



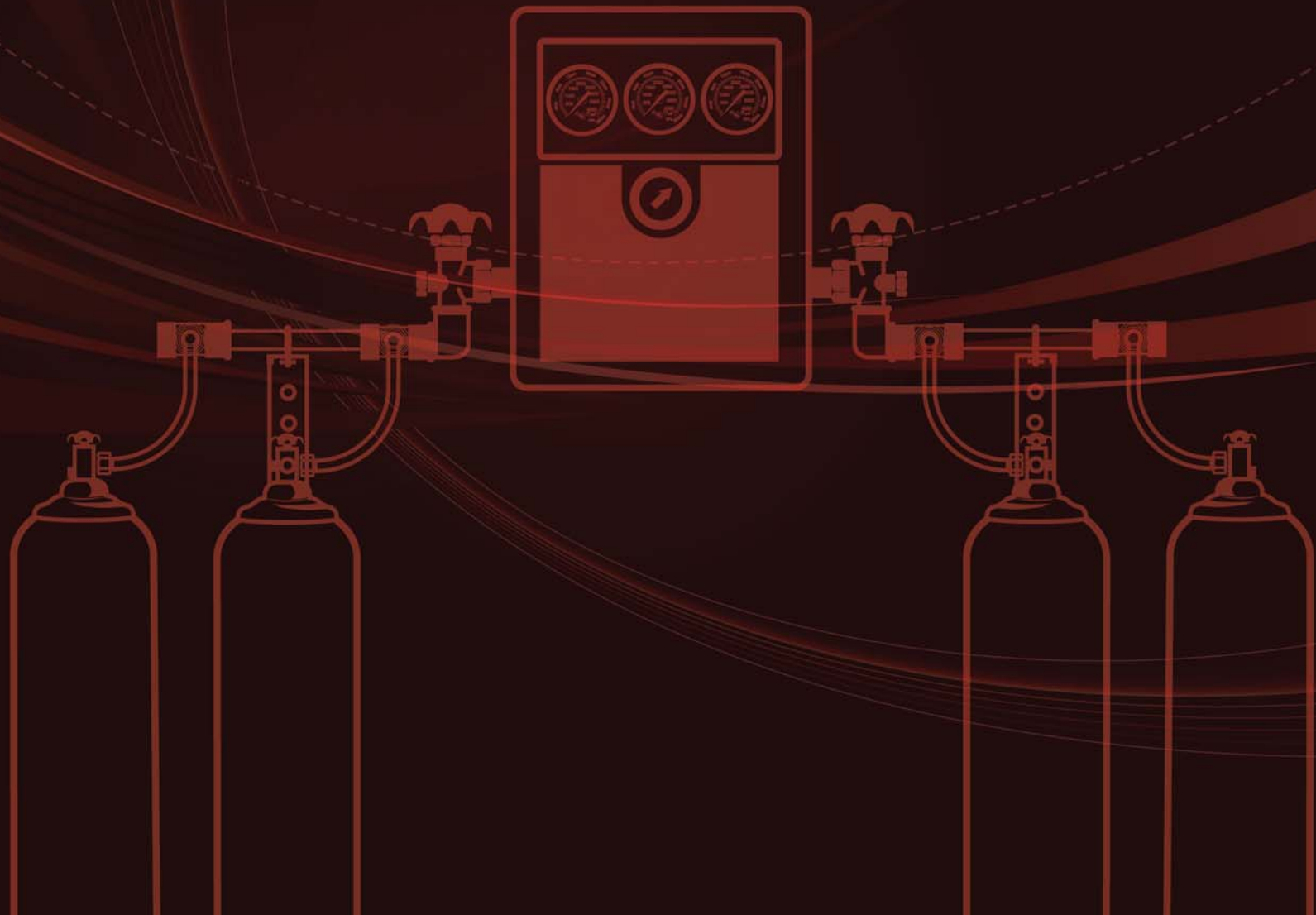
Gas Distribution Systems

**Industrial
Manifolds**

**Specialty Gas
Manifolds**

**Medical
Manifolds**

**Manifold
Accessories**





INDUSTRIAL

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Industrial Manifolds



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Two Gas
Blender Systems



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Specialty Gas
Manifold Accessories



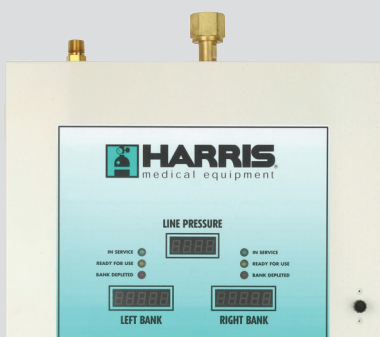
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Medical Manifold
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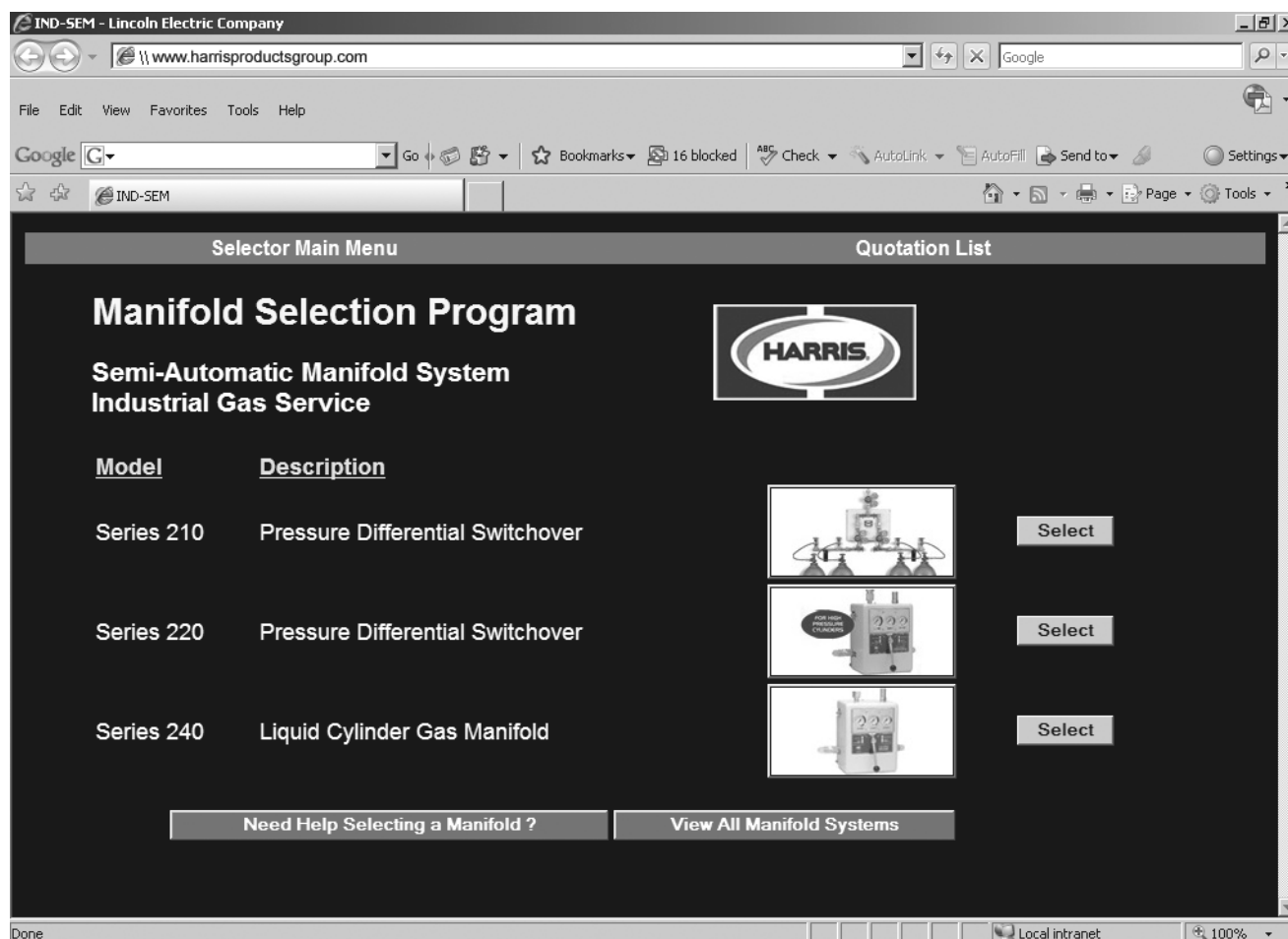
The Harris Products Group, A Lincoln Electric Company, is one of the largest independent manufacturers of pressure and flow control equipment in the world. Harris products are sold and used in over 85 countries.



