7/8"-14-LH(F)	9/16"-18 LH
4000549*	447NC-15CL		200	0-15	30	7/8"-14-LH(F)	9/16"-18 LH
4000551	447-50-CL		200	0-50	100	7/8"-14-LH(F)	9/16"-18 LH
4000566*	447NC-15-CR	OXYGEN	200	0-15	30	7/8"-14-RH(F)	9/16"-18 RH
4000553	447-50-CR		200	0-50	100	7/8"-14-RH(F)	9/16"-18 RH
4000555	447-125-CR		200	0-125	200	7/8"-14-RH(F)	9/16"-18 RH
4000557	447-200-CR		200	0-200	400	7/8"-14-RH(F)	9/16"-18 RH
4000559	447-50-CRM		AIR/INERT GAS	200	0-50	100	7/8"-14-RH(M)
4000561	447-125-CRM	"OIL FREE"	200	0-125	200	7/8"-14-RH(M)	5/8"-18 RH(F)
4000563	447-200-CRM		200	0-200	400	7/8"-14-RH(M)	5/8"-18 RH(F)

NOTE: Station Regulator CGA Connections - Fuel Gas: 025, Oxygen: 024, Inert Gases: 034.

NOTE: The maximum inlet pressure for a Station Regulator is 200 PSIG. The maximum inlet pressure for a Model 447 Station Regulator, with the "C" connection removed, is 400 PSIG.

* Low pressure models use a neoprene seat (NC)

HIGH FLOW STATION REGULATORS

Model 547

The Model 547 regulators provide high gas flow from piping systems that are equipped with station regulator connections.

FEATURES

- ▶ One-piece encapsulated seat design with an internal filter and PTFE Teflon® seats
- ▶ Forged brass body and bonnet
- ▶ 2-3/4" neoprene diaphragm
- ▶ 2-1/2" dual scale brass gauge
- ▶ Conforms to CGA E-4
- ▶ Low pressure models use a neoprene seat (NC)*



ORDERING INFORMATION

PART NO.	MODEL NO.	GAS	MAXIMUM INLET PSIG	DELIVERY PRESSURE RANGE PSIG	DELIVERY PRESSURE GAUGE PSIG	CGA INLET CONNECTION	OUTLET CONNECTION	
4000601*	547NC-15-CL	FUEL GASES	200	0-15	30	7/8"-14-LH(F) 025	9/16"-18 LH	
4000603	547-50-CL		200	0-50	100	7/8"-14-LH(F) 025	9/16"-18 LH	
4000605	547-50-CR	OXYGEN	200	0-50	100	7/8"-14-RH(F) 024	9/16"-18 RH	
4000607	547-125-CR		200	0-125	200	7/8"-14-RH(F) 024	9/16"-18 RH	
4000609	547-200-CR		200	0-200	400	7/8"-14-RH(F) 024	9/16"-18 RH	
4000620*	547NC-1-CRM	AIR/INERT GAS	200	0-1	15	7/8"-14-RH(M) 034	5/8"-18 RH(F)	
4000611	547-50-CRM		200	0-50	100	7/8"-14-RH(M) 034	5/8"-18 RH(F)	
4000613	547-125-CRM		"OIL FREE"	200	0-125	200	7/8"-14-RH(M) 034	5/8"-18 RH(F)
4000615	547-200-CRM			200	0-200	400	7/8"-14-RH(M) 034	5/8"-18 RH(F)
4000617	547-FG-1/4		Ar, CO2	500	0-100 SCFH	0-100 SCFH	1/4 NPT(F)	9/16"-18 RH

NOTE: The maximum inlet pressure for a Station Regulator is 200 PSIG. The maximum inlet pressure for a Model 547 Station Regulator, with the "C" connection removed, is 500 PSIG. * 547-FG is a Pipeline Regulator.



PANEL MOUNT REGULATOR

Model 647

The Model 647 is a panel mount pipeline regulator used for accurate and repeatable delivery pressures. It is available in four pressure ranges that can be further customized to specific lower pressures.

FEATURES

- ▶ Brass body with neoprene diaphragm and seat
- ▶ Includes panel mount nut
- ▶ Available in 0-15, 50, 125 and 0-175 PSIG
- ▶ Knob shipped loose so that user can make final maximum psi adjustment
- ▶ 1/4" NPT connections

ORDERING INFORMATION

PART NO.	MODEL NO.	MAXIMUM INLET	DELIVERY PRESSURE RANGE	DELIVERY PRESSURE GAUGE	INLET CONNECTION	OUTLET CONNECTION
4000680	647PM-015-000	500 PSIG	0-15 PSIG	60 PSIG	1/4" NPT	1/4" NPT
4000681	647PM-050-000	500 PSIG	0-50 PSIG	60 PSIG	1/4" NPT	1/4" NPT
4000682	647PM-125-000	500 PSIG	0-125 PSIG	150 PSIG	1/4" NPT	1/4" NPT
4000683	647PM-175-000	500 PSIG	0-175 PSIG	400 PSIG	1/4" NPT	1/4" NPT



PIPELINE FLOWMETER

Model 55-2

Models 55-2 flowmeters are designed to give precise flow control in SCFH. They are compensated at 20 or 50 PSIG and calibrated for most common industrial gases.

FEATURES

- ▶ Flows to 140 SCFH
- ▶ For accurate measurement of gas flow for gas-shielded arc welding and laboratory applications
- ▶ Sensitive needle valve for fingertip control
- ▶ Tamper-proof, self seating H.P. safety valve
- ▶ Durable, easy-to-read flow tube and cover



For pipeline applications, use the Harris pre-set 447-20P-1/4R regulator (P/N 4000584)
 Inlet - 1/4" NPT Connections
 Outlet - 9/16"-18-RH (m)

ORDERING INFORMATION

PART NO.	MODEL NO.	GAS	FLOW CAPACITY SCFH	SUPPLY PRESSURE GAUGE	INLET CONNECTION	OUTLET CONNECTION
5400609	55-2 Ar/CD 70	Argon/Carbon Dioxide	0-70@20 PSIG*	4000 PSIG	9/16"-18(F)	5/8"-18(F)
5400614	55-2 Ar/CD 70(M)	Argon/Carbon Dioxide	0-70@20 PSIG*	4000 PSIG	5/8"-18(M)	5/8"-18(F)
5400610	55-2 Ar/CD 70-1/4	Argon/Carbon Dioxide	0-70@20 PSIG*	4000 PSIG	1/4" NPT(M)	5/8"-18(F)
5400611	55-2 Ar/CD 100	Argon/Carbon Dioxide	0-100@50 PSIG*	4000 PSIG	9/16"-18(F)	5/8"-18(F)
5400616	55-2 Ar/CD 100	Argon/Carbon Dioxide	0-100@50 PSIG*	4000 PSIG	1/4" NPT(M)	5/8"-18(F)
5400612	55-2 He/H2 90	Helium/Hydrogen	0-100 (0-140)@20 PSIG	4000 PSIG	9/16"-18(F)	5/8"-18(F)
5400613	55-2 N2/AIR 90	Nitrogen/Air	0-100@20 PSIG	4000 PSIG	9/16"-18(F)	5/8"-18(F)
5400615	55-2 Ar/He	Argon/Helium	0-45 (0-140)@20 PSIG	4000 PSIG	9/16"-18(F)	5/8"-18(F)

* On maximum continuous duty cycle, CO2 flow to 20 SCFH



INDUSTRIAL GAS DISTRIBUTION

HIGH FLOW MANIFOLD REGULATORS



Model 3520

The Model 3520 is a high flow, two-gauge inline manifold regulator for pipeline and other applications up to 3000 PSIG inlet pressure. It is typically used for high flow, non-corrosive gas applications, high-purity gas applications, process analyzer gases and bulk gas distribution systems.

FEATURES

- ▶ 2 3/4" stainless steel diaphragm eliminates contamination from diffusion or out-gassing
- ▶ 1/2" FNPT connections
- ▶ One-piece encapsulated seat design includes a sintered filter to protect the seat from particulate contamination
- ▶ 2 1/2" brass dual scale gauges (psi/bar)
- ▶ Maximum inlet 3000 PSIG (500 PSIG for 15 PSIG model)
- ▶ Cv - 0.55



ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE	
		DELIVERY	OUTLET GAUGE
3003560	HP 3520-15	0-15 PSIG	30 psi/2 bar
3003561	HP 3520-50	0-50 PSIG	100 psi/7 bar
3003562	HP 3520-125	0-125 PSIG	200 psi/14 bar
3003563	HP 3520-250	0-250 PSIG	400 psi/28 bar
3003564	HP 3520-500	0-500 PSIG	1000 psi/70 bar

OPTIONAL ACCESSORIES

- 9103615 - CGA 540 Adapter Kit
- 9103616 - CGA 580 Adapter Kit

HIGH FLOW PIPELINE REGULATORS



Model 3530

The Model 3530 is a brass barstock regulator for pipeline and manifold applications, plumbed inline for inlet pressures upto 3000 PSIG. It is designed for non-corrosive, high-flow gas applications, process analyzer gases, laser gas systems and emission monitoring system gases.

FEATURES

- ▶ 2 3/4" stainless steel diaphragm eliminates contamination from diffusion or outgassing
- ▶ 1/2" FNPT Connections
- ▶ One piece encapsulated seat design includes a sintered filter to protect the seat from particulate contamination
- ▶ 2 1/2" brass dual scale gauges (psi/bar)
- ▶ Maximum inlet 3000 PSIG (500 PSIG for 15 PSIG model)
- ▶ Cv - 0.55



ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE	
		DELIVERY	OUTLET GAUGE
4000800	HP 3530-15	0-15 PSIG	30 psi/2 bar
4000801	HP 3530-50	0-50 PSIG	100 psi/7 bar
4000802	HP 3530-125	0-125 PSIG	200 psi/14 bar
4000803	HP 3530-250	0-250 PSIG	400 psi/28 bar
4000804	HP 3530-500	0-500 PSIG	1000 psi/70 bar

OPTIONAL ACCESSORIES

- 9103615 - CGA 540 Adapter Kit
- 9103616 - CGA 580 Adapter Kit



ULTRA HIGH FLOW MANIFOLD REGULATORS



Model 3540

The Model 3540 regulator is a single stage brass barstock regulator intended for applications where extremely high volumes of gas are required. The Model 3540 is designed for bulk gas distribution, purging, and blanketing and large chamber pressurization.

FEATURES

- ▶ Versatile port configurations for right or left side inlet
- ▶ Can be converted to single gauge model
- ▶ 15, 50, 125 and 250 PSIG models available
- ▶ One-piece encapsulated valve design with PTFE seats and 10 micron filter
- ▶ Ergonomic knob for improved grip
- ▶ 1/2" NPT connections
- ▶ Rear panel mountable
- ▶ Cv - 1.1

ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE DELIVERY	OUTLET GAUGE	INLET GAUGE	MAX INLET
4000950	3540-015	1-15 PSIG	30 psi/2 bar	600 PSIG	600 PSIG
4000951	3540-050	5-50 PSIG	100 psi/7 bar	600 PSIG	600 PSIG
4000952	3540-125	10-125 PSIG	200 psi/14 bar	600 PSIG	600 PSIG
4000953	3540-250	20-250 PSIG	400 psi/28 bar	600 PSIG	600 PSIG



ULTRA HIGH FLOW PIPELINE REGULATORS



Model 3560

The Model HP 3560 regulator is a single stage brass barstock regulator intended for applications where extremely high volumes of gases are required at low incoming pressures. The Model 3560 is designed for bulk gas distribution, purging, and blanketing and large chamber pressurization.

FEATURES

- ▶ Versatile port configurations for right or left side inlet
- ▶ 15, 50, 125 and 250 PSIG models available
- ▶ One-piece encapsulated valve design with PTFE seats and 10 micron filter
- ▶ Ergonomic knob for improved grip
- ▶ 1/2" NPT connections
- ▶ Rear panel mountable
- ▶ Cv - 1.1

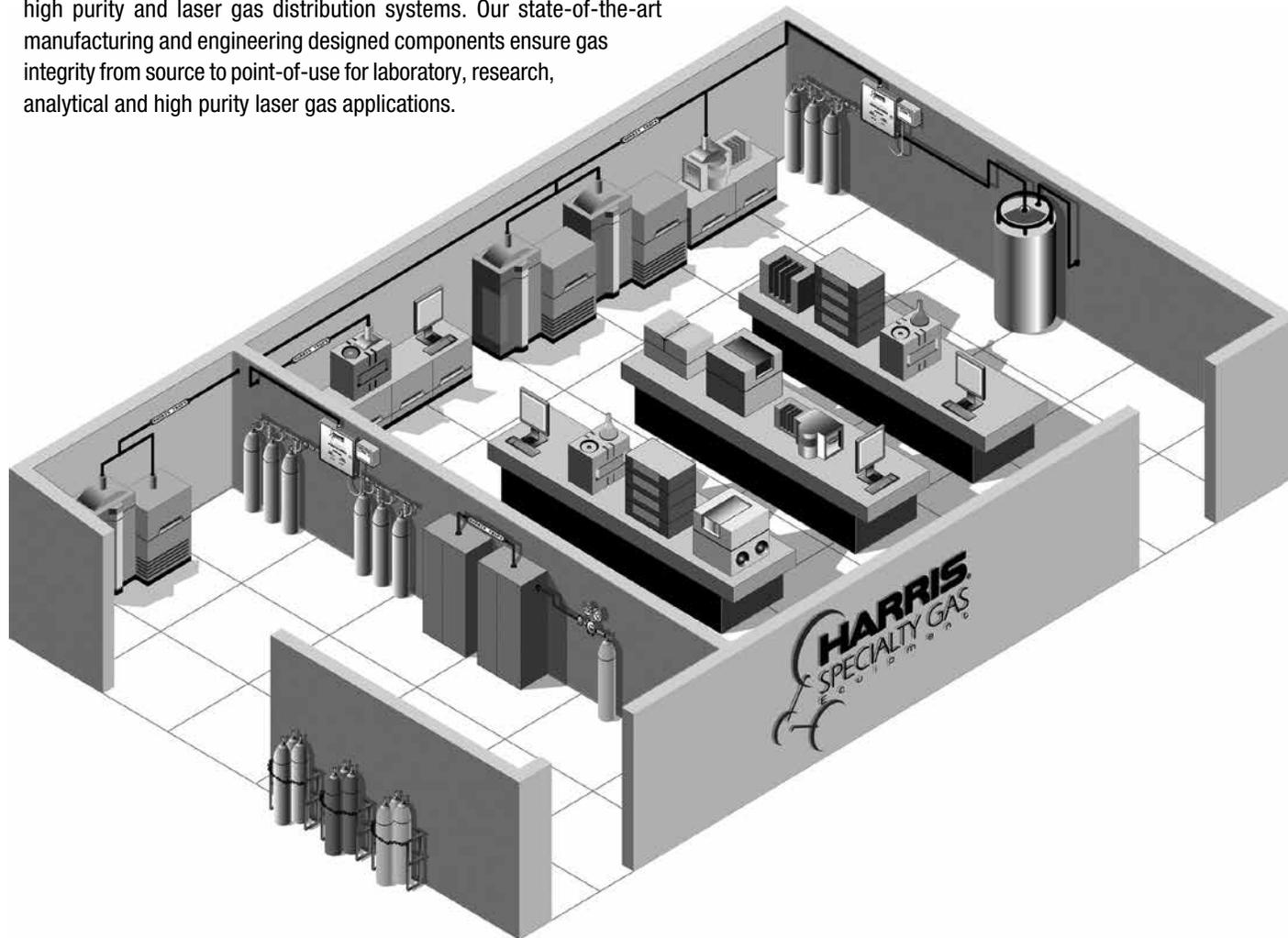
ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE DELIVERY	OUTLET GAUGE	INLET GAUGE	MAX INLET
4000959	3560-015	1-15 PSIG	30 psi/2 bar	600 PSIG	600 PSIG
4000960	3560-050	5-50 PSIG	100 psi/7 bar	600 PSIG	600 PSIG
4000961	3560-125	10-125 PSIG	200 psi/14 bar	600 PSIG	600 PSIG
4000962	3560-250	20-250 PSIG	400 psi/28 bar	600 PSIG	600 PSIG



SPECIALTY GAS / LASER GAS SYSTEMS

The Harris Products Group is a quality manufacturer of high purity, ultra-high purity and laser gas distribution systems. Our state-of-the-art manufacturing and engineering designed components ensure gas integrity from source to point-of-use for laboratory, research, analytical and high purity laser gas applications.



SG 770 Back-up System



FOR GAS
CHROMATOGRAPHY

SG 910 Mounting Station



SG 900 Switchover



FOR CO2
INCUBATORS

SG 960 Manifold



FOR CRITICAL
GAS APPLICATIONS

UNIVERSAL PREMIUM LASER START-UP KITS

Harris Universal Premium Laser Start-Up Kits provide the essential equipment needed for supplying resonator and assist gases from source to point-of-use. All premium kits contain switchover systems for resonator gases, high-flow dome-loaded regulators for the assist gases and cylinder process stations. Premium kits also include purges and "T" filters to protect laser optics.



FEATURES: PREMIUM ASSIST GAS KITS

- ▶ Two high-flow dome-loaded regulators for nitrogen and oxygen
- ▶ Two heavy duty 1/2" I.D. x 50 ft. hoses
- ▶ 90 micron "T" filters to protect laser internal components
- ▶ Commonly used fittings for easy hook-up
(Some laser models may require additional fittings sold separately.)

FEATURES: PREMIUM RESONATOR GAS KITS

- ▶ High-purity automatic switchovers with purges for each resonator gas
- ▶ 100 ft. of laser grade tubing for high-purity laser gases
- ▶ 2 micron "T" filter to protect laser optics
- ▶ Cylinder process station for switchover mounting and securing high pressure cylinders safety
(Some laser models may require additional fittings sold separately.)



* Kit shown is for premix gases. Three-gas models will have switchover manifolds for nitrogen, helium and carbon dioxide

ORDERING INFORMATION

PART NO	DESCRIPTION
4703517	Harris premium laser start-up kit, 3-gas universal
4703516	Harris premium laser start-up kit, premix universal
4703515	Universal premium assist gas start-up kit
4703518	Nitrogen only premium assist gas kit
4703514	Premium Mazak® laser start-up kit resonator and assist gas
4302676	G 600P 6-cylinder process station

UNIVERSAL BASIC LASER START-UP KITS

Harris Universal Basic Laser Start-Up Kits provide the most common equipment necessary for supplying resonator and assist gases to the laser. Basic kits contain high purity regulators for the resonator gases, high-flow dome-loaded regulators for nitrogen and oxygen assist gases. Laser grade hose is included for the resonator gas, as well as two high-capacity hoses for the assist gases.



FEATURES: BASIC ASSIST GAS KITS

- ▶ Two high-flow dome-loaded regulators for nitrogen and oxygen
- ▶ Two heavy duty 1/2" I.D. x 50 ft. hoses
- ▶ Commonly used fittings for easy hook-up
(Some laser models may require additional fittings sold separately.)

FEATURES: BASIC RESONATOR GAS KITS

- ▶ High / purity two-stage regulator for each resonator gas
- ▶ System includes block and bleed purges to protect laser optics
- ▶ 100 ft. of laser grade tubing for high purity laser gases
- ▶ Commonly used fittings for fast and easy installation
(Some laser models may require additional fittings sold separately.)



* Kit shown is for premix gases. Three-gas models will have regulators for nitrogen, helium and carbon dioxide

ORDERING INFORMATION

PART NO	DESCRIPTION
4703519	Harris basic laser start-up kit, 3-gas universal
4703522	Harris basic laser start-up kit, premix gas universal
4703521	Universal basic assist gas start-up kit



SPECIALTY GAS DISTRIBUTION

HIGH PURITY SWITCHOVER



Model SG 900 SS

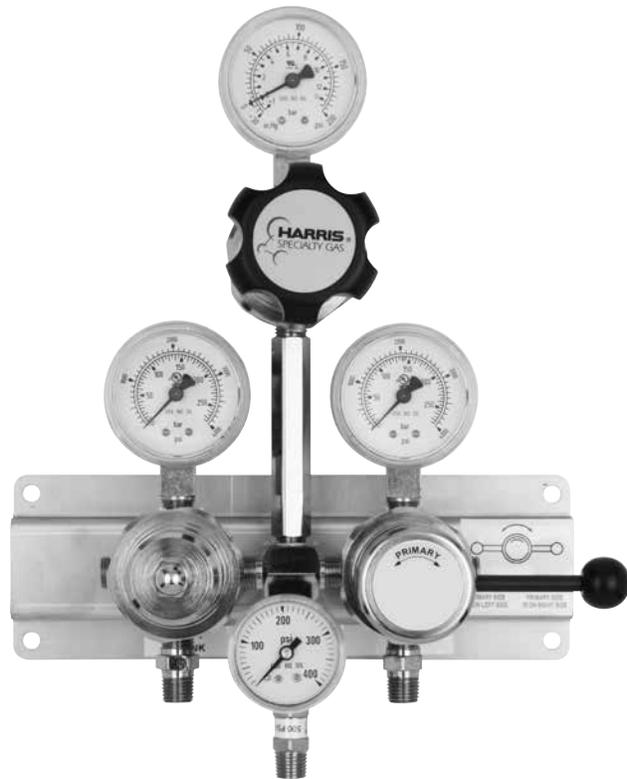
The SG 900 SS semi-automatic stainless steel barstock manifold prevents downtime by automatically switching gas supply from the primary cylinder bank to the reserve cylinder bank. The user resets the primary bank by turning the lever. Manual adjustment of the individual regulators is not required. **All systems include a line control regulator.**

FEATURES

- ▶ Wall mounting panel and brackets included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Delivery pressure: 0-125 PSIG; except acetylene (CGA 510A) 0-15 PSIG
- ▶ Inlet/outlet - 1/4" NPT
- ▶ Headers include diaphragm-type shut-off valves
- ▶ All systems include stainless steel pigtailed with check valves and stainless steel inner core
- ▶ Acetylene (CGA 510A) includes dry-type flash arrestors on pigtail end
- ▶ All pigtailed have protective armor casing for added safety

OPTIONAL ACCESSORIES

- 4302673 - G 277 Two Cylinder Process Station
- 4302675 - G 400P Four Cylinder Process Station
- 4302676 - G 600P Six Cylinder Process Station
- 4300326 - High Pressure Alarm System, 3000 PSIG Stainless Steel
- 4300327 - Low Pressure Alarm System, 400 PSIG Stainless Steel



ORDERING INFORMATION

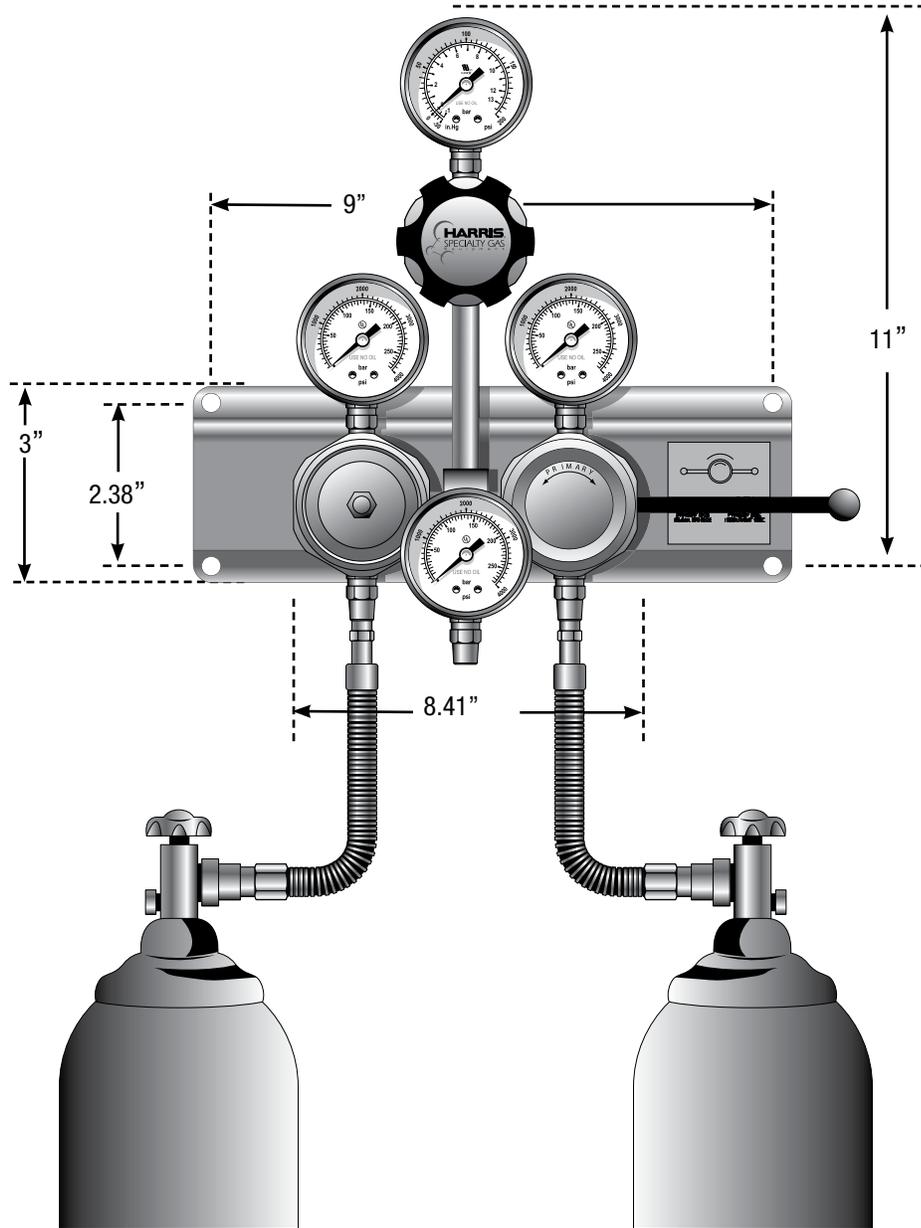
SG 900 SS	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 900 SS	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	320 - Carbon Dioxide 346 - Air (Breathing) 350 - Hydrogen 500 - Medical Mixtures 540 - Oxygen 580 - N ₂ /He/Ar 590 - Air (Industrial) 660 - Corrosive Gases 330 - Corrosive Gases
	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





900 SS TYPICAL LAYOUT



SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
900 SS (Oxy / Inert)	3000 PSIG	750 SCFH	125 PSIG
900 SS (LPG)	400 PSIG	500 SCFH	125 PSIG
900 SS (Acetylene)	400 PSIG	300 SCFH	15 PSIG



SPECIALTY GAS DISTRIBUTION

STAINLESS STEEL SWITCHOVER



Model SG 900 BR

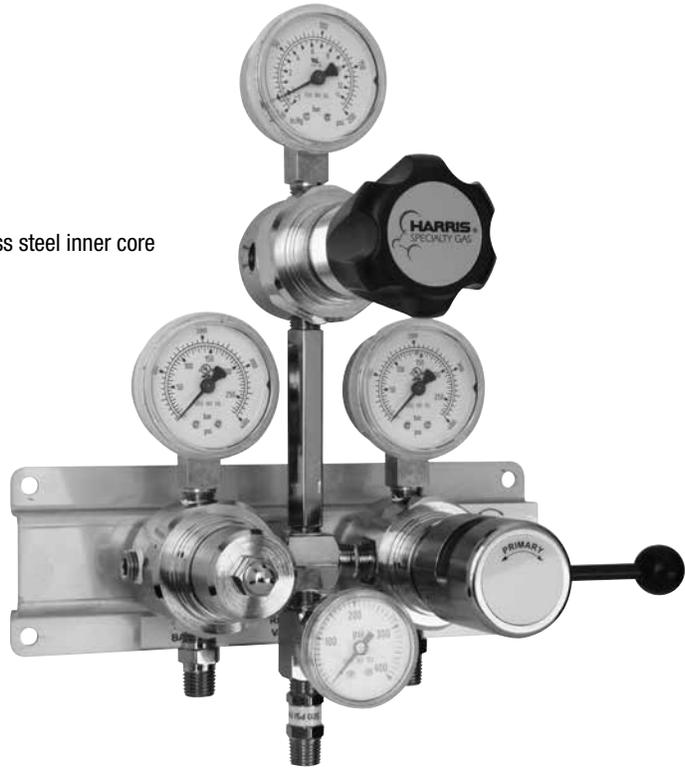
The SG 900 BR semi-automatic chrome-plated brass barstock manifold prevents downtime by automatically switching gas supply from the primary cylinder bank to the reserve cylinder bank. The user resets the primary bank by turning the lever. Manual adjustment of the individual regulators is not required. **All systems include a line control regulator.**

FEATURES

- ▶ Wall mounting panel and brackets included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Delivery pressure: 0-125 PSIG; except acetylene (CGA 510A) 0-15 PSIG
- ▶ Inlet/outlet - 1/4" NPT
- ▶ Headers include diaphragm-type shut-off valves
- ▶ All systems include stainless steel pigtails with check valves and stainless steel inner core
- ▶ Acetylene (CGA 510A) includes dry-type flash arrestors on pigtail end
- ▶ All pigtails have protective armor casing for added safety

OPTIONAL ACCESSORIES

- 4302673 - G 277 Two Cylinder Process Station
- 4302675 - G 400P Four Cylinder Process Station
- 4302676 - G 600P Six Cylinder Process Station
- 4300326 - High Pressure Alarm System, 3000 PSIG SS
- 4300327 - Low Pressure Alarm System, 400 PSIG SS
- 4300428 - Manifold Purge, Left Hand Inlet
- 4300429 - Manifold Purge, Right Hand Inlet



ORDERING INFORMATION

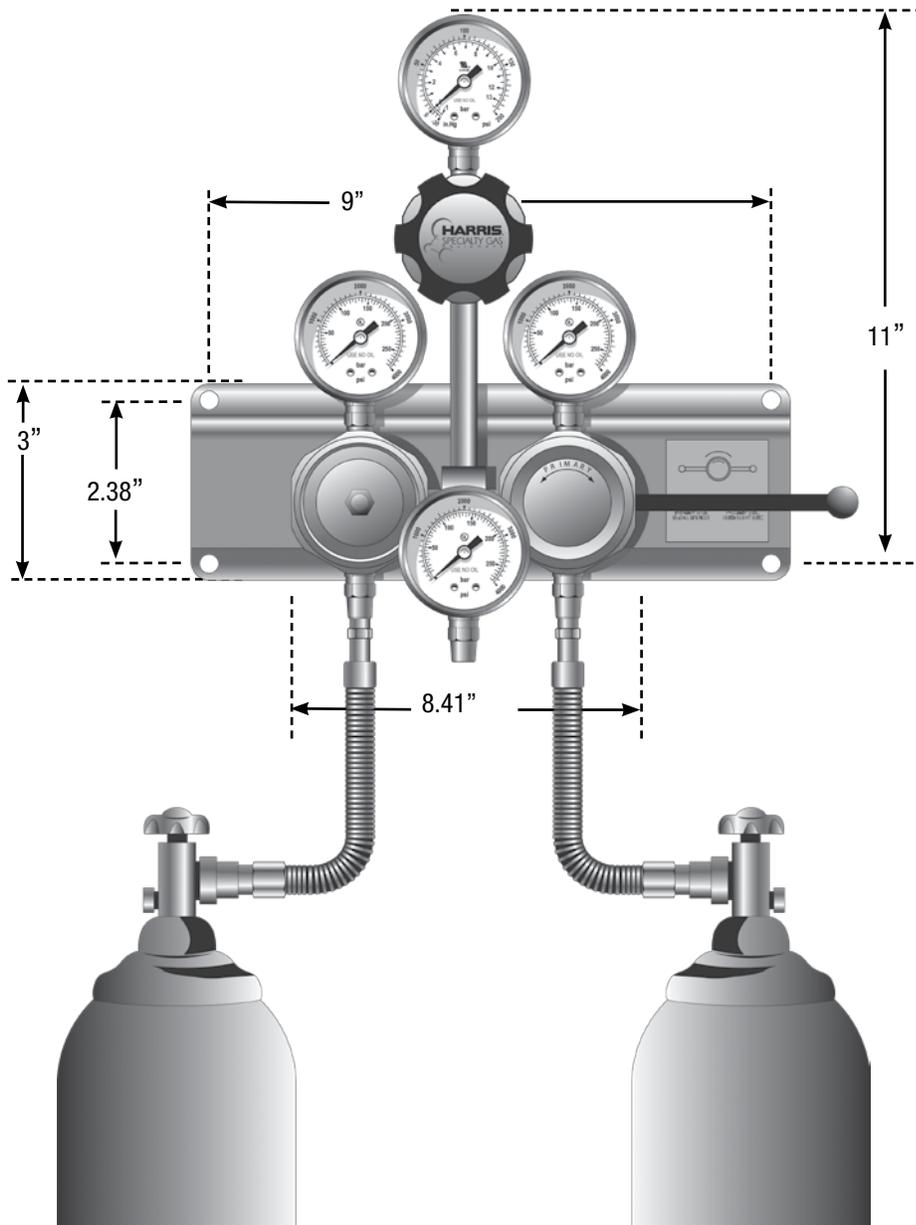
SG 900 BR	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 900 BR	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	280 - Medical Breathing Mixtures 290 - Oxidizing Mixtures 320 - Carbon Dioxide 346 - Air (Breathing) 350 - Hydrogen 510A - Acetylene 510P - LPG 540 - Oxygen 580 - N ₂ /He/Ar 590 - Air (Industrial)
	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	

CUSTOM CONFIGURATIONS
 AVAILABLE UPON REQUEST.
 CONTACT CUSTOMER SERVICE.