NEW!

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 where it then compiles all selections in a list which can be emailed to the Harris customer service department for a quote.

The program features graphical 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.





Follow these simple steps:

Go to: www.harrisproductsgroup.com/manifold

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

Step 2 - Select from the appropriate models given

Step 3 - Select number of cylinders

Step 4 - Select gas service

Step 5 - Review and edit selection

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

220 - Lincoln Electric Company

www.harrisproductsgroup.com

File Edit View Favorites Tools Help

Google G Go Bookmarks 16 blocked Check AutoLink AutoFill Send to Settings

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"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="button" value="(-)"/>	<input pigtails"="" type="button" value="24"/>	<input pigtails"="" type="button" value="24"/>	<input type="button" value="CGA 300 - Acetylene"/>
	<input type="button" value="HL"/>	<input type="button" value="1R"/>	<input type="button" value="1L"/>	<input type="button" value="CGA 320 - Carbon Dioxide"/>
	<input type="button" value="HP"/>	<input type="button" value="2R"/>	<input type="button" value="2L"/>	<input type="button" value="CGA 326 - Nitrous Oxide"/>
		<input type="button" value="3R"/>	<input type="button" value="3L"/>	<input type="button" value="CGA 346 - Breathing Air"/>
		<input type="button" value="4R"/>	<input type="button" value="4L"/>	<input type="button" value="CGA 350 - Methane"/>
		<input pigtails"="" type="button" value="36"/>	<input pigtails"="" type="button" value="36"/>	<input type="button" value="CGA 350H - Hydrogen"/>
		<input type="button" value="1R36"/>	<input type="button" value="1L36"/>	<input type="button" value="CGA 510 - Propane / LPG / Fuel Gases"/>
		<input type="button" value="2R36"/>	<input type="button" value="2L36"/>	<input type="button" value="CGA 510A - Acetylene"/>
		<input type="button" value="3R36"/>	<input type="button" value="3L36"/>	<input type="button" value="CGA 540 - Oxygen"/>
		<input type="button" value="4R36"/>	<input type="button" value="4L36"/>	<input type="button" value="CGA 580 - Argon / Nitrogen"/>
				<input type="button" value="CGA 580H - Helium"/>
				<input type="button" value="CGA 590 - Industrial Air"/>

- = 30-125 PSI
HL = for CO₂, N₂O
HP = 100-190 PSI

*** Acetylene systems include pigtails w/ flashback arrestor and check valves.

Done Local intranet 100%



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. This 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. Such a manifold system can supply gas to multiple applications and even entire facilities, eliminating the need for separate cylinders and regulators for each instrument.

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. Further, the integrity of the delivery system will be better protected since cylinder changeouts 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 the system during changeout. In addition, 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 end-use point is extremely important in designing a gas delivery system. Maintaining this gas purity is simplified with a centralized system as described above. Selection of materials of 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 of construction include brass, copper, Teflon®, Tefzel® and Viton®. Packed valves such as needle valves and ball valves are often used for flow shutoff. 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**, 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**. 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, outgassing 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 changeouts.

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, and 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 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 out 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 upon cylinder changeout.

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 cases could result in loss of an entire lab's in-process experiments or even shutdown of a 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, offer added 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	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	N/A
SG 900SS	34	✓	N/A	N/A	N/A	N/A
SG 910BR	46	N/A	✓	N/A	N/A	Opt.
SG 910SS	48	N/A	✓	N/A	N/A	Opt.
SG 920	36	✓	N/A	N/A	N/A	N/A
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.