900 BR TYPICAL LAYOUT



SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
900 BR (Oxy / Inert)	3000 PSIG	750 SCFH	125 PSIG
900 BR (LPG)	400 PSIG	500 SCFH	125 PSIG
900 BR (Acetylene)	400 PSIG	300 SCFH	15 PSIG



SPECIALTY GAS DISTRIBUTION

HIGH FLOW AUTOMATIC SWITCHOVER



Model 260

The Model 260 is a high flow automatic switchover system designed to deliver flows up to 5500 SCFH at delivery pressures up to 500 PSIG. Systems can be used for industrial or high purity gases.

FEATURES

- ▶ Outlet line regulator; 250 and 500 PSIG models available
- ▶ One-piece encapsulated valve design with PTFE seats and 10-micron filter
- ▶ 1/2" NPT In/Out Ports
- ▶ Stainless steel panel
- ▶ 72" Pigtails w/integral check valves
- ▶ Maximum Inlet 3000 PSIG
- ▶ Body – Brass Barstock
- ▶ Bonnet – Brass Barstock
- ▶ Seat and seals - PTFE
- ▶ Diaphragms – Stainless steel
- ▶ Filter – 10 micron Nickel Plated Bronze

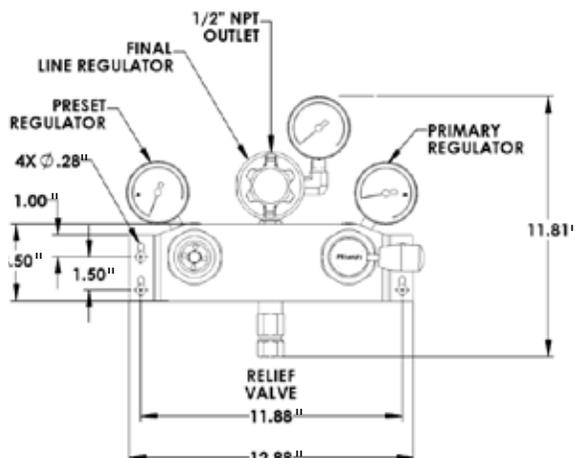
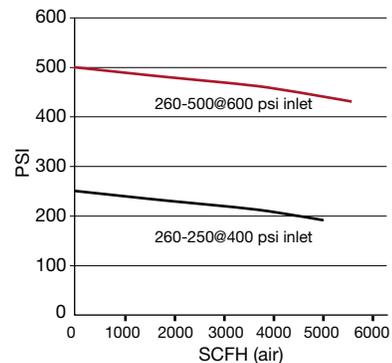


Weight: 21.3 lbs.
C_v: 0.5

ORDERING INFORMATION

PART NO.	MODEL	DELIVERY PRESSURE	GAS SERVICE
4701502	260-125-0R-0L (no pigtails)	125 PSIG	Inert, O ₂ , H ₂
4701501	260-250-0R-0L (no pigtails)	250 PSIG	Inert, O ₂ , H ₂
4701500	260-500-0R-0L (no pigtails)	500 PSIG	Inert, O ₂ , H ₂
4701508	260-250-1R72-1L72-580	250 PSIG	Ar/He/N ₂
4701524	260-500-1R72-1L72-580	500 PSIG	Ar/He/N ₂
4701525	260-250-1R72-1L72-540	250 PSIG	Oxygen
4701509	260-500-1R72-1L72-540	500 PSIG	Oxygen
4701510	260-250-1R72-1L72-590	250 PSIG	Industrial Air
4701511	260-500-1R72-1L72-590	500 PSIG	Industrial Air
4701512	260-250-1R72-1L72-346	250 PSIG	Medical Air
4701513	260-500-1R72-1L72-346	500 PSIG	Medical Air
4701514	260-250-1R72-1L72-350	250 PSIG	Hydrogen, Methane
4701515	260-500-1R72-1L72-350	500 PSIG	Hydrogen, Methane

FLOW DATA



CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





COMPACT HIGH PURITY SWITCHOVER

Model SG 905 BR / SG 905 SS

The SG 905 BR / SG 905 SS semi-automatic high purity switchover prevents downtime by automatically switching gas supply from the primary cylinder bank to the reserve cylinder bank. The user resets the primary bank by turning the knob. Manual adjustment of the individual regulators is not required. **All systems include a line control regulator.**

FEATURES

- ▶ Wall mounting panel and brackets included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Delivery pressure: 0-125 PSIG; except acetylene (CGA 510A) 0-15 PSIG
- ▶ Inlet/outlet - 1/4" NPT
- ▶ Headers include diaphragm-type shut-off valves
- ▶ All systems include stainless steel pigtailed with check valves and stainless steel inner core
- ▶ Acetylene (CGA 510A) includes dry-type flash arrestors on pigtail end
- ▶ All pigtailed have protective armor casing for added safety

OPTIONAL ACCESSORIES

- 4302673 - G 277 Two Cylinder Process Station
- 4302675 - G 400P Four Cylinder Process Station
- 4302676 - G 600P Six Cylinder Process Station
- 4300326 - High Pressure Alarm System, 3000 PSIG Brass
- 4300327 - Low Pressure Alarm System, 400 PSIG Brass



SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
905 (Oxy / Inert)	3000 PSIG	750 SCFH	125 PSIG
905 (LPG)	400 PSIG	500 SCFH	125 PSIG
905 (Acetylene)	400 PSIG	300 SCFH	15 PSIG

ORDERING INFORMATION

SG 905 BR / SG 905 SS	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 905 BR (Chrome Plated Brass) SG 905 SS (316L Stainless Steel)	24" Pigtailed 1R 2R 3R 4R	24" Pigtailed 1L 2L 3L 4L	320 - Carbon Dioxide 346 - Air (Breathing) 350 - Hydrogen 500 - Medical Mixtures 540 - Oxygen 580 - N ₂ /He/Ar 590 - Air (Industrial) 660 - Corrosive Gases (905 SS only) 330 - Corrosive Gases (905 SS only)
	36" Pigtailed 1R36 2R36 3R36 4R36	36" Pigtailed 1L36 2L36 3L36 4L36	

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.



SPECIALTY GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER



Model SG 960 BR

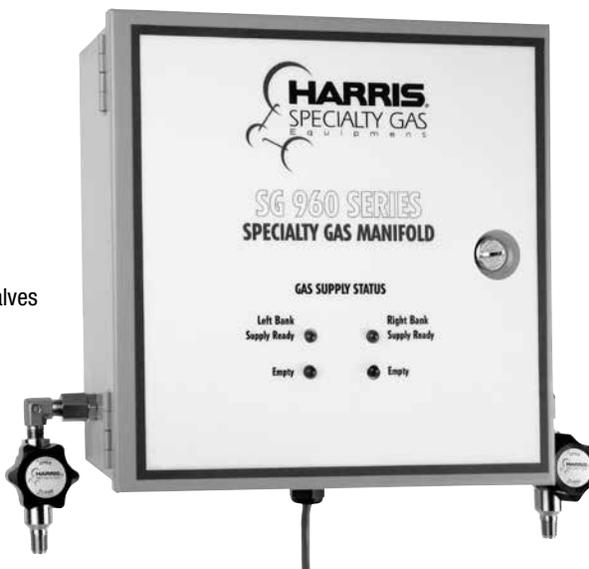
The SG 960 BR is a fully automatic switchover manifold for high purity gases up to 3000 PSIG. The SG 960 BR can be used with high purity specialty gases, laser gases or industrial gases. Applications include laser resonator gases, GC and MS analytical instruments, process analytical equipment and applications requiring 24/7 monitoring.

FEATURES

- ▶ Fully automatic operation, no knob or levers to turn
- ▶ Fully programmable switchover pressure
- ▶ Separate control box, mechanical box and remote alarm allows for flexibility for installation and maintenance
- ▶ Modular system designed for expansion
- ▶ Standard remote visual alarm
- ▶ Manifold outlet: 1/2" FNPT
- ▶ 24" or 36" flexible all stainless steel pigtailed with CGA integral check valve
- ▶ 1/2" brass, silver brazed headers w/ diffusion resistant diaphragm header valves

OPTIONAL ACCESSORIES

- 4302112 - Cable Extension 100 ft.
- 4302113 - Cable Extension 25 ft.
- 4302114 - Alarm Cable Extension 100 ft.
- 4302115 - Alarm Cable Extension 25 ft.
- 4302104 - Audio/Visual Alarm, Remote for SG 960

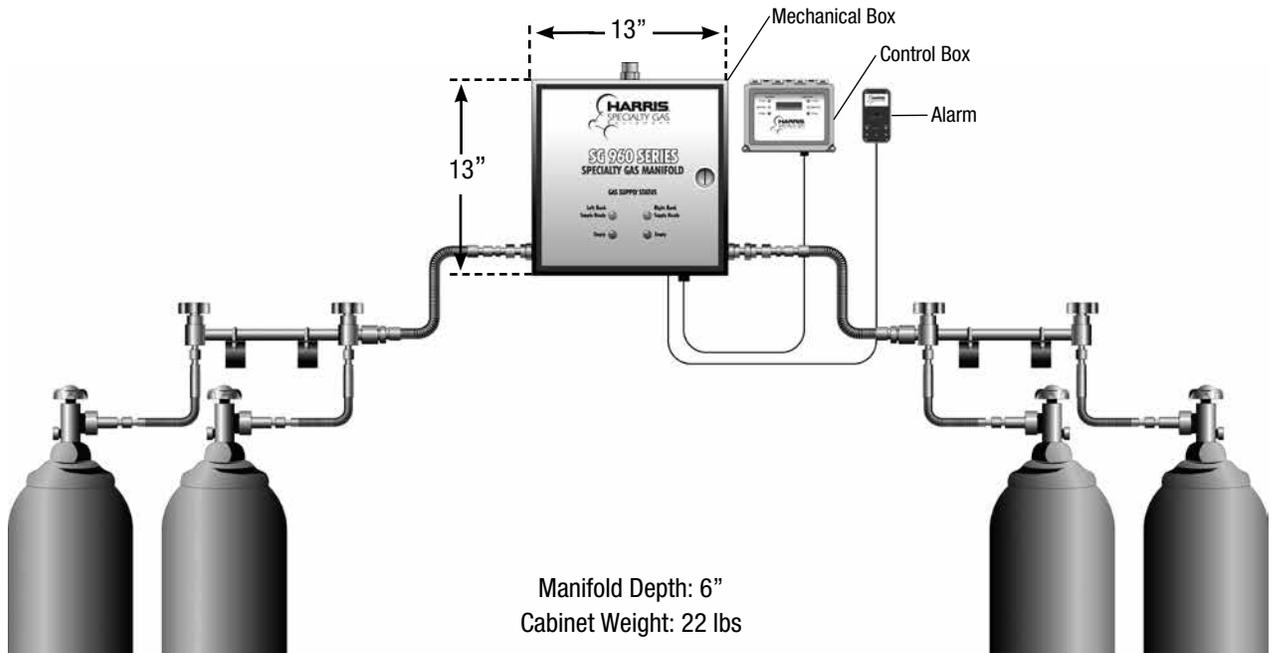


ORDERING INFORMATION

SG 960 BR	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 960 BR	24" Pigtailed 1R 2R 3R 4R	24" Pigtailed 1L 2L 3L 4L	320 - Carbon Dioxide 326 - Nitrous Oxide 346 - Air (Breathing) 350H - Hydrogen 540 - Oxygen 580 - Argon/Nitrogen 590 - Air(Industrial)
	36" Pigtailed 1R36 2R36 3R36 4R36	36" Pigtailed 1L36 2L36 3L36 4L36	

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





REPLACEMENT PARTS

- 4302101 - Mechanical Box
- 4302100 - Control Box

920 SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
960 BR	3000 PSIG	1200 SCFH	20-225 PSIG
960 BR (CO ₂ / N ₂ O)	3000 PSIG	35 SCFH	20-225 PSIG



SPECIALTY GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER



Model SG 960 SS

The SG 960 SS is a fully automatic stainless steel switchover manifold for high purity or corrosive gases up to 3000 PSIG. The SG 960 SS can be used with high purity specialty gases, mildly corrosive and industrial gases. The SG 960 SS can also be used with cryogenic liquid-type cylinders. Applications include laser resonator gases, GC and MS analytical instruments, process analytical equipment and applications requiring 24/7 monitoring.

FEATURES

- ▶ Fully automatic operation, no knob or levers to turn
- ▶ Fully programmable switchover pressure
- ▶ Separate control box, mechanical box and remote alarm allows for flexibility for installation and maintenance
- ▶ Modular system designed for expansion
- ▶ Standard remote visual alarm
- ▶ Manifold outlet: 1/4" FNPT
- ▶ 24" or 36" flexible all stainless steel pigtailed with CGA integral check valve
- ▶ 1/2" stainless steel TIG welded headers



OPTIONAL ACCESSORIES

- 4302112 - Cable Extension 100 ft.
- 4302113 - Cable Extension 25 ft.
- 4302114 - Alarm Cable Extension 100 ft.
- 4302115 - Alarm Cable Extension 25 ft.
- 4302104 - Audio/Visual Alarm, Remote for SG 960

ORDERING INFORMATION

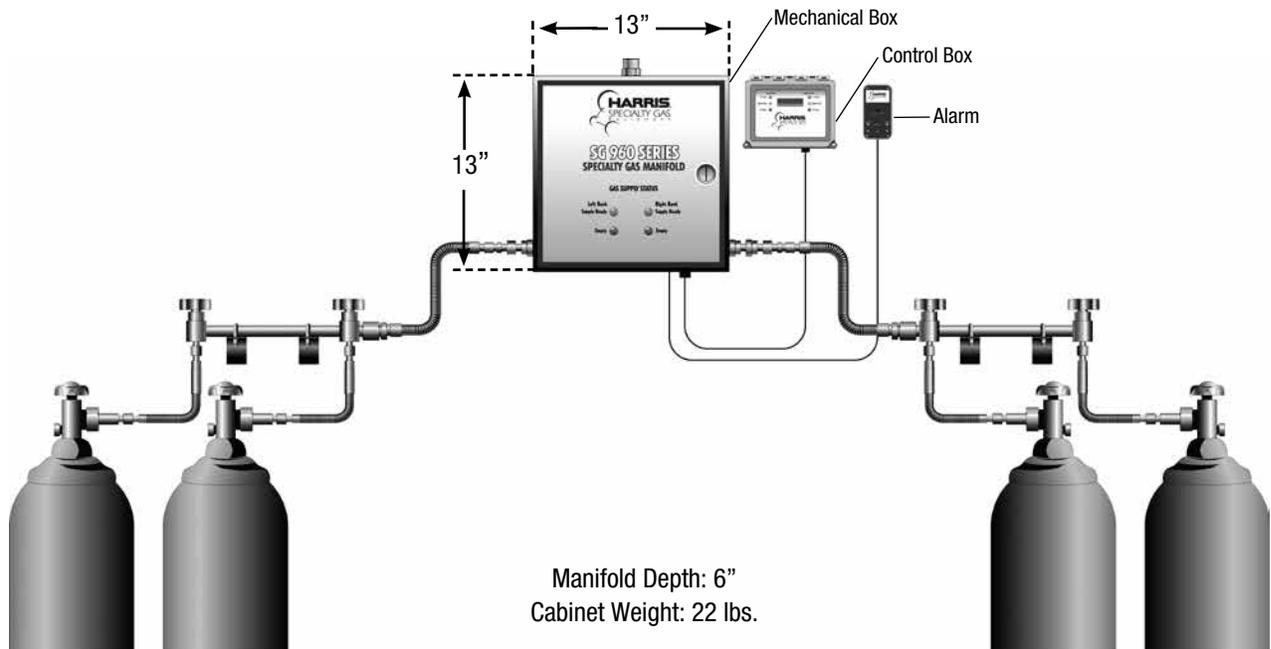
SG 960 SS	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (#CYLINDERS)	GAS SERVICE
SG 960 SS	24" Pigtailed 1R 2R 3R 4R	24" Pigtailed 1L 2L 3L 4L	240 - Anhydrous Ammonia 320 - Carbon Dioxide 326 - Nitrous Oxide 330 - Corrosive Gases 346 - Air (Breathing) 350H - Hydrogen 540 - Oxygen 580 - Argon/Nitrogen 590 - Air (Industrial) 660 - Corrosive Gases 705 - Corrosive Gases
	36" Pigtailed 1R36 2R36 3R36 4R36	36" Pigtailed 1L36 2L36 3L36 4L36	

CUSTOM CONFIGURATIONS
 AVAILABLE UPON REQUEST.
 CONTACT CUSTOMER SERVICE.





960 SS TYPICAL LAYOUT



REPLACEMENT PARTS

- 4301400 - Mechanical Box
- 4302100 - Control Box

960 SS SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
960 SS	3000 PSIG	1200 SCFH	20-225 PSIG
960 SS (CO ₂ / N ₂ O)	3000 PSIG	35 SCFH	20-225 PSIG



SPECIALTY GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER



Model SG 960 LE

The SG 960 LE is a fully automatic switchover manifold for high purity gases up to 500 PSIG. The SG 960 LE is designed for gas withdrawal from cryogenic liquid-type cylinders. Applications include laser resonator gases, GC and MS analytical instruments, process analytical equipment and applications requiring 24/7 monitoring.

FEATURES

- ▶ Fully automatic operation, no knob or levers to turn
- ▶ Fully programmable switchover pressure
- ▶ Separate control box, mechanical box and remote alarm allows for flexibility for installation
- ▶ Modular system designed for expansion
- ▶ Standard remote visual alarm
- ▶ Manifold outlet: 1/2" FNPT
- ▶ 72" flexible all stainless steel pigtails with CGA integral check valve
- ▶ 1/2" brass, silver brazed headers
- ▶ Economizer circuit

OPTIONAL ACCESSORIES

- 4302112 - Cable Extension 100 ft.
- 4302113 - Cable Extension 25 ft.
- 4302114 - Alarm Cable Extension 100 ft.
- 4302115 - Alarm Cable Extension 25 ft.
- 4302104 - Audio/Visual Alarm, Remote for SG 960



ORDERING INFORMATION

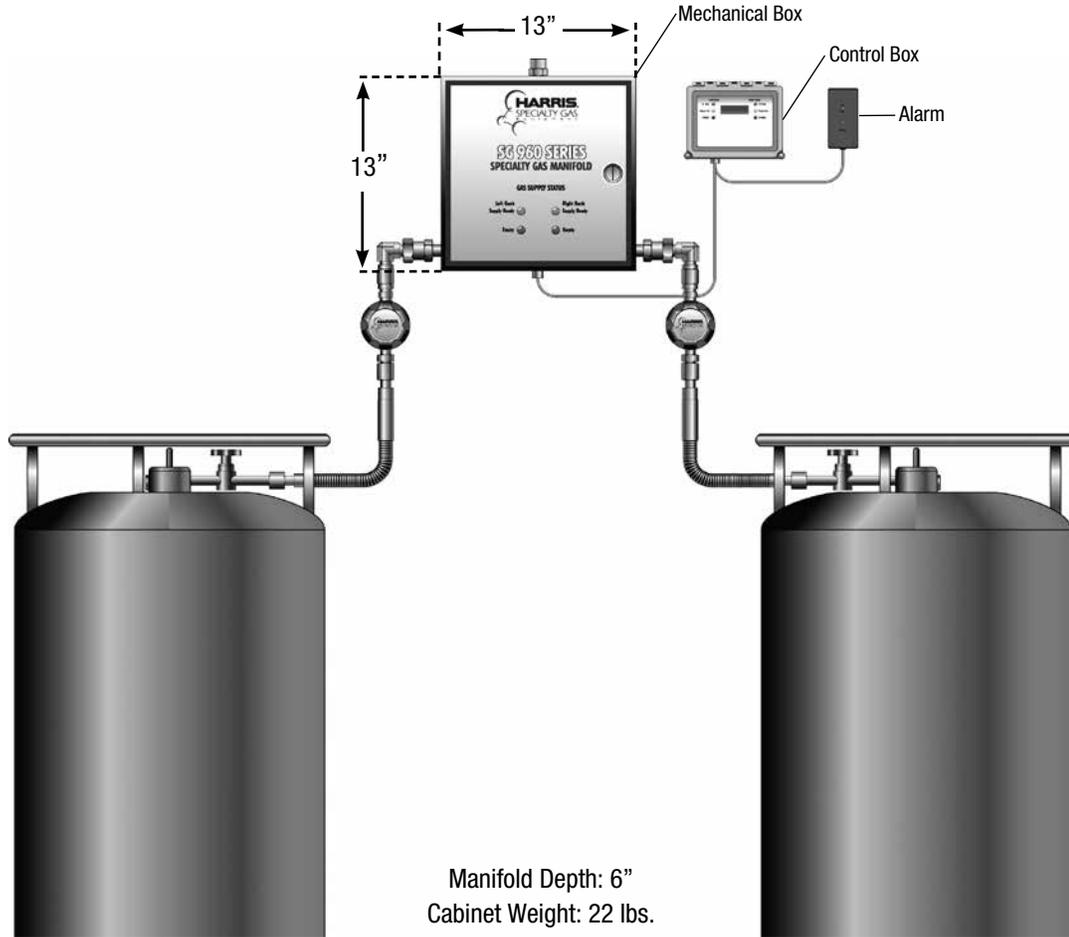
SG 960 LE	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 960 LE	72" Pigtails 1R 72 2R 72	72" Pigtails 1L 72 2L 72	320 - Carbon Dioxide 540 - Oxygen 580 - Argon/Nitrogen

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





960 LE TYPICAL LAYOUT



REPLACEMENT PARTS

4302103 - Mechanical Box

4302100 - Control Box

960 LE SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
960 LE	500 PSIG	1 X 1 Systems: 350 SCFH (110 SCFH for CO ₂ & N ₂ O)	20-225 PSIG
960 LE	500 PSIG	2 X 2 Systems: 525 SCFH (165 SCFH for CO ₂ & N ₂ O)	20-225 PSIG



SPECIALTY GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER



Model SG 960 LAM

The SG 960 LAM is a fully automatic switchover manifold for high purity gases up to 3000 PSIG. The SG 960 LAM is used for applications with higher delivery pressures up to 400 PSIG. Applications include laser assist gases, GC and MS analytical instruments, process analytical equipment and applications requiring 24/7 monitoring.

FEATURES

- ▶ Fully automatic operation, no knob or levers to turn
- ▶ Fully programmable switchover pressure
- ▶ Separate control box, mechanical box and remote alarm allows for flexibility for installation
- ▶ Modular system designed for expansion
- ▶ Manifold outlet: 1/2" FNPT
- ▶ 72" flexible all stainless steel pigtails with CGA integral check valve

OPTIONAL ACCESSORIES

- 4302112 - Cable Extension 100 ft.
- 4302113 - Cable Extension 25 ft.
- 4302114 - Alarm Cable Extension 100 ft.
- 4302115 - Alarm Cable Extension 25 ft.
- 4302104 - Audio/Visual Alarm, Remote for SG 960



ORDERING INFORMATION

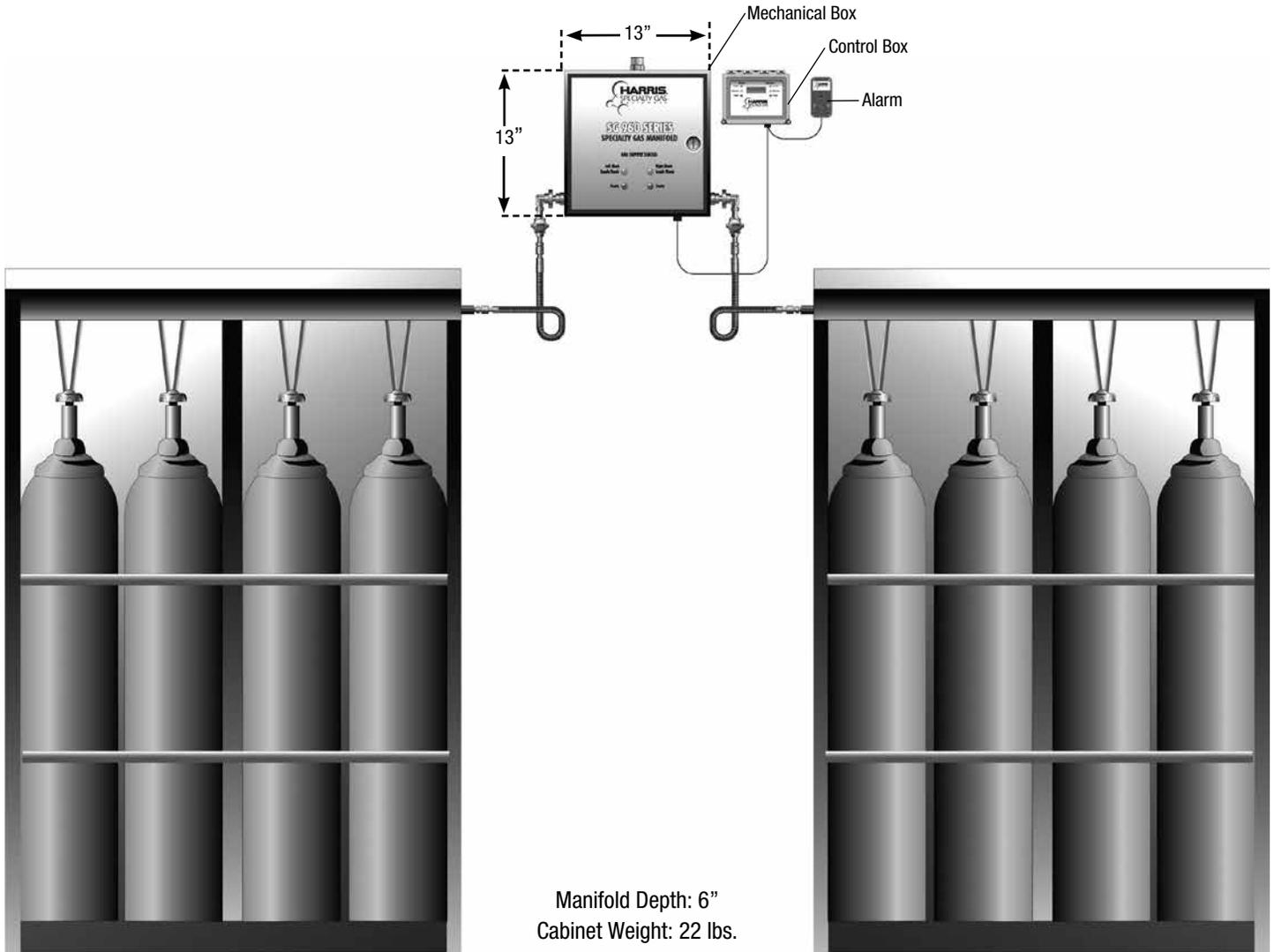
SG 960 LAM	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# CYLINDERS)	LEFT HEADER (# CYLINDERS)	GAS SERVICE
SG 960 LAM	72" Pigtails 1R 72	72" Pigtails 1L 72	540 - Oxygen 580 - Argon/Nitrogen

CUSTOM CONFIGURATIONS
AVAILABLE UPON REQUEST.
CONTACT CUSTOMER SERVICE.





960 LAM TYPICAL LAYOUT



REPLACEMENT PARTS

4302111 - Mechanical Box

4302134 - Control Box

960 LAM SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
960 LAM	3000 PSIG	3000 SCFH	0-400 PSIG



SPECIALTY GAS DISTRIBUTION

REGULATOR MOUNTING STATION



Model SG 910 BR

The SG 910 brass single regulator mounting station can be ordered one or two cylinders. A variety of outlet regulators is available based on delivery pressure and material requirements.



FEATURES

- ▶ Wall bracket included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Includes 36" stainless steel lined pigtail with CGA integral check valve



(Shown with Model 721 regulator (sold separately))

ORDERING INFORMATION

1 CYLINDER

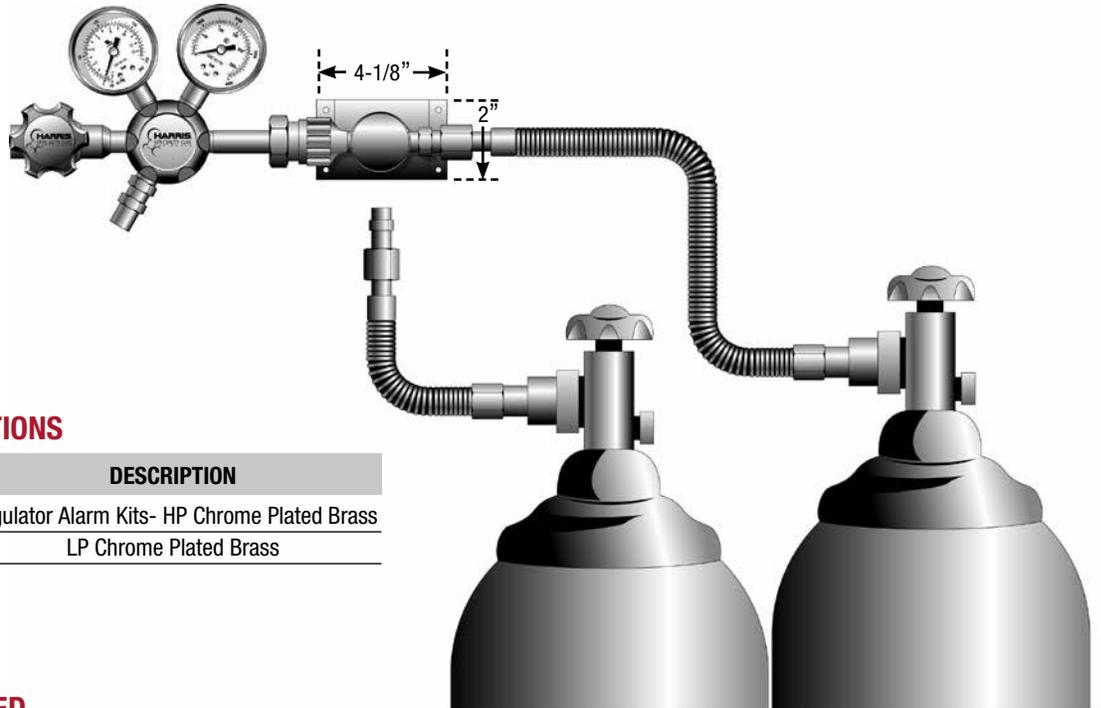
PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
4700465	910BR-1-320	CGA 320 - Carbon Dioxide	4702814
4701190	910BR-1-326	Nitrous Oxide	4702852
4700466	910BR-1-346	CGA 346 - Air (Breathing)	4702815
4700467	910BR-1-350	CGA 350 - Hydrogen	4702816
4700468	910BR-1-510	CGA 510 - Acetylene	4702817
4700469	910BR-1-540	CGA 540 - Oxygen	4702813
4700470	910BR-1-580	CGA 580 - N ₂ /He/Ar	4702812
4700471	910BR-1-590	CGA 590 - Air (Industrial)	4702818

2 CYLINDER

PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
4700472	910BR-2-320	CGA 320 - Carbon Dioxide	4702830
4700473	910BR-2-346	CGA 346 - Air (Breathing)	4702831
4700474	910BR-2-350	CGA 350 - Hydrogen	4702832
4700475	910BR-2-510	CGA 510 - Acetylene	4702833
4700476	910BR-2-540	CGA 540 - Oxygen	4702829
4700477	910BR-2-580	CGA 580 - N ₂ /He/Ar	4702828
4700478	910BR-2-590	CGA 590 - Air (Industrial)	4702834



910 BR TYPICAL LAYOUT



RELATED OPTIONS

PART NO.	DESCRIPTION
4300424	Regulator Alarm Kits- HP Chrome Plated Brass
4300425	LP Chrome Plated Brass

RECOMMENDED OUTLET REGULATOR ORDERING INFORMATION

Model 721 & Model 722
High Purity - Brass Barstock Regulators



Model 721
Single Stage Regulator w/ Diaphragm
Valve and Mounting Station

PART NO.	DELIVERY PSIG
721-015-CGA-B-H	0-15
721-050-CGA-B-H	0-50
721-125-CGA-B-H	0-125
721-250-CGA-B-H	0-250
721-500-CGA-B-H	0-500



Model 722
Two Stage Regulator w/ Diaphragm
Valve and Mounting Station

PART NO.	DELIVERY PSIG
722-015-CGA-B-H	0-15
722-050-CGA-B-H	0-50
722-125-CGA-B-H	0-125
722-250-CGA-B-H	0-250
722-500-CGA-B-H	0-500



SPECIALTY GAS DISTRIBUTION

REGULATOR MOUNTING STATION



Model SG 910 SS

The SG 910 stainless steel single regulator mounting station can be ordered for one or two cylinders. A variety of outlet regulators is available based on delivery pressure and material requirements.