Note: ✓ = Available N/A = Not Available Opt. = Optional



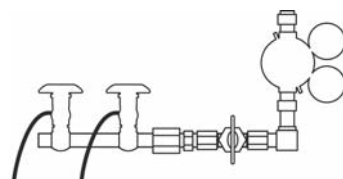
MATERIAL OF CONSTRUCTION		DELIVERY PRESSURE RANGES	HP OXY/ INERT	GAS SERVICE		
BRASS	STAINLESS STEEL			FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS
✓	N/A	up to 200 PSIG	✓	✓	N/A	✓
✓	N/A	up to 200 PSIG	✓	✓	N/A	✓
✓	N/A	up to 200 PSIG	✓	✓	N/A	N/A
✓	N/A	30-125 PSIG	✓	✓	N/A	N/A
✓	N/A	30-125 PSIG	Opt.	N/A	N/A	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		DELIVERY PRESSURE RANGES	HP OXY/ INERT	GAS SERVICE		
BRASS	STAINLESS STEEL			FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS
✓	N/A	up to 125 PSIG	✓	✓	N/A	N/A
N/A	✓	up to 125 PSIG	✓	✓	✓	N/A
✓	N/A	N/A	✓	✓	N/A	✓
N/A	✓	N/A	✓	✓	✓	✓
✓	N/A	0-15, 30-100 to 50-200	✓	✓	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	✓

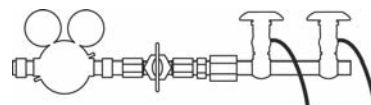
MATERIAL OF CONSTRUCTION		DELIVERY PRESSURE RANGES	HP OXY/ INERT	GAS SERVICE		
BRASS	STAINLESS STEEL			FUEL GASES	CORROSIVE GASES	LIQUID CYLINDERS
✓	N/A	30-60 PSIG	✓	N/A	N/A	N/A
✓	N/A	30-60 PSIG	✓	N/A	N/A	N/A
✓	N/A	100-190 PSIG	✓	N/A	N/A	N/A
✓	N/A	30-70 PSIG	✓	N/A	N/A	N/A
✓	N/A	30-70 PSIG	✓	N/A	N/A	N/A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



Series 200 Single Regulator Manifold



Left Simplex System (OR)



Right Simplex System (OL)

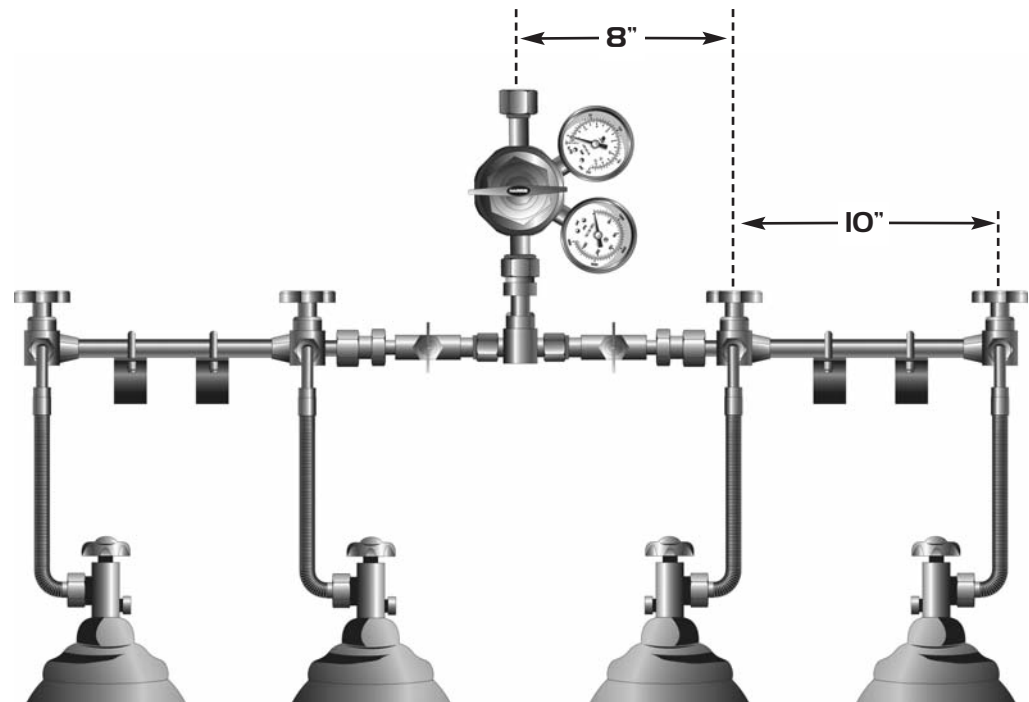
The Series 200 Single Regulator Manifold features the high-flow Model 3510 regulator. The 1/2" brass headers are available in left and right configurations. The outlet regulator is ordered separately based on the required delivery pressure.

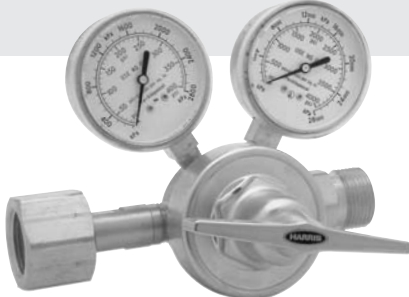
- ▣ Maximum inlet pressure 3000 PSIG
- ▣ Acetylene systems (CGA 510) include dry-type flash arrestors on pigtail end
- ▣ All systems include SS braided pigtails with PTFE lined inner core except those for helium and hydrogen which have a stainless steel inner core
- ▣ Available in simplex style (order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

ORDERING INFORMATION

200	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
200	24" Pigtails 0R 1R 2R 3R 4R 36" Pigtails 0R36 1R36 2R36 3R36 4R36	24" Pigtails 0L 1L 2L 3L 4L 36" Pigtails 0L36 1L36 2L36 3L36 4L36	320- Carbon Dioxide 346- Air (Breathing) 350H- Hydrogen 510A- Acetylene 540- Oxygen 580- N ₂ /Ar 590- Industrial Air 580H- Helium 510 - LPG Fuel Gas

200 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

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

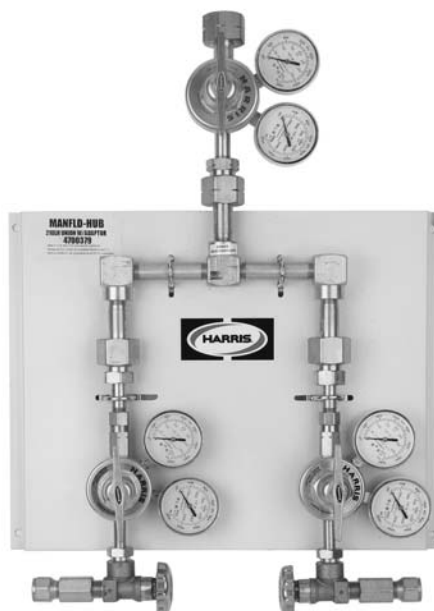
200 SPECIFICATIONS

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



Series 210 Pressure Differential Switchover



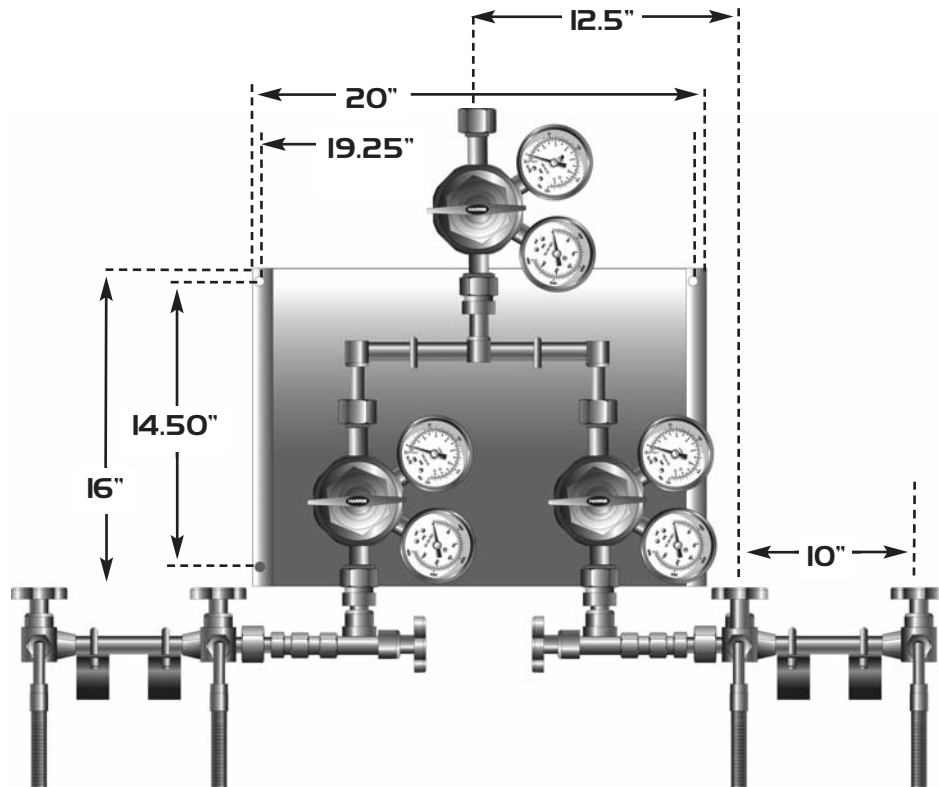
The Series 210 Manifold automatically switches gas supply from the primary cylinder bank to the reserve cylinder bank. Regulators must be manually reset to change the primary and reserve bank. The Series 210 Manifold features 1/2" brass construction with silver brazed connections. The Series 210 features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

- ☐ 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 and 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

ORDERING INFORMATION

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

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

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

210 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



Series 220 Pressure Differential Switchover

**FOR HIGH
PRESSURE
CYLINDERS**

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 lever.

- ▣ 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
- ▣ Master shut off valves included
- ▣ All systems include stainless steel braided pigtails with PTFE lined inner core except helium and hydrogen systems which have a thermoplastic inner core
- ▣ Acetylene systems include:
300 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 - 3/4" NPT
- ▣ 1/2" brass, silver brazed headers

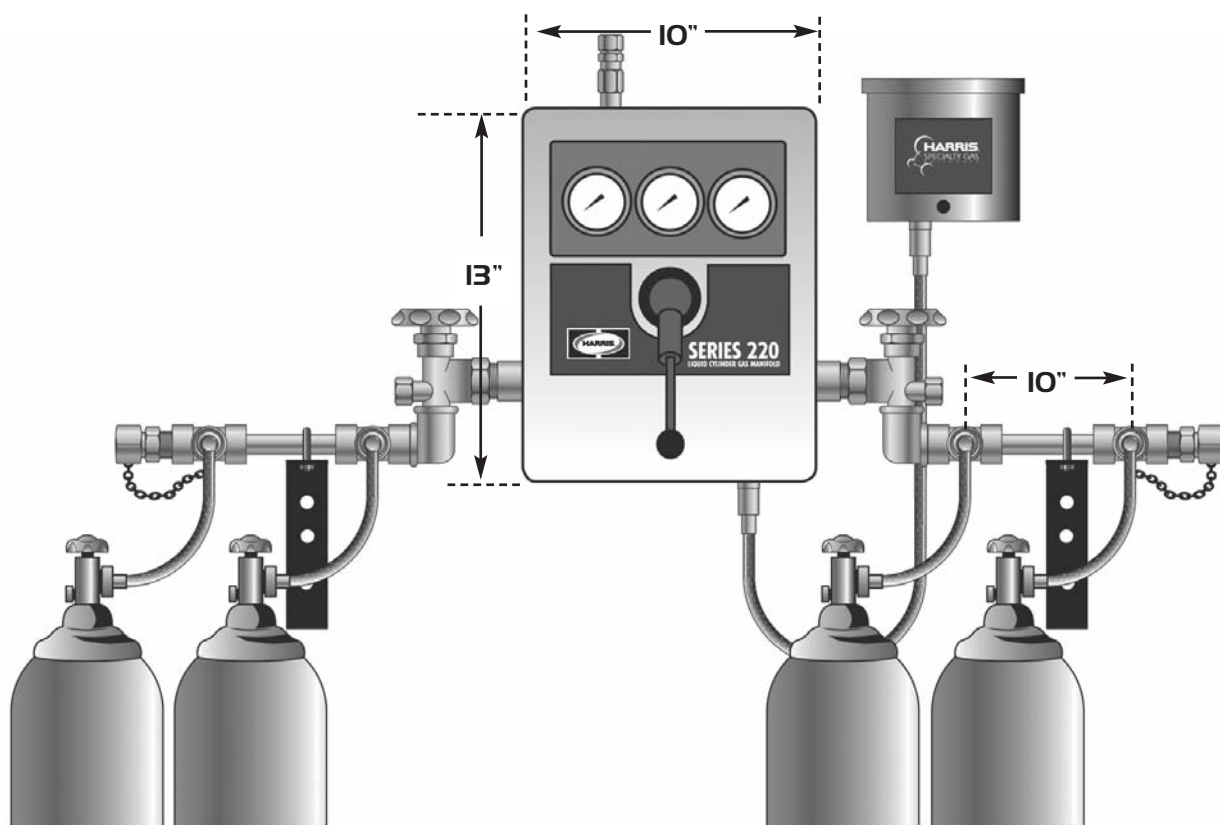


ORDERING INFORMATION

220	XX(XX)	XX(XX)	XXX
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 510- Propane, LPG, Fuel Gases
220HL (30-125 PSIG) For CO ₂ and N ₂ O, 500 SCFH heater included	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	300- Acetylene 540- Oxygen 590- Industrial Air 580H- Helium 580- Argon/Nitrogen 350H- Hydrogen 350- Fuel Gases (Methane)
220HP (50-200 PSIG) Delivery Pressures up to 235 available upon request			



220 TYPICAL LAYOUT



Manifold Depth: 8"
Cabinet Weight: 35 lbs

220 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	400 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
220HP (CO ₂ , N ₂ O)	2000 PSIG	500 SCFH	50-200 PSIG



Series 230 Fully Automatic Switchover

The Series 230 Manifold provides fully automatic system control. An integrated circuit board monitors cylinder bank pressure electronically, controlling changeover 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".