FEATURES

- ▶ Wall bracket included
- ▶ Maximum inlet pressure 3000 PSIG
- ▶ Includes 36" all stainless steel pigtail with stainless steel CGA and integral check valve



(Shown with Model 741 regulator (sold separately))

ORDERING INFORMATION

1 CYLINDER

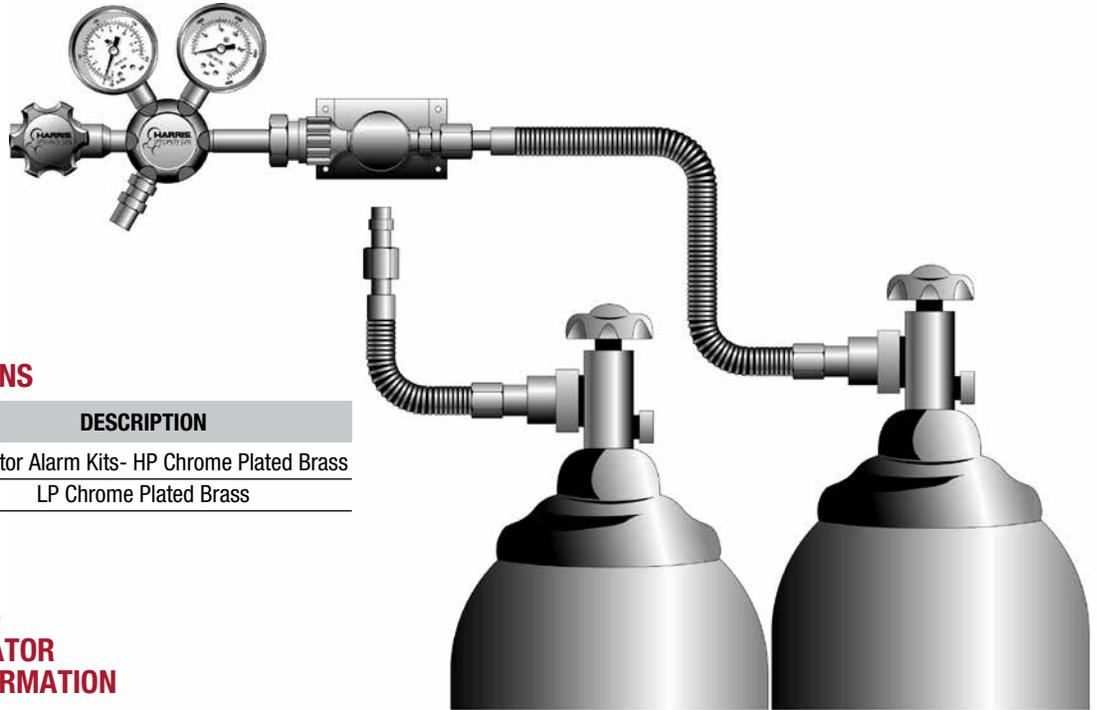
PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
4700480	910SS-1-320	CGA 320-Carbon Dioxide	4702819
4700494	910SS-1-330	CGA 330	4702820
4700481	910SS-1-346	CGA 346- Air (Breathing)	4702821
4700482	910SS-1-350	CGA 350-Hydrogen	4702822
4700483	910SS-1-510	CGA 510-Acetylene	4702823
4700484	910SS-1-540	CGA 540-Oxygen	4702824
4700485	910SS-1-580	CGA 580-N ₂ /He/Ar	4702825
4700486	910SS-1-590	CGA 590-Air (Industrial)	4702826
4700495	910SS-1-660	CGA 660	4702827

2 CYLINDER

PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
4700487	910SS-2-320	CGA 320-Carbon Dioxide	4702835
4700496	910SS-2-330	CGA 330	4702836
4700488	910SS-2-346	CGA 346-Air (Breathing)	4702837
4700489	910SS-2-350	CGA 350-Hydrogen	4702838
4700490	910SS-2-510	CGA 510-Acetylene	4702839
4700491	910SS-2-540	CGA 540-Oxygen	4702840
4700492	910SS-2-580	CGA 580-N ₂ /He/Ar	4702841
4700493	910SS-2-590	CGA 590-Air (Industrial)	4702842
4700497	910SS-2-660	CGA 660	4702843



910 SS TYPICAL LAYOUT



RELATED OPTIONS

PART NO.	DESCRIPTION
4300426	Regulator Alarm Kits- HP Chrome Plated Brass
4300427	LP Chrome Plated Brass

RECOMMENDED OUTLET REGULATOR ORDERING INFORMATION

Model 741 & Model 742
High Purity - Stainless Steel Regulators

- ▶ Stainless steel barstock bodies
- ▶ One-piece encapsulated seat
- ▶ Stainless steel diaphragm
- ▶ Cv = Single stage .08 - Two stage .06



Model 741
Single Stage Regulator w/ Diaphragm
Valve and Mounting Station

PART NO.	DELIVERY PSIG
741-015-CGA-A-G	0-15
741-050-CGA-A-G	0-50
741-125-CGA-A-G	0-125
741-250-CGA-A-G	0-250
741-500-CGA-A-G	0-500



Model 742
Two Stage Regulator w/ Diaphragm
Valve and Mounting Station

PART NO.	DELIVERY PSIG
742-015-CGA-A-G	0-15
742-050-CGA-A-G	0-50
742-125-CGA-A-G	0-125
742-250-CGA-A-G	0-250
742-500-CGA-A-G	0-500



SPECIALTY GAS DISTRIBUTION

GENERATOR BACK-UP PANEL

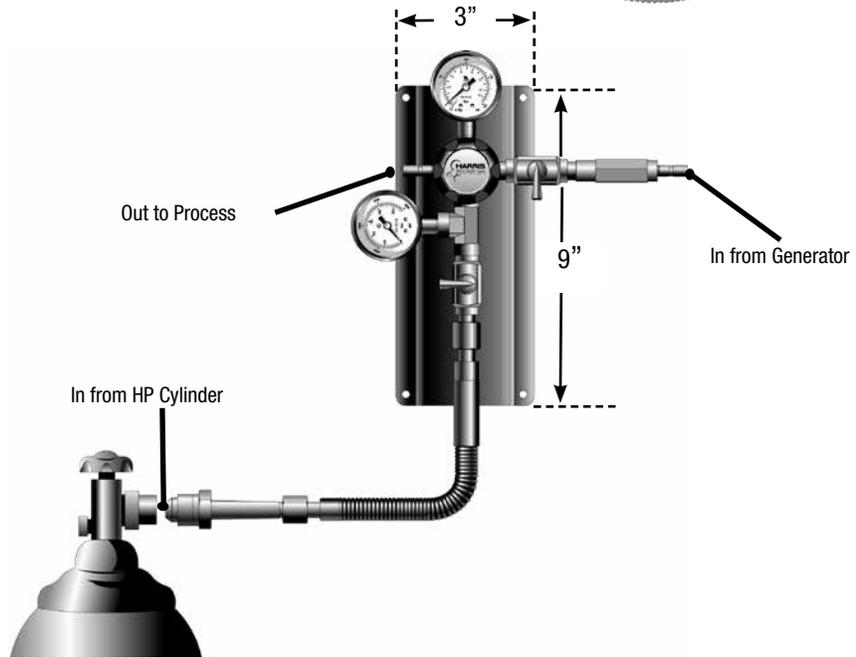


Model SG 770

Model SG 770 provides a continuous backup supply of gas in the event of generator failure or loss of power. The system automatically switches to a back-up cylinder of gas when the generator supply pressure drops below a preset value. The process will automatically reverse when the gas pressure supplied by the generator returns to a normal level.

FEATURES

- ▶ 0-125 PSIG line regulator
- ▶ High leak integrity diaphragm isolation valves
- ▶ Flexible hose for attaching to the cylinder
- ▶ Includes 36" flexible pigtail with integrated reverse flow check valve
- ▶ 1/4" turn isolation shut-off valves included
- ▶ 1/4" Swagelok® outlet connection
- ▶ 1/4" Swagelok® inlet connection with reverse flow check valve
- ▶ Available for air, nitrogen or hydrogen gas service
- ▶ Maximum inlet pressure – 3000 PSIG
- ▶ Required pressure differential 15-20 PSIG
- ▶ Maximum flow 700 SCFH Air @ 90 PSIG
- ▶ PTFE seals and seat
- ▶ Diaphragm-type shut-off valves



ORDERING INFORMATION

PART NO.	MODEL NO.	GAS SERVICE
4702981	SG 770-350	Hydrogen
4702982	SG 770-580	Nitrogen
4702983	SG 770-590	Air (Industrial)
4702984	SG 770-346	Air (Breathing)

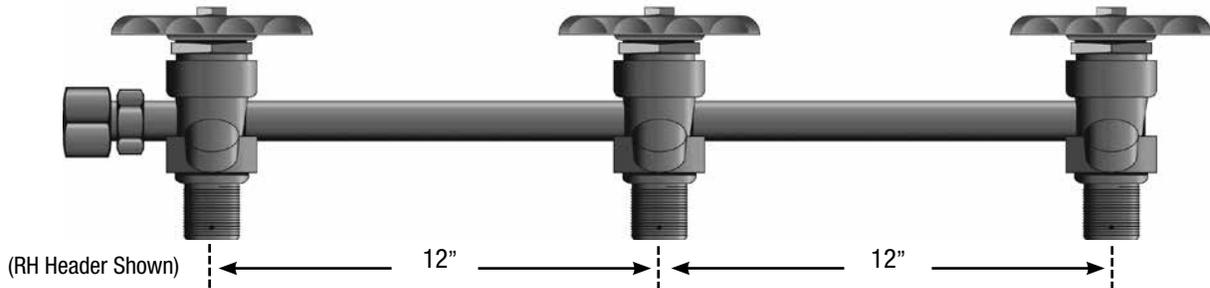
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High Purity Manifold Headers

- ▶ 90° connections for easy connection
- ▶ Silver-brazed brass or TIG welded stainless steel connection
- ▶ Outlet connection CGA 580 female
- ▶ Header valves are diaphragm-style with CGA 346 inlet connections



Three Header Assembly



ADJUSTABLE WALL BRACKETS

PART NO.	DESCRIPTION
9103308	90°, Black, includes "U"-bolt and mounting clamp

HEADER EXTENSION

BRASS HEADERS

PART NO.	DESCRIPTION	NO. OF CYLINDERS
9103376	Station Manifold w/Station Valves and Outlet Adaptor Brass RH	2
9103377	Station Manifold w/Station Valves and Outlet Adaptor Brass LH	2
9103378	Station Manifold w/Station Valves and Outlet Adaptor Brass RH	3
9103379	Station Manifold w/Station Valves and Outlet Adaptor Brass LH	3
9103380	Station Manifold w/Station Valves and Outlet Adaptor Brass RH	4
9103381	Station Manifold w/Station Valves and Outlet Adaptor Brass LH	4
9103382	Station Manifold w/Station Valves and Outlet Adaptor Brass RH	5
9103383	Station Manifold w/Station Valves and Outlet Adaptor Brass LH	5

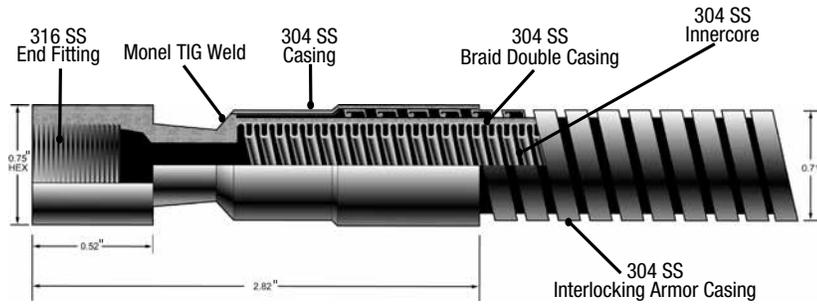
STAINLESS STEEL HEADERS

PART NO.	DESCRIPTION	NO. OF CYLINDERS
9103384	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel RH	2
9103385	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel LH	2
9103386	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel RH	3
9103387	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel LH	3
9103388	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel RH	4
9103389	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel LH	4
9103390	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel RH	5
9103391	Station Manifold w/Station Valves and Outlet Adaptor Stainless Steel LH	5



SPECIALTY GAS DISTRIBUTION

PIGTAIL CROSS SECTIONAL VIEW



PIGTAILS - All Harris specialty gas pigtails have armor casing and Stainless Steel lining

REPLACEMENT PIGTAILS

REPLACEMENT PIGTAILS - PIGTAILS WITH NO CGA

PART NO. DESCRIPTION

Stainless Steel 1/4" FNPT x 1/4" FNPT

9005793	2' Armor Case Stainless Steel 1/4" FNPT x 1/4" FNPT
9005794	3' Armor Case Stainless Steel 1/4" FNPT x 1/4" FNPT
9005795	6' Armor Case Stainless Steel 1/4" FNPT x 1/4" FNPT

PART NO. DESCRIPTION

PTFE Lined 1/4" FNPT x 1/4" FNPT

9005799	4' Armor Case PTFE Lined 1/4" FNPT x 1/4" FNPT
9005800	2' Armor Case PTFE Lined 1/4" FNPT x 1/4" FNPT
9005801	3' Armor Case PTFE Lined 1/4" FNPT x 1/4" FNPT
9005807	6' Armor Case PTFE Lined 1/4" FNPT x 1/4" FNPT

REPLACEMENT PIGTAILS - 24" PIGTAILS WITH CGA

PART NO. DESCRIPTION

24" Stainless Steel 1/4" FNPT x Brass CGA with CV

9103410	PIGTAIL - ASY, 2' CGA 320
9103411	PIGTAIL - ASY, 2' CGA 326
9103412	PIGTAIL - ASY, 2' CGA 346
9103413	PIGTAIL - ASY, 2' CGA 350
9103414	PIGTAIL - ASY, 2' CGA 540
9103415	PIGTAIL - ASY, 2' CGA 580
9103416	PIGTAIL - ASY, 2' CGA 590

PART NO. DESCRIPTION

24" Stainless Steel 1/4" FNPT x SS CGA with CV

9103441	PIGTAIL - ASY, 2' CGA 320 SS
9103442	PIGTAIL - ASY, 2' CGA 326 SS
9103443	PIGTAIL - ASY, 2' CGA 346 SS
9103444	PIGTAIL - ASY, 2' CGA 350 SS
9103445	PIGTAIL - ASY, 2' CGA 500 SS
9103446	PIGTAIL - ASY, 2' CGA 540 SS
9103447	PIGTAIL - ASY, 2' CGA 580 SS
9103448	PIGTAIL - ASY, 2' CGA 590 SS
9103479	PIGTAIL - ASY, 2' CGA 240 SS
9103480	PIGTAIL - ASY, 2' CGA 330 SS
9103481	PIGTAIL - ASY, 2' CGA 660 SS
9103482	PIGTAIL - ASY, 2' CGA 705 SS

REPLACEMENT PIGTAILS - 36" PIGTAILS WITH CGA

PART NO. DESCRIPTION

36" Stainless Steel 1/4" FNPT x Brass CGA with CV

9103417	PIGTAIL - ASY, 3' CGA 320
9103418	PIGTAIL - ASY, 3' CGA 326
9103419	PIGTAIL - ASY, 3' CGA 346
9103420	PIGTAIL - ASY, 3' CGA 350
9103421	PIGTAIL - ASY, 3' CGA 540
9103422	PIGTAIL - ASY, 3' CGA 580
9103423	PIGTAIL - ASY, 3' CGA 590