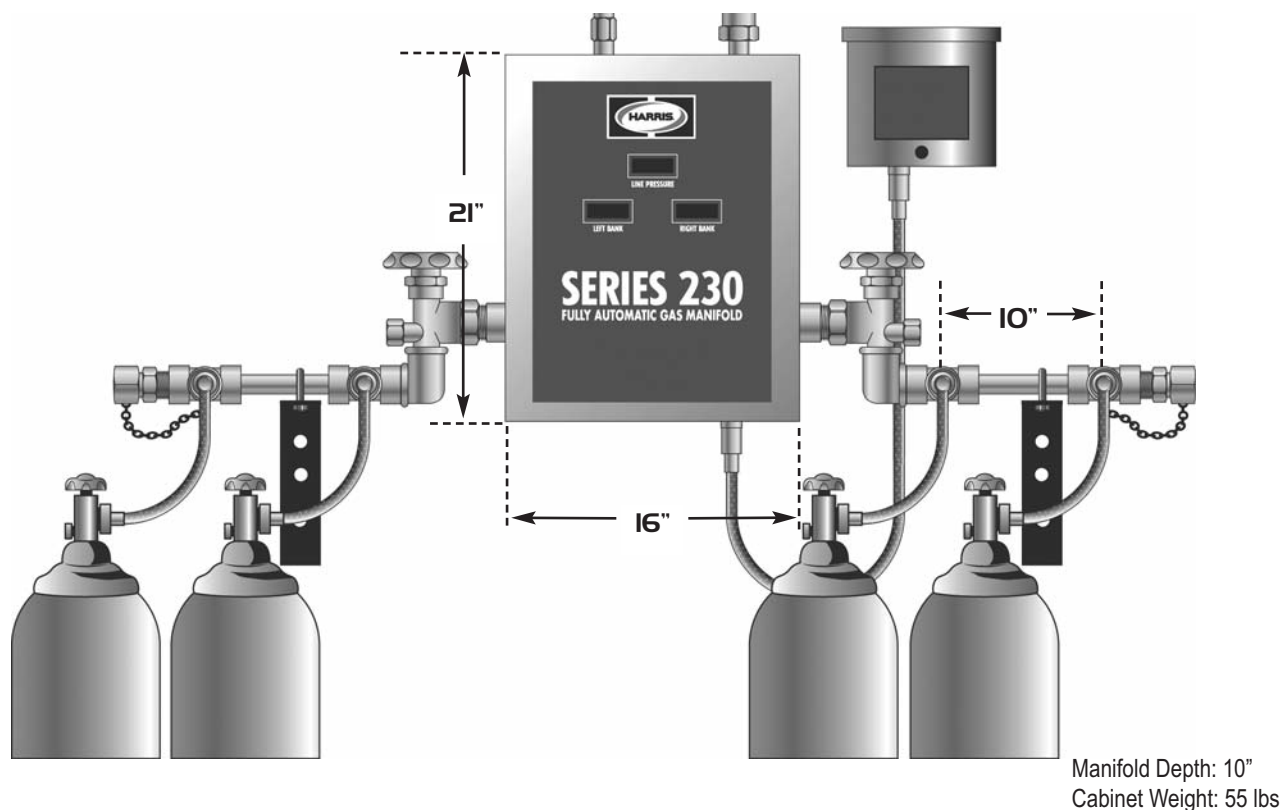
- ▣ Connects to remote alarm systems. Up to 3 amps 30 volts (DC) or 2 amps 250 volts (AC). Visual remote alarm is standard. Audio/Visual alarm optional.
- ▣ Fully Automatic Changeover - No levers to reset. Continuous, uninterrupted gas flow. The only manual function is to replace depleted cylinders.
- ▣ Displays readout in PSIG, KPA or BAR
- ▣ Micro controller monitors all functions and controls changeover.
- ▣ 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

230	XX(XX)	XX(XX)	XXX
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)			

230 TYPICAL LAYOUT



230 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



Series 240 Liquid Cylinder Gas Manifold

**FOR LIQUID
CYLINDERS**

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 lever.

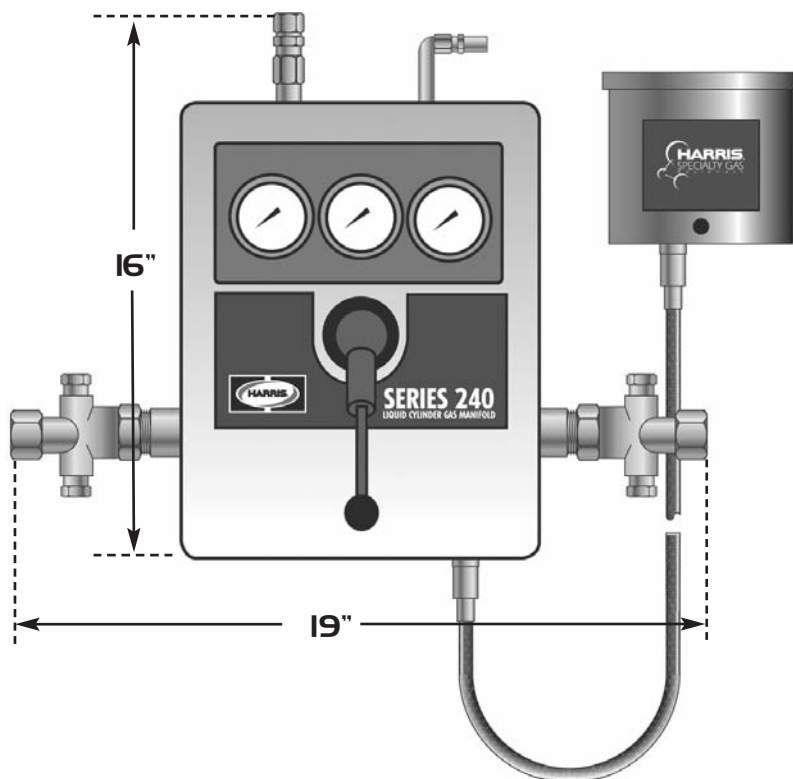
- ▣ Connects to remote alarm systems. Up to 3 amps 30 volts (DC) or 2 amps 250 volts (AC) Visual remote alarm is standard. Audio/Visual alarm optional.
- ▣ Electrical - 115 volts (AC).
- ▣ Maximum inlet pressure 350 PSIG
- ▣ Manifold outlet - 1/2" NPT
- ▣ Relief valve outlet - 1/4" NPT
- ▣ 240 Series for use with 235 PSIG relief valve liquid cylinders
- ▣ 240HP Series for use with 350 PSIG relief valve liquid cylinders



ORDERING INFORMATION

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

240 TYPICAL LAYOUT



240 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



US-S10

Compact Two-Gas Blender for Welding Gases

Harris Model US-S10 is a small, compact, wall mounted variable ratio gas blender designed to create a mix of welding shielding gases from pure gas cylinders. The gases are mixed in a proportion 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. The US-S10 requires no receiver tank and no electricity to operate.