PART NO. DESCRIPTION

36" Stainless Steel 1/4" FNPT x SS CGA with CV

9103449	PIGTAIL - ASY, 3' CGA 320 SS
9103450	PIGTAIL - ASY, 3' CGA 326 SS
9103451	PIGTAIL - ASY, 3' CGA 346 SS
9103452	PIGTAIL - ASY, 3' CGA 350 SS
9103453	PIGTAIL - ASY, 3' CGA 500 SS
9103454	PIGTAIL - ASY, 3' CGA 540 SS
9103455	PIGTAIL - ASY, 3' CGA 580 SS
9103456	PIGTAIL - ASY, 3' CGA 590 SS
9103483	PIGTAIL - ASY, 3' CGA 240 SS
9103484	PIGTAIL - ASY, 3' CGA 330 SS
9103485	PIGTAIL - ASY, 3' CGA 660 SS
9103486	PIGTAIL - ASY, 3' CGA 705 SS

REPLACEMENT PIGTAILS

REPLACEMENT PIGTAILS - 72" PIGTAILS WITH CGA

PART NO.	DESCRIPTION
72" Stainless Steel 1/4" FNPT x Brass CGA with CV	
9101996	PIGTAIL - ASY, 6' CGA 320
9101997	PIGTAIL - ASY, 6' CGA 540
9101998	PIGTAIL - ASY, 6' CGA 580

REPLACEMENT PIGTAILS FOR HARRIS MANIFOLDS

REPLACEMENT PIGTAILS FOR HARRIS MANIFOLDS - 24" PIGTAILS WITH CGA

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
24" Stainless Steel CGA 346 x Brass CGA with CV		24" Stainless Steel CGA 346 x SS CGA with CV	
9103392	PIGTAIL - ASY, 2' CGA 346 TO CGA 320	9103459	PIGTAIL - ASY, 2' CGA 346 TO CGA 320 SS
9103393	PIGTAIL - ASY, 2' CGA 346 TO CGA 326	9103460	PIGTAIL - ASY, 2' CGA 346 TO CGA 326 SS
9103394	PIGTAIL - ASY, 2' CGA 346 TO CGA 346	9103461	PIGTAIL - ASY, 2' CGA 346 TO CGA 346 SS
9103395	PIGTAIL - ASY, 2' CGA 346 TO CGA 350	9103462	PIGTAIL - ASY, 2' CGA 346 TO CGA 350 SS
9103396	PIGTAIL - ASY, 2' CGA 346 TO CGA 540	9103463	PIGTAIL - ASY, 2' CGA 346 TO CGA 500 SS
9103397	PIGTAIL - ASY, 2' CGA 346 TO CGA 580	9103464	PIGTAIL - ASY, 2' CGA 346 TO CGA 540 SS
9103398	PIGTAIL - ASY, 2' CGA 346 TO CGA 590	9103465	PIGTAIL - ASY, 2' CGA 346 TO CGA 580 SS
		9103466	PIGTAIL - ASY, 2' CGA 346 TO CGA 590 SS
		9103487	PIGTAIL - ASY, 2' CGA 346 TO CGA 240 SS
		9103488	PIGTAIL - ASY, 2' CGA 346 TO CGA 330 SS
		9103489	PIGTAIL - ASY, 2' CGA 346 TO CGA 660 SS
		9103490	PIGTAIL - ASY, 2' CGA 346 TO CGA 705 SS

REPLACEMENT PIGTAILS FOR HARRIS MANIFOLDS - 36" PIGTAILS WITH CGA

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
36" Stainless Steel CGA 346 x Brass CGA with CV		36" Stainless Steel CGA 346 x SS CGA with CV	
9103399	PIGTAIL - ASY, 3' CGA 346 TO CGA 320	9103467	PIGTAIL - ASY, 3' CGA 346 TO CGA 320 SS
9103400	PIGTAIL - ASY, 3' CGA 346 TO CGA 326	9103468	PIGTAIL - ASY, 3' CGA 346 TO CGA 326 SS
9103401	PIGTAIL - ASY, 3' CGA 346 TO CGA 346	9103469	PIGTAIL - ASY, 3' CGA 346 TO CGA 346 SS
9103402	PIGTAIL - ASY, 3' CGA 346 TO CGA 350	9103470	PIGTAIL - ASY, 3' CGA 346 TO CGA 350 SS
9103403	PIGTAIL - ASY, 3' CGA 346 TO CGA 540	9103471	PIGTAIL - ASY, 3' CGA 346 TO CGA 500 SS
9103404	PIGTAIL - ASY, 3' CGA 346 TO CGA 580	9103472	PIGTAIL - ASY, 3' CGA 346 TO CGA 540 SS
9103405	PIGTAIL - ASY, 3' CGA 346 TO CGA 590	9103473	PIGTAIL - ASY, 3' CGA 346 TO CGA 580 SS
		9103474	PIGTAIL - ASY, 3' CGA 346 TO CGA 590 SS
		9103491	PIGTAIL - ASY, 3' CGA 346 TO CGA 240 SS
		9103492	PIGTAIL - ASY, 3' CGA 346 TO CGA 330 SS
		9103493	PIGTAIL - ASY, 3' CGA 346 TO CGA 660 SS
		9103494	PIGTAIL - ASY, 3' CGA 346 TO CGA 705 SS

REPLACEMENT PIGTAILS FOR HARRIS MANIFOLDS - 72" PIGTAILS WITH CGA

PART NO.	DESCRIPTION
72" Stainless Steel 1/4" FNPT x SS CGA with CV	
9103457	PIGTAIL - ASY, 6' CGA 540 SS
9103458	PIGTAIL - ASY, 6' CGA 580 SS

Note: CGA 346 is Harris' specialty gas manifold header connection. These pigtails are replacement items for Harris specialty gas manifold systems.



SPECIALTY GAS DISTRIBUTION

ACCESSORIES

Regulator Alarm System

The Harris Regulator Alarm Kit is used to indicate a near empty cylinder condition for critical applications. The kit comes with an audio/visual alarm box, 12VDC power supply and adjustable alarm switch gauge. It is available for low pressure (up to 400 PSI) or high pressure (up to 3000 PSI) regulators. The alarm kit can be purchased separately for regulators already in use or can be added as an option to select Harris regulators.

FEATURES

- ▶ 2" Gauge (0-400 PSI or 0-3000 PSI)
- ▶ Chrome plated or stainless steel available
- ▶ Switch can be manually adjusted to any pressure on the gauge dial
- ▶ Requires 115VAC



ORDERING INFORMATION

PART NO.	MATERIAL	DESCRIPTION
4300424	Chrome Plated Brass	Alarm HP Inlet
4300425	Chrome Plated Brass	Alarm LP Inlet
4300426	Stainless Steel	Alarm HP Inlet
4300427	Stainless Steel	Alarm LP Inlet

Flashback Arrestors

Stainless Steel Flashback Arrestors are designed for oxygen, hydrogen and other flammable or fuel gases. Standard with 1/4" FNPT inlet and 1/4" MNPT outlet connections. Easily adapts to various applications. UL listed.



ORDERING INFORMATION

PART NO.	DESCRIPTION	WORKING PRESSURE	ELASTOMERS
4301637	Hydrogen	50 PSIG	Viton®
	LPG/Methane	50 PSIG	
	Acetylene	15 PSIG	
4301638	Oxygen	143 PSIG	Viton®

Check Valves

Check valves ensure unidirectional flow of compressed gases. Check valves provide a simple, effective way, to prevent backflow in gas delivery systems. Check valves are available in brass or 316 stainless steel.



ORDERING INFORMATION

PART NO.	CONNECTIONS	MATERIALS	SEAT	MAX. WORKING PRESSURE
4300379	1/4" FNPT	Brass	Viton	3000 PSIG
4300380	1/4" FNPT	316SS	Viton	3000 PSIG
4300386	1/4" FNPT	316SS	EPR	3000 PSIG

FEATURES

- ▶ Cracking pressure: 1 PSI
- ▶ Cv: 0.15
- ▶ Operating temperature range: -20F to +300F

Block & Bleed Purge Assemblies

Block and Bleed Purges are typically used in manifolds or other applications where atmospheric contaminants need to be purged after cylinder change-out. The purges are typically installed between the CGA connection and the pigtail on the cylinder end. Additional applications can include installation on the regulator inlet or outlet.



P/N: 4300428

PART NO.	MATERIAL	DESCRIPTION
4300428	Chrome Plated Brass	LH Block & Bleed
4300429	Chrome Plated Brass	RH Block & Bleed



HIGH FLOW SERVO-DOME

Model HP 750

FEATURES

- ▶ 0-250, 500 or 1000 PSIG delivery pressure
- ▶ 3000 and 5500 PSIG inlet pressures
- ▶ Pilot and dome regulator integrated into one body
- ▶ One-piece encapsulated seat design with 10 micron filtration
- ▶ Conforms to CGA E-4 standard for gas pressure regulators
- ▶ 1/2" FNPT connections



OPTIONAL ACCESSORIES

- 9100887 - Panel Mount Kit
- 9103615 - CGA 540 Adapter Kit
- 9103616 - CGA 580 Adapter Kit
- 9103617 - CGA 680 Adapter Kit

ORDERING INFORMATION

PART NO.	MODEL NO.	MAX. INLET PSIG	DELIVERY PRESSURE RANGE PSIG	DELIVERY PRESSURE GAUGE PSIG	SUPPLY PRESSURE GAUGE PSIG
3000860	HP750-500-3000	3000	0-500	600	4000
3000865	HP750-250-3000	3000	0-250	400	4000
3000866	HP750-1000-3000	3000	0-1000	2000	4000
3000868	HP750-500-5500	5500	0-500	600	6000
3000867	HP750-250-5500	5500	0-250	400	6000
3000869	HP750-1000-5500	5500	0-1000	2000	6000



HIGH FLOW REMOTE SERVO-DOME

Model HP 752

FEATURES

- ▶ 0-500 PSIG delivery pressure
- ▶ Up to 3000 PSIG inlet pressure
- ▶ One-piece encapsulated seat design with 10 micron filter
- ▶ 1/2" diameter sensing line for precise servo flow control
- ▶ 1/4" diameter dome pressure line
- ▶ Front panel mount bonnet on remote pilot regulator
- ▶ Model 752 inlet & outlet: 1/2" FNPT
- ▶ Remote pilot regulator can be mounted up to 100 feet away



Model HP 752
Dome-Loaded
Regulator



Remote Pilot Regulator

ORDERING INFORMATION

PART NO.	MODEL	DESCRIPTION
3000885	Model 752	Servo Dome Regulator w/ Remote Pilot Regulator

OPTIONAL ACCESSORIES

- 9100887 - Front Panel Mount Kit
- 9103615 - CGA 540 Adapter Kit
- 9103616 - CGA 580 Adapter Kit
- 9103617 - CGA 680 Adapter Kit



SPECIALTY GAS DISTRIBUTION

LIQUID CYLINDER



Model HP 405

FEATURES

- ▶ 0-125, 0-350 and 0-500 PSIG delivery pressure
- ▶ One-piece encapsulated seat design with 10 micron filter to protect seat from particulate contamination
- ▶ Chrome-plated bonnet, body and fittings
- ▶ 2" chrome-plated dual scale gauges (psi/bar)
- ▶ Conforms to CGA E-4 standard for gas pressure regulators
- ▶ Maximum inlet 3000 PSIG - can be used on high pressure cylinders
- ▶ Tamper-proof, self-reseating internal safety valve



ORDERING INFORMATION

MODEL	DELIVERY PRESSURE	(OUTLET GAUGE)	CGA/INLET FITTING	OUTLET FITTING
HP 405	0-125 PSIG 0-350 PSIG 0-500 PSIG	(0-200 psi/14 bar) (0-400 psi/28 bar) (0-1000 psi/70 bar)	320 540 580 000 (1/4" FNPT) 001 (1/4" MNPT)	A) 1/4" Tube Fitting (chrome-plated) B) 1/4" FNPT Port

ULTRA HIGH PRESSURE



Models 8700 & 8700SS

FEATURES

- ▶ Model 8700 is brass, 8700 SS is stainless steel
- ▶ 0-1500, 2500, 3000, 4500 and 6000 PSIG delivery pressures available
- ▶ One-piece encapsulated valve design with PCTFE seats and an internal filter
- ▶ Ergonomic knob for improved grip
- ▶ 1/4" NPT outlet with stainless steel 1/4" tube fitting
- ▶ 2 1/2" dual scale gauges (psi/bar)
- ▶ Conforms to CGA E-4 standard for gas pressure regulators
- ▶ Air / inert models are self-venting

* Other CGA inlets and pressures available



ORDERING INFORMATION

PART NO.	MODEL NO.	MAX. INLET PSIG	DELIVERY PRESSURE RANGE PSIG	DELIVERY PRESSURE GAUGE PSIG	SUPPLY PRESSURE GAUGE PSIG
3200320	8700-1500-677	7500	0-1500	3000	10,000
3200321	8700-3000-677	7500	0-3000	4000	10,000
3200322	8700-4500-677	7500	0-4500	6000	10,000
3200323	8700-6000-677	7500	0-6000	10,000	10,000
3200700	8700SS-1500-000	10,000	0-1500	3000	10,000
3200701	8700SS-3000-000	10,000	0-3000	4000	10,000
3200702	8700SS-4500-000	10,000	0-4500	6000	10,000
3200703	8700SS-6000-000	10,000	0-6000	10,000	10,000

OPTIONAL ACCESSORIES

9100887 - Panel Mount Nut





Model HP 723 - High Purity Brass Barstock

PIPELINE

FEATURES

- ▶ 1-11/16" 316L stainless steel diaphragm eliminates contamination from diffusion or out-gassing
- ▶ One-piece encapsulated seat design includes a sintered filter to protect the seat from particulate contamination
- ▶ 2" dual scale brass gauge (psi/bar)
- ▶ 1×10^{-9} cc/sec. inboard helium leak rate maintains gas purity levels
- ▶ Front or back panel mountable
- ▶ External relief valve standard



OPTIONAL ACCESSORIES

- 9100875 - Captured Vent Kit
- 9100871 - Front Panel Mount Kit

ORDERING INFORMATION

MODEL	DELIVERY PRESSURE (OUTLET GAUGE)	INLET	ACCESSORIES	OPTIONS
HP 723	0-15 PSIG (30" Hg Vac-30 psi/2 bar)	000 (1/4" FNPT)	A) 1/4" MNPT Needle Valve	1) Without Relief Valve
HP 723C (chrome-plated)	0-50 PSIG (30" Hg Vac-100 psi/7 bar)	001 (1/4" MNPT)	B) 1/4" FNPT Diaph. Valve	2) Helium Leak Cert. (Inboard)
	0-125 PSIG (30" Hg Vac-200 psi/14 bar)		C) 1/4" MNPT Nipple	3) No Gauge
	0-250 PSIG (400 psi/28 bar)		D) 1/4" FNPT Port	4) Helium Leak Cert. (Outboard)
	0-500 PSIG (1000 psi/70 bar)		E) 1/4" Tube Fitting	
			F) 1/8" Tube Fitting	
			G) 1/4" Hose Barb (MNPT)	
			H) 1/8" Hose Barb (MNPT)	
			I) 1/4" Hose Barb (FNPT)	

NOTE: Regulators with delivery pressure above 15 PSIG should not be used with acetylene.



Model HP 743 - High Purity Stainless Steel Barstock

PIPELINE

FEATURES

- ▶ 1-11/16" 316L stainless steel diaphragm eliminates contamination from diffusion or out-gassing
- ▶ One-piece encapsulated seat design includes a sintered filter to protect the seat from particulate contamination
- ▶ Chrome-plated bonnet, 316L body and fittings
- ▶ 2" stainless steel single scale gauge (psi/bar)
- ▶ 1×10^{-9} cc/sec. inboard helium leak rate maintains gas purity levels
- ▶ Maximum inlet 3000 PSIG
- ▶ Front or back panel mountable



OPTIONAL ACCESSORIES

- 9100875 - Captured Vent Kit
- 9100871 - Front Panel Mount Kit

ORDERING INFORMATION

HP 743 MODEL NO.	DELIVERY PRESSURE (OUTLET GAUGE)	INLET	ACCESSORIES	OPTION
HP 743	0-15 PSIG (30" Hg Vac-30 psi/2 bar)	000 (1/4" FNPT)	A) 1/4" FNPT Diaph. Valve	2) Helium Leak Cert. (Inboard)
	0-50 PSIG (30" Hg Vac-100 psi/7 bar)	001 (1/4" MNPT)	B) 1/4" MNPT Nipple	3) No Gauge
	0-125 PSIG (30" Hg Vac-200 psi/14 bar)		C) 1/4" FNPT Port	4) With Relief Valve
	0-250 PSIG (400 psi/28 bar)		D) 1/4" Tube Fitting	5) Helium Leak Cert. (Outboard)
	0-500 PSIG (1000 psi/70 bar)		E) 1/8" Tube Fitting	

NOTE: Regulators with delivery pressure above 15 PSIG should not be used with acetylene.



MEDICAL GAS DISTRIBUTION

SEMI-AUTOMATIC SWITCHOVER

Model MSA 900

The MSA 900 series manifolds are semi-automatic systems designed for medical applications that require uninterrupted gas service throughout the cylinder bank change-over cycle.

FEATURES

- ▶ 120/240 VAC power supply box includes circuit board with dry contacts for hook-up to all remote alarms regardless of voltage up to 3 amps 30 VDC or 2 amps 250 VAC
- ▶ Copper pigtails with check valves are standard for oxygen to meet NFPA-99 requirements; flexible pigtails for all other gases
- ▶ Headers are constructed as a single unit and are labeled for gas service. Each connection is silver brazed (by brazers certified to ASME section IX) and tested. Additionally, the header has CGA check valve bushings at each inlet location to meet NFPA-99 requirements
- ▶ 3000 PSIG maximum inlet pressure (2000 PSIG for CO₂ and N₂O manifolds)
- ▶ Manifold outlet is 1" 11.5 NPS male; relief valve outlet is 1/2" NPT male
- ▶ Optional remote audio/visual alarms are available to provide warning of service interruption
- ▶ Cabinet dimensions: W-16" H-21" D-10"
- ▶ System contains minimal electrical components for easy adjustment and maintenance
- ▶ Two (2) year limited warranty



Model MSA 900

Control unit includes internal dual line regulators that are adjustable from 30 to 70 PSIG.

Model MSA 900HL

Appropriate for all CO₂ and N₂O gas systems. Control unit contains an internal heater that delivers up to 500 SCFH nitrous oxide or carbon dioxide. Unit also includes internal dual line regulators that are adjustable from 30 to 70 PSIG.

Model MSA 900HP

Control unit includes internal dual line regulators that are adjustable from 100 to 190 PSIG.

OPTIONAL ACCESSORIES

4300341 - Audio/Visual Alarm

How to Order

Control Type - Right Header - Left Header - Gas

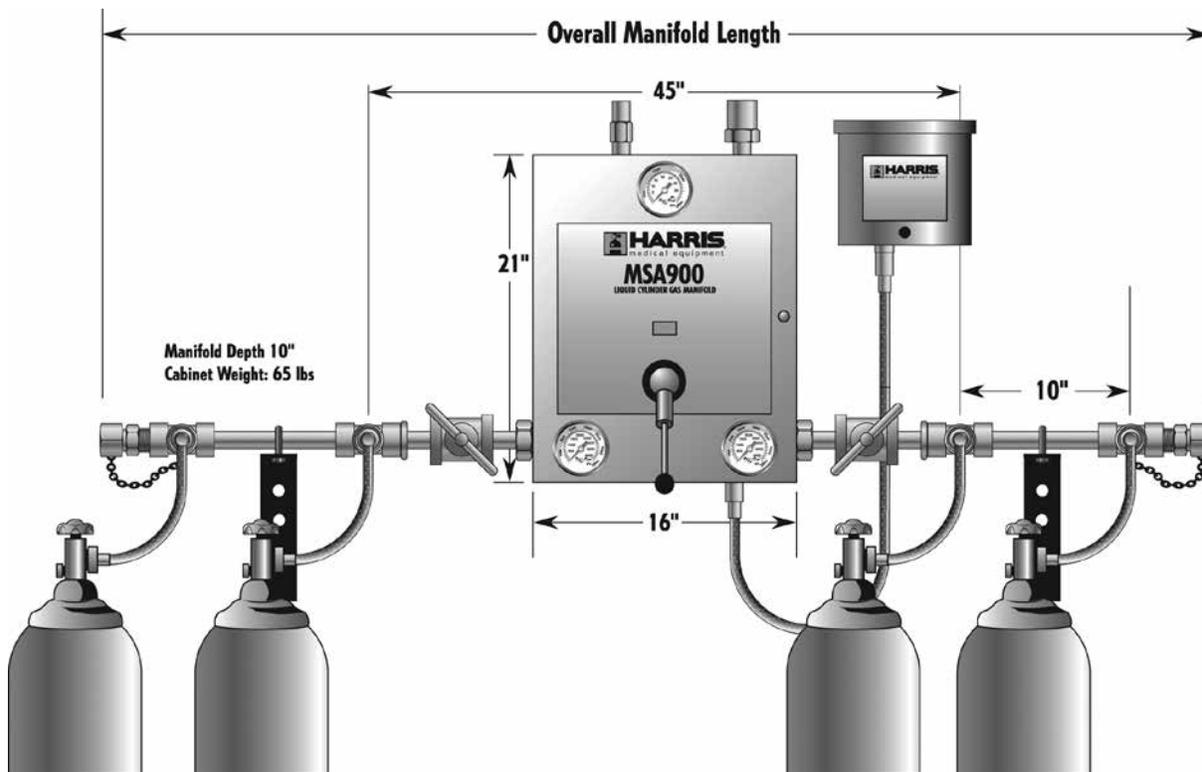
MSA 900 - 1R36 - 1L36 - 580

Represents an automatic manifold for delivery between 100 and 190 PSIG with 36" pigtails for 2 nitrogen cylinders

ORDERING INFORMATION

MSA 900 SERIES	XX(XX) RIGHT HEADER (# CYLINDERS)	XX(XX) LEFT HEADER (# CYLINDERS)	XXX GAS SERVICE
Semi-Automatic Systems	24" Pigtails	24" Pigtails	540 - Oxygen 326 - Nitrous Oxide 320 - Carbon Dioxide 580 - Nitrogen 346 - Air (Breathing)
MSA 900 (Oxygen/Air)	1R 2R 3R 4R	1L 2L 3L 4L	
MSA HL 900 (CO ₂ , N ₂ O)	36" Pigtails	36" Pigtails	
MSA HP 900 (Nitrogen)	1R36 2R36 3R36 4R36	1L36 2L36 3L36 4L36	

MSA 900 TYPICAL LAYOUT



ORDERING INFORMATION

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
MSA 900	3000 PSIG	1200 SCFH	30-70 PSIG
MSA HL 900	2000 PSIG	500 SCFH (includes heater)	30-70 PSIG
MSA HP 900	3000 PSIG	1200 SCFH	100-190 PSIG



MEDICAL GAS DISTRIBUTION

FULLY AUTOMATIC SWITCHOVER

Model MFA 910

The MFA 910 series manifolds are fully automatic systems designed for medical applications that require uninterrupted gas service throughout the cylinder bank change-over cycle.

FEATURES

- ▶ Digital read-out displays PSIG, kPa or Bar
- ▶ 120/240 VAC power supply box includes circuit board with dry contacts for hook-up to all remote alarms regardless of voltage up to 3 amps 30 VDC or 2 amps 250 VAC
- ▶ Copper pigtailed with check valves are standard for oxygen (to meet, NFPA-99 requirements) flexible pigtailed for all other gases
- ▶ Headers are constructed as a single unit and labeled for gas service; each connection is silver-brazed (by brazers certified to ASME section IX) and tested. In addition, the header has CGA check valve bushing at each inlet location to meet NFPA-99 requirements
- ▶ 3000 PSIG maximum inlet pressure (2000 PSIG for CO₂ and N₂O manifolds)
- ▶ Manifold outlet is 1" 11.5 NPS male; relief valve outlet is 1/2" NPT male
- ▶ Optional remote audio/visual alarms are available to provide warning of service interruption
- ▶ Cabinet dimensions: W-16" H-21" D-10"
- ▶ System automatically resets after the empty bank of cylinders is replaced - no manual resetting is required
- ▶ Two (2) year limited warranty



Model MFA 910

Control unit includes internal dual line regulators that are adjustable from 30 to 70 PSIG.

OPTIONAL ACCESSORIES

4300341 - Audio/Visual Alarm

Model MFA 910HL

Appropriate for all CO₂ and N₂O gas systems. Control unit contains an internal heater that will deliver up to 500 SCFH nitrous oxide or carbon dioxide. Unit also includes internal dual line regulators that are adjustable from 30 to 70 PSIG.

How to Order

Control Type	-	Right Header	-	Left Header	-	Gas
MFA 910	-	2R	-	2L	-	540

Represents a fully automatic manifold with 24" pigtailed for 4 oxygen cylinders

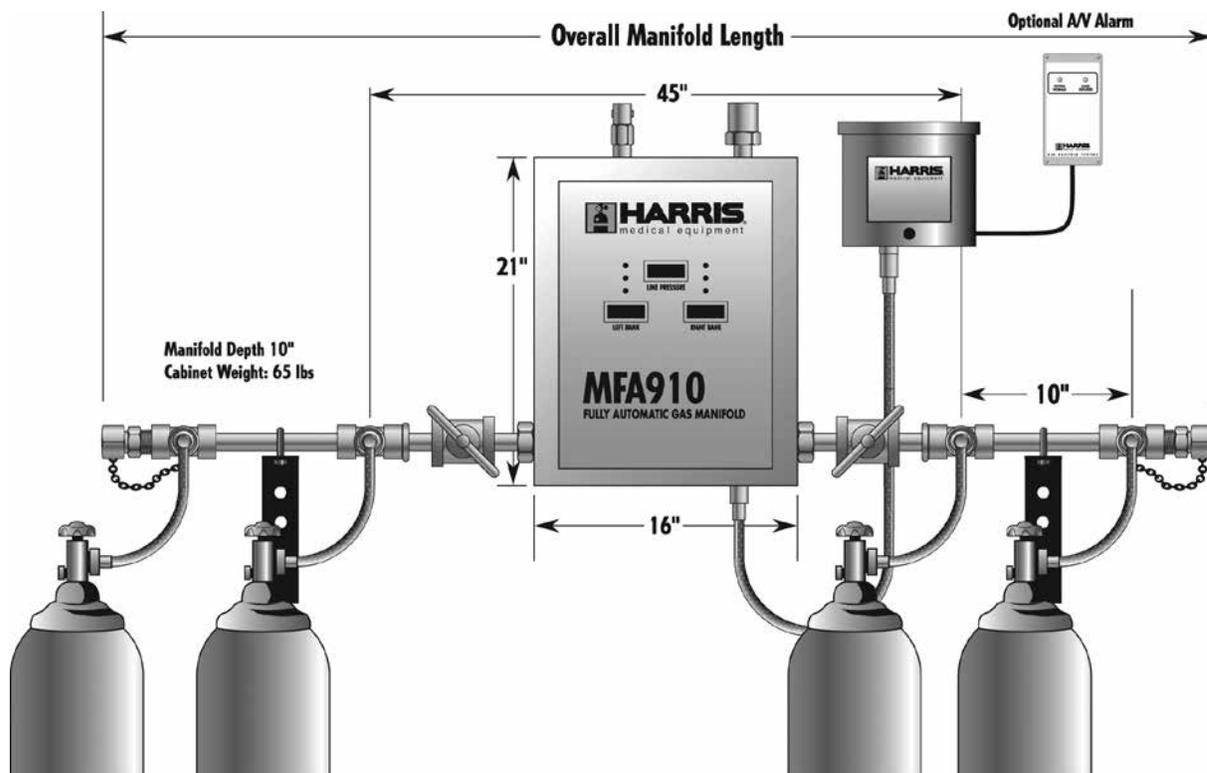
Model MFA 910HP

Control unit includes internal dual line regulators that are adjustable from 100 to 190 PSIG.

ORDERING INFORMATION

MFA 910 SERIES	XX(XX) Right Header (# CYLINDERS)	XX(XX) Left Header (# CYLINDERS)	XXX Gas Service
Fully Automatic Systems MFA 910 (Oxygen, Air)	24" Pigtailed	24" Pigtailed	540 - Oxygen 326 - Nitrous Oxide 320 - Carbon Dioxide 580 - Nitrogen 346 - Air (Breathing)
	1R	1L	
	2R	2L	
	3R	3L	
	4R	4L	
MFA HL 910 (CO ₂ , N ₂ O)	36" Pigtailed	36" Pigtailed	
MFA HP 910 (Nitrogen)	1R36	1L36	
	2R36	2L36	
	3R36	3L36	
	4R36	4L36	

MFA 910 TYPICAL LAYOUT



ORDERING INFORMATION

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	DELIVERY RANGE
MFA 910	3000 PSIG	1200 SCFH	30-70 PSIG
MFA HL 910	2000 PSIG	500 SCFH (includes heater)	30-70 PSIG
MFA HP 910	3000 PSIG	2000 SCFH	100-190 PSIG



MEDICAL GAS DISTRIBUTION

MEDICAL MANIFOLD ACCESSORIES



MEDICAL MANIFOLD HEADER ASSEMBLIES

PART NO.	DESCRIPTION
9103506	HEADER-ASY,BRS 2RH CGA540
9103507	HEADER-ASY,BRS 2LH CGA540
9103508	HEADER-ASY,BRS 3RH CGA540
9103509	HEADER-ASY,BRS 3LH CGA540
9103510	HEADER-ASY,BRS 4RH CGA540
9103511	HEADER-ASY,BRS 4LH CGA540
9103512	HEADER-ASY,BRS 2RH CGA346
9103513	HEADER-ASY,BRS 2LH CGA346
9103514	HEADER-ASY,BRS 3RH CGA346
9103515	HEADER-ASY,BRS 3LH CGA346
9103516	HEADER-ASY,BRS 4RH CGA346
9103517	HEADER-ASY,BRS 4LH CGA346
9103518	HEADER-ASY,BRS 2RH CGA326
9103519	HEADER-ASY,BRS 2LH CGA326
9103520	HEADER-ASY,BRS 3RH CGA326
9103521	HEADER-ASY,BRS 3LH CGA326
9103522	HEADER-ASY,BRS 4RH CGA326
9103523	HEADER-ASY,BRS 4LH CGA326
9103524	HEADER-ASY,BRS 2RH CGA320
9103525	HEADER-ASY,BRS 2LH CGA320
9103526	HEADER-ASY,BRS 3RH CGA320
9103527	HEADER-ASY,BRS 3LH CGA320
9103528	HEADER-ASY,BRS 4RH CGA320
9103529	HEADER-ASY,BRS 4LH CGA320
9103530	HEADER-ASY,BRS 2RH CGA580
9103531	HEADER-ASY,BRS 2LH CGA580
9103532	HEADER-ASY,BRS 3RH CGA580
9103533	HEADER-ASY,BRS 3LH CGA580
9103534	HEADER-ASY,BRS 4RH CGA580
9103535	HEADER-ASY,BRS 4LH CGA580
9103536	HEADER-ASY,BRS 1RH/LH CGA540
9103537	HEADER-ASY,BRS 1RH/LH CGA346
9103538	HEADER-ASY,BRS 1RH/LH CGA326
9103539	HEADER-ASY,BRS 1RH/LH CGA320
9103540	HEADER-ASY,BRS 1RH/LH CGA580

MEDICAL PIGTAIL ASSEMBLIES

PART NO.	DESCRIPTION
9103496	2' CGA540 RIGID COPPER W/CV
9103497	3' CGA540 RIGID COPPER W/CV
9103498	2' CGA326 W/CV
9103499	2' CGA 320 W/CV
9103500	2' CGA580 BRS W/CV
9103501	2' CGA346 BRS W/CV
9103502	3' CGA326 BRS W/CV
9103503	3' CGA320 BRS W/CV
9103504	3' CGA580 BRS W/CV
9103505	3' CGA346 BRS W/CV

MANIFOLD ALARMS

PART NO.	DESCRIPTION
4300340	Non-Flammable Gas Alarm, Visual Only
4300341	Non-Flammable Gas Alarm, Visual /Audio

OTHER ACCESSORIES

MICRON FILTERS

TEE-TYPE FILTERS

- ▶ Filter element can be replaced without removing body from system
- ▶ Replaceable sintered elements are available in 0.5, 2 micron pore sizes
- ▶ End connections are 1/4" x 1/4" FNPT

ORDERING INFORMATION

PART NO.	MODEL	DESCRIPTION
4300406	4 FT 0.5	Tee-Type Filter 0.5 Micron
4300407	4 FT 2.0	Tee-Type Filter 2 Micron