Features

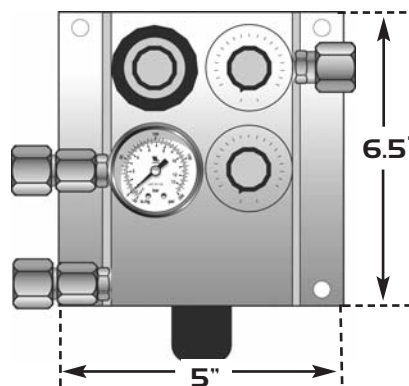
- ▣ Ar/CO₂ variable ratio up to 100%
- ▣ Ar/O₂ variable ratio up to 25%
- ▣ Flow range of 20-212 SCFH
- ▣ Inlet/Outlet Connections – 1/4" FNPT
- ▣ Accuracy +/- 2%

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

Options

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



ORDERING INFORMATION

US-S10		
SERIES	GAS SERVICE	PART NO.
US-S10-1	Ar/CO ₂	4302053
US-S10-2	Ar/O ₂	4302054



US-L20

Two-Gas Cabinet Style Blender System

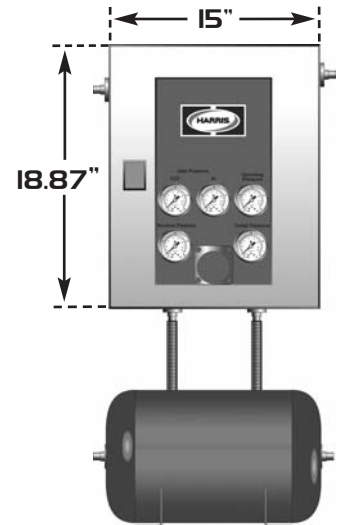
Harris Model US-L20 variable ratio gas blenders are designed to create a precise mix of welding shielding gases from pure gas cylinders. The gases are mixed in a proportion defined by the user with the turn of a single knob. The mixed gas is then distributed to the welding machines through the pipeline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

Features

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

Specifications

- ▣ Min. inlet pressure – 116 PSIG
- ▣ Max. 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



Wall Mounted Blender Cabinet
w/ receiver tank P/N 4302070

ORDERING INFORMATION

US-L20		
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



US-L10

Two Gas Cabinet Style Blender System

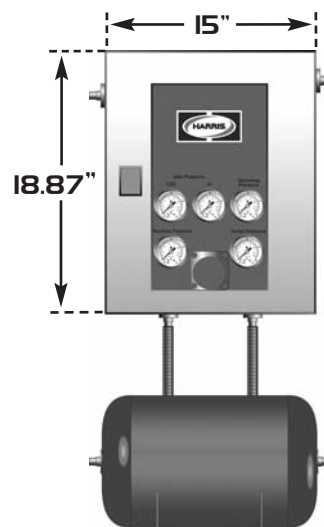
Harris Model US-L10 variable ratio gas blenders are designed to create a precise mix of welding shielding gases from pure gas cylinders. The gases are mixed in a proportion defined by the user with the turn of a single knob. The mixed gas is then distributed to the welding machines through the pipeline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

Features

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

Specifications

- ▣ Ar/He variable ratio up to 100%
- ▣ Min. inlet pressure – 116 PSIG
- ▣ Max. inlet pressure – 145 PSIG
- ▣ Difference between the two inlet pressures – 40 PSIG max
- ▣ Outlet pressure – 36 PSIG max
- ▣ Max 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



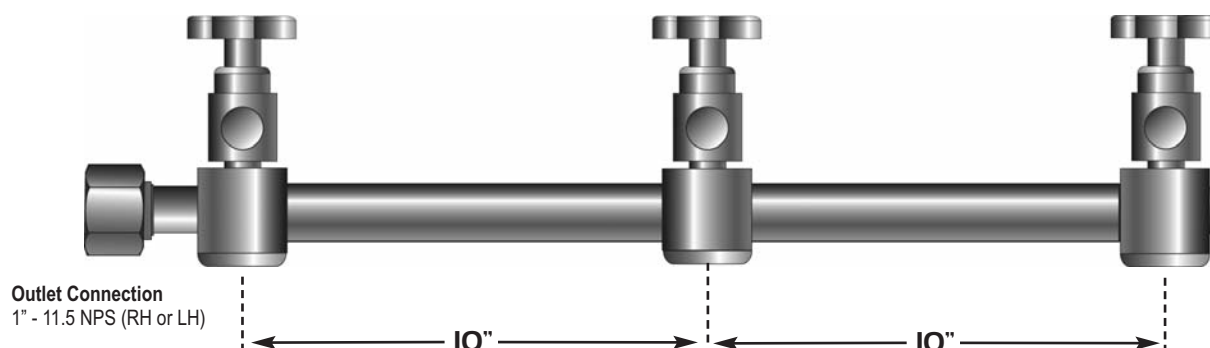
Wall Mounted Blender Cabinet
w/ receiver tank P/N 4302070

ORDERING INFORMATION

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

Industrial Manifold Headers

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



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.
BR-Brass	2 Cylinders	9103309	9103311	9103310	9103312
	3 Cylinders	9103313	9103315	9103314	9103316
	4 Cylinders	9103317	9103319	9103318	9103320



Industrial Manifold Accessories



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 - Pigtails include checkvalve at cylinder connection

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



Industrial Manifold Accessories



Remote Alarm Kits Not For Fuel Gas Service

PART NO.	DESCRIPTION	USE WITH MANIFOLD SERIES
4300340	Visual Only	Standard on 220, 230, 240 Systems
4300341	Visual and Audio	Optional on 220, 230, 240 Systems
4300342	Visual and Audio for Two Gas System	Optional on 220, 230, 240 Systems

Remote Alarm Kits For Fuel Gas Service

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

Fuel Gas Safety Kits (kit includes piping)

PART NO.	GAS SERVICE	DESCRIPTION	FLOW CAPACITY	USE WITH MANIFOLD SERIES	RELIEF VALVES
4300346	LPG/H ₂	Dry Arrestor Kit	300 SCFH	Optional on 220 LPG/H ₂ Systems	35 PSIG
4300347	Acetylene	Hydraulic Arrestor Kit	300 SCFH	Optional on 220 Acetylene Systems	20 PSIG

Flashback Arrestors

PART NO.	GAS SERVICE	DESCRIPTION	FLOW CAPACITY	INLET AND OUTLET CONNECTIONS	RELIEF VALVES
4300348	Acetylene	Dry Arrestor	300 SCFH	1/2" NPT	20 PSIG
4300349	LPG/Hydrogen	Dry Arrestor	300 SCFH	1/2"NPT	35 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	-	-	-



Industrial Manifold Accessories

Header Extension

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



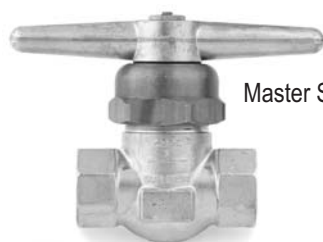
Adjustable Wall Bracket

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 Shutoff Valve



Packed Stem Valve



Station Valve

Flash Arrestors

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



Provides 3-way protection which prevents the flashback of fuel gas and oxygen. An internal check valve prevents backflow while 3 feet of coiled stainless steel tubing absorbs the heat and extinguishes the flame from a flashback. The flashback closes the shut-off valve eliminating the possibility of the flame propagating upstream. The flash arrestor can be used with oxygen and/or fuel gases.

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

Industrial Manifold Accessories

Automatic Electric Heaters for Compressed Gases

Gas heaters are recommended where conditions or flow rates may tend to cause equipment freeze-up. Heater units are thermostatically controlled and flow can be 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 of 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
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

Station Drops

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



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



BACK ENTRY

Model 447
Back Entry
"C" Connection Shown

Model 447 High Flow Station Regulators

The Model 447 regulators provide high gas flow from gas distribution systems.

- ▣ 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 (see page 29)

MADE IN USA 3 YEAR WARRANTY

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	AIR/INERT GAS "OIL FREE"	200	0-200	400	7/8"-14-RH(F)	9/16"-18 RH
4000559	447-50-CRM		200	0-50	100	7/8"-14-RH(M)	5/8"-18 RH(F)
4000561	447-125-CRM		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)

Model 547 High Flow Station Regulators

The Model 547 provides high gas flows from gas distribution systems.

- ▣ 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)*

MADE IN USA 3 YEAR WARRANTY

SIDE ENTRY

Model 547
Side Entry
"C" Connection Shown



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		200	0-50	100	7/8"-14-RH(F) 024	9/16"-18 RH
4000607	547-125-CR	OXYGEN	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 "OIL FREE"	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		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, CO ₂	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



Model 647 Panel Mount Regulators

- ▣ 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 max psi adjustment
- ▣ 1/4" NPT ports



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



Model 55-2 Pipeline Flowmeter

- ▣ 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 Port
Outlet - 9/16"-18-RH (m)

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/H ₂ 90	Helium/Hydrogen	0-100 (0-140)@20 PSIG	4000 PSIG	9/16"-18(F)	5/8"-18(F)
5400613	55-2 N ₂ /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

**NEW!**

Model 3520 High Flow Manifold Regulator

Features

- 2 3/4" stainless steel diaphragm eliminates contamination from diffusion or outgassing
- 1/2" FNPT inlet and outlet
- 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)

Cylinder Adapter Kits

- CGA 540 Adapter Kit P/N: 9103615
- CGA 580 Adapter Kit P/N: 9103616
- CGA 680 Adapter Kit P/N: 9103617



ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE		INLET /OUTLET FITTING
		DELIVERY	OUTLET GAUGE	
3003560	HP 3520	0-15 PSIG	30 psi/2 bar	000 (1/2" FNPT)
3003561		0-50 PSIG	100 psi/7 bar	
3003562		0-125 PSIG	200 psi/14 bar	
3003563		0-250 PSIG	400 psi/28 bar	
3003564		0-500 PSIG	1000 psi/70 bar	

NEW!

Model 3530 High Flow Manifold Regulator

Features

- 2 3/4" stainless steel diaphragm eliminates contamination from diffusion or outgassing
- 1/2" FNPT inlet and outlet
- 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)

Cylinder Adapter Kits

- CGA 540 Adapter Kit P/N: 9103615
- CGA 580 Adapter Kit P/N: 9103616
- CGA 680 Adapter Kit P/N: 9103617