IN-LINE FILTERS

- ▶ Replaceable sintered elements are available in 0.5, 2 micron pore sizes
- ▶ End connections are 1/4" x 1/4" FNPT

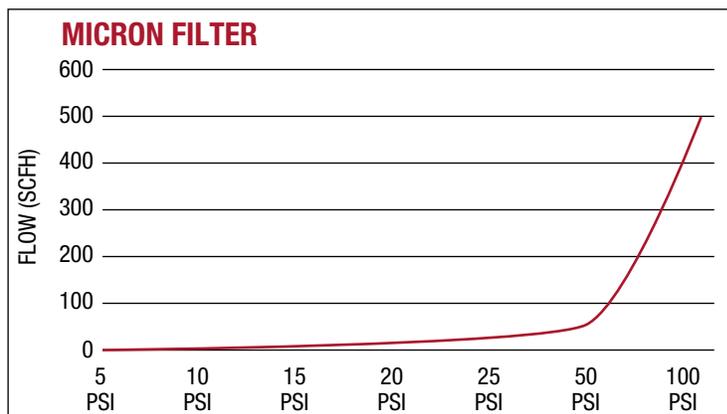
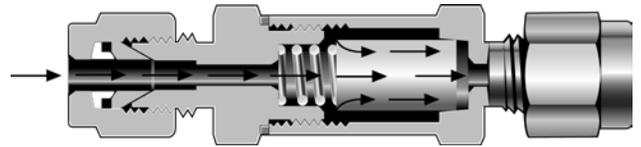
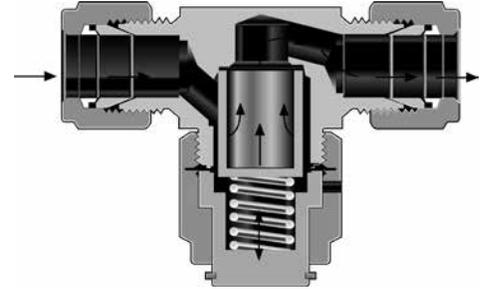
ORDERING INFORMATION

PART NO.	MODEL	DESCRIPTION
4300404	4F 0.5	In-Line Filter 0.5 Micron
4300405	4F 2.0	In-Line Filter 2 Micron

REPLACEMENT ELEMENTS (Tee-Type & In-Line)

ORDERING INFORMATION

PART NO.	MODEL	DESCRIPTION
4300408	K4-0.5	Replacement Element 0.5 Micron
4300409	K4-2.0	Replacement Element 2 Micron



OTHER ACCESSORIES

HIGH PRESSURE PURIFIERS



Model 8010

The Model 8010 gas purifier protects your gas system from contamination of oil and water found in some industrial gases and occasionally in specialty carrier gases. The small daily operating costs more than justify the prevention of a system shut-down and the subsequent cleaning and/or repair costs.

The Model 8010 purifier shell must be used with a specially designed replaceable cartridge. These cartridges are shipped in hermetically sealed cans with convenient pull-tab tops for easy opening. The improved packaging ensures full retention of capacity during storage.

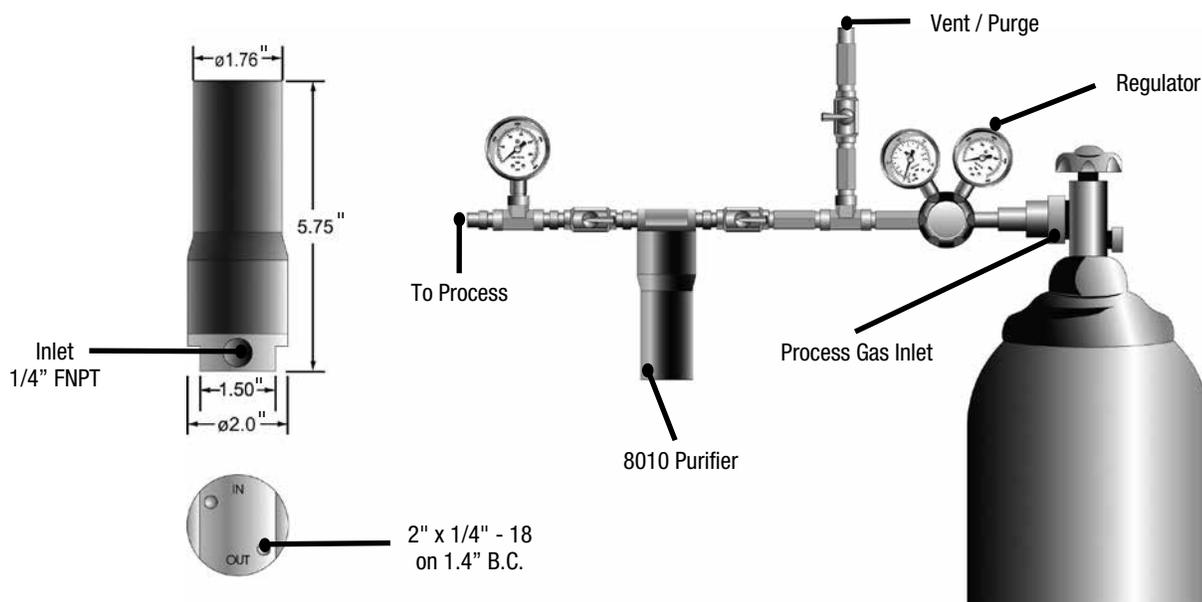
FEATURES

- ▶ Shell body: Aluminum anodized blue
- ▶ Shell Head: chrome-plated brass
- ▶ Seal: Buna N
- ▶ Maximum operating pressure: 2000 PSIG (500 PSIG for oxygen)
- ▶ Operating temperature range: 40° F to 165° F (40° C to 75° C)
- ▶ Dew point achievable: 100° F (75° C)
- ▶ Inlet and outlet ports: 1/4" FNPT
- ▶ Dimensions: 2" diameter x 5 3/4" long
- ▶ Weight with cartridge: 1.5 Lbs.

ORDERING INFORMATION

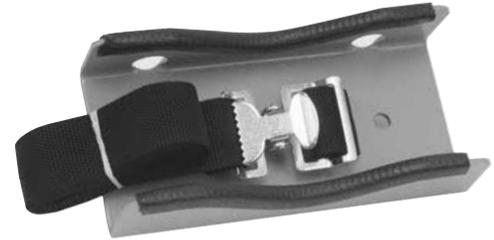
PART NO.	MODEL	DESCRIPTION
4302792	Purifier	8010
4302793	Cartridge	8010 13 x Oil & Water
4302794	Cartridge	8010 4A Water
4302795	Cartridge	8010 Activated Charcoal THC

8010 TYPICAL LAYOUT



Model G 100 Single Cylinder Wall Bracket

The G 100 is an all-steel constructed bracket with many high-quality construction features. The edges are protected with reinforced steel and vinyl edge guard, maintain and protect the cylinders while providing extra grip. The steel parts are sealed with epoxy-powdered paint to assure long service life and chemical resistance. Straps and cinch-style buckles are used as the primary means of support, as they enable the cylinders to be held tight and secure against the brackets. The polypropylene support straps are 1-1/2" wide by 54" long with steel cinch buckles. They rate a robust 1200 PSIG in strength. These supports hold cylinders from 4" to 12" diameter.



ORDERING INFORMATION

PART NO.	DESCRIPTION	SIZE	WEIGHT
4302650	G 100	4.25"x 8"x 2.25"	3 lbs.
4302652	Optional Chain Set	41"	1 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.

Model G 110 Single Cylinder Adjustable Bracket

Molded from reinforced polypropylene, the G 110 bracket adjusts to snugly support any cylinder from 4" to 14" diameter. Unit is first set to designated cylinder diameter with recessed set-screws to securely lock it in the width position. Bracket permanently mounts to wall using fasteners (not included). Straps and security chains are included.

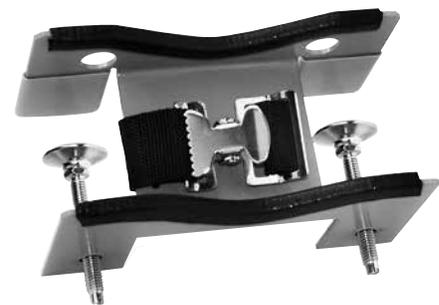


ORDERING INFORMATION

PART NO.	DESCRIPTION	SIZE	WEIGHT
4302653	G 110	9"x 4"x 5"	2 lbs.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.

Model G 150 Single Cylinder Bench Mount Bracket

The G 150 Bench Cylinder Bracket mounts single cylinder using dual mounting posts with swivel feet and non-slip pads to clamp on bench or table tops from 3/8" to 1-3/4" thick. Standard strap set and optional chain set (G 105) secure cylinders 4" to 14" diameter. This bracket is especially useful where walls are inaccessible to attach brackets or when temporary, safe cylinder supports are required.



ORDERING INFORMATION

PART NO.	DESCRIPTION	SIZE	WEIGHT
4302654	G 150	4.25"x 8"x 4.25"	4.5 lbs.
4302652	Optional Chain Set	41"	1 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.

OTHER ACCESSORIES

BRACKETS

Wall Mounted Cylinder Brackets

All steel constructed brackets and racks share many high quality construction features. 11-gauge hot rolled steel form the foundation, edges are protected with steel reinforced vinyl edging, guarding maintaining cylinders and providing extra grip; Steel parts are sealed with epoxy-powdered paint to assure long service life and chemical resistance. Straps and cinch-style buckles are chosen as primary means of support because they enable the cylinders to be held tight and secure against the brackets. Support straps are 1 1/2" wide by 54" long polypropylene with steel cinch buckle and rate a robust 1200 PSIG strength. Supports hold cylinders from 4" to 12" diameter.

ORDERING INFORMATION

PART NO.	MODEL NO.	SIZE	WEIGHT
4302656	G200	24"x2"x4"	8 lb.
4302659	G300	4.25"x36"x2.25"	11 lb.
4302662	G401	4.25"x48"x2.25"	14 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.



G 200 Double Cylinder Wall Bracket



G 300 Triple Cylinder Wall Bracket

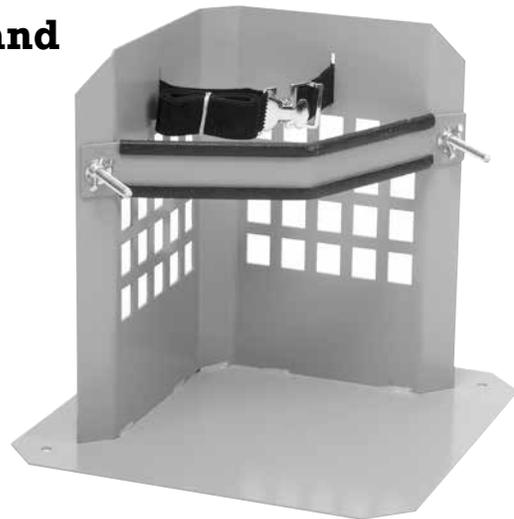


G 401 Four Cylinder Wall Bracket

STANDS

Model G 181 Single Cylinder Floor Stand

The G 181 safely supports cylinders 4" through 10" in diameter using a cinch buckle, polypropylene strap, 10-gauge steel bar and steel-reinforced vinyl edge guards, similar to our cylinder brackets. This stand is designed and built for the safe storage of industrial and commercial use gas cylinders. It's all welded steel construction is covered with epoxy-powdered paint enhancing its structural integrity, providing for long service life, while safety protecting the cylinders inside.



ORDERING INFORMATION

PART NO.	DESCRIPTION	SIZE	WEIGHT
4302655	G181	16"x16"x15"	21 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.

STANDS

Cylinder Stands & Process Stations

The stationary cylinder floor stands and process stations are designed and built for the safe storage of industrial and commercial use gas cylinders up to 12" diameter. These stationary racks are constructed from 11 gauge and heavier plate steel. The cylinder capacity racks share the 1.5" polypropylene straps and steel cinch buckles used in our brackets. Fully welded construction and quality epoxy powder paint finishes provide structural integrity and long service life. As with our cylinder brackets, surfaces coming into direct contact with the cylinders are protected with steel reinforced vinyl edge guards, protecting your equipment. Units ship partially disassembled for freight savings.



G 400 Four Cylinder Floor Stand



G 600 Six Cylinder Floor Stand

ORDERING INFORMATION

FLOOR STANDS

PART NO.	MODEL NO.	SIZE	WEIGHT
4302661	G400	24" x 36.5" x 30"	65 lb.
4302665	G600	4.25" x 48.5" x 30"	81 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.



G 277 Two Cylinder Process Station



G 400P Four Cylinder Process Station



G 600P Six Cylinder Process Station

ORDERING INFORMATION

PROCESS STATIONS

PART NO.	MODEL NO.	SIZE	WEIGHT
4302673	G277	12" x 28" x 72"	56 lb.
4302675	G400P	24" x 36.5" x 72"	81 lb.
4302676	G600P	24" x 48.5" x 30"	119 lb.
4302651	Replacement Strap	1 1/2" x 54"	1 lb.



OTHER ACCESSORIES

BOTTLE HOLDERS

Model G 700 Laboratory Lecture Bottle Holder

PVC construction units are durable and chemical resistant. Made from formed heavy PVC walls chemically welded. Sized to fit 2" diameter or lecture bottles. Stand (P/N G 700) has four bench mounting holes for optional permanent installation.

ORDERING INFORMATION

PART NO.	SIZE	WEIGHT
4302677	5"x8"x8"	1.5 lb.



Model G 710 Laboratory Lecture Bottle Holder

Formed heavy PVC walls chemically welded. Sized to fit 2" diameter or lecture bottles. The G 710 features wall or bench mounting holes for 1 bottle.

ORDERING INFORMATION

PART NO.	SIZE	WEIGHT
4302678	8"x5"x4"	1.5 lb.



Model G 730 Triple Laboratory Lecture Bottle Holder

Formed heavy PVC walls chemically welded. Sized to fit 2" diameter or lecture bottles. The G 730 features wall or bench mounting holes for 3 bottles.

ORDERING INFORMATION

PART NO.	SIZE	WEIGHT
4302679	7.5"x11"x4"	4 lb.



Model G 760 Lecture Bottle Carrier

Formed heavy PVC walls chemically welded. The G 760 features loop carry handle. Can store or transport 6 lb. style bottles.

ORDERING INFORMATION

PART NO.	SIZE	WEIGHT
4302680	9"x6"x19"	6 lb.



Due to the round bases on lecture bottles, specially designed bottle holders are recommended to secure them in place at their point of use.



WARRANTY

This equipment is sold by The Harris Products Group under the warranties and policies set forth in the following paragraphs. The warranty is extended only with respect to the purchase of this equipment directly from The Harris Products Group or its authorized distributor network as new merchandise and is extended to the first buyer thereof other than for the purpose of resale.

The warranty period is one (1) year from the date of original delivery to the buyer with the following exception for equipment use in corrosive gas service. Equipment used in corrosive gas service will have a warranty of ninety (90) days from the date of original delivery. The equipment is warranted to be free from functional defects in materials and workmanship and to conform to the description of this equipment contained in the product manual and any associated labels, inserts or instructions provided that the equipment is properly operated under conditions of normal use and that recommended regular maintenance and service is performed in accordance with the instructions provided.

The warranty for such equipment shall not apply if the equipment has been altered by any third party. The Harris Products Group or its designated service facility shall only perform repairs to the equipment. If the equipment has been subject to abuse, misuse, negligence or accident the stated warranty will not apply.

The Harris Products Group sole obligation to the buyer and the buyer's sole remedy is limited to the repair or replacement of the equipment free of charge at The Harris Products Group's option. The authorized distributor from which it was purchased must report the request for return or repair to The Harris Products Group. The request must include the observed deficiency, the part number or assembly number, gas service used and the proof of purchase. The request for return or repair must occur no later than seven (7) days after the expiration of the warranty period (One year and seven days for non-corrosive equipment and ninety seven (97) days for equipment in corrosive gas service). Transportation charges are to be prepaid for the return of the equipment and upon examination if the equipment is found defective due to no fault of the buyer the equipment will be replaced or repaired and returned to the original buyer at no charge. If the product is found to be defective due to negligence of the buyer or his customer the product will be repaired or replaced and returned to the original buyer only after authorization has been received to pay for any such repairs and all transportation charges.

The Harris Products Group shall not be liable for any damages including but not limited to incidental damages, consequential damages or other damages which may occur due to negligence, breach of warranty of other wise.

There are no expresses or implied warranties that extend beyond the warranties set forth by The Harris Products Group.





A LINCOLN ELECTRIC COMPANY

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