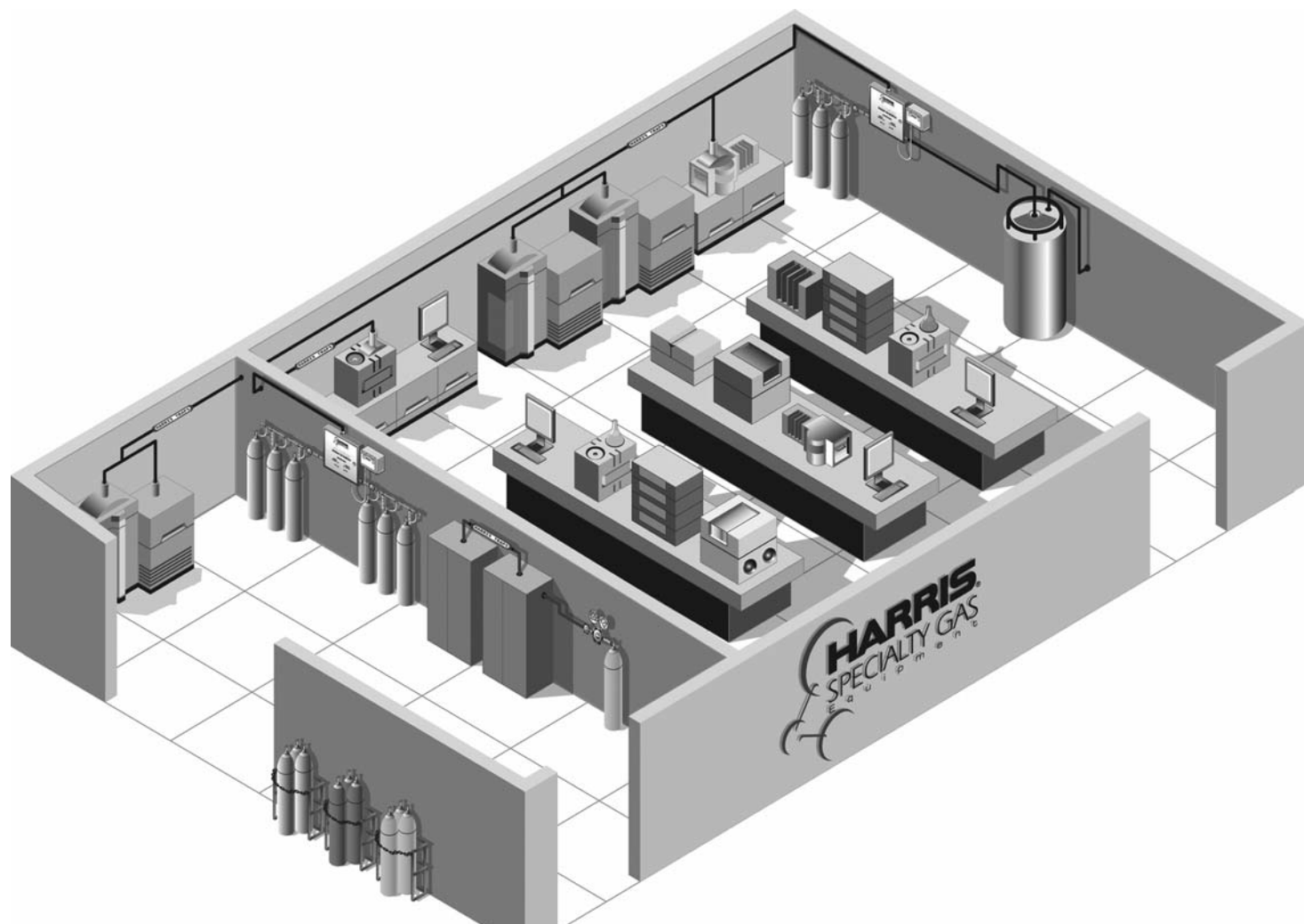


ORDERING INFORMATION

PART NO.	MODEL NO.	DELIVERY PRESSURE		INLET /OUTLET FITTING
		DELIVERY	OUTLET GAUGE	
4000800	HP 3530	0-15 PSIG	30 psi/2 bar	000 (1/2" FNPT)
4000801		0-50 PSIG	100 psi/7 bar	
4000802		0-125 PSIG	200 psi/14 bar	
4000803		0-250 PSIG	400 psi/28 bar	
4000804		0-500 PSIG	1000 psi/70 bar	

Specialty Gas / Laser Manifolds

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 design components insure gas integrity from source to point-of-use for laboratory, research, analytical and high purity laser gas applications.



HP 770 Back-up System



**FOR GAS
CHROMATOGRAPHY**

SG 910 Mounting Station



SG 900 Switchover



**FOR CO2
INCUBATORS**

SG 960 Manifold



**FOR CRITICAL
GAS APPLICATIONS**



SG 900 BR High Purity Switchover System

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 (CGA510A) 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



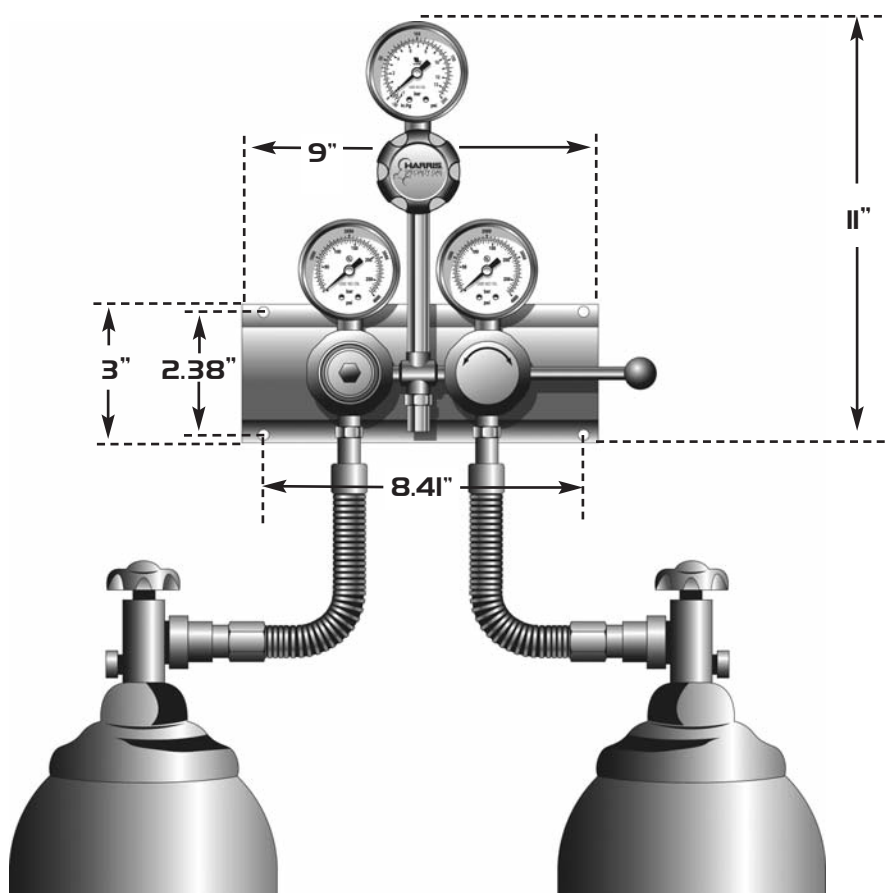
Options

G 277 Two Cylinder Process Station- P/N: 4302673
G 400P Four Cylinder Process Station- P/N: 4302675
G 600P Six Cylinder Process Station- P/N: 4302676
High Pressure Alarm System, 3000 PSIG CP Brass- P/N: 4300324
Low Pressure Alarm System, 400 PSIG CP Brass- P/N: 4300325
Manifold Purge, Left Hand Inlet- P/N: 4300428
Manifold Purge, Right Hand Inlet- P/N: 4300429

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 36" Pigtails 1R36 2R36 3R36 4R36	24" Pigtails 1L 2L 3L 4L 36" Pigtails 1L36 2L36 3L36 4L36	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)

SG 900 BR TYPICAL LAYOUT



900 BR 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



SG 900 SS Stainless Steel Switchover System

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 (CGA510A) 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

Options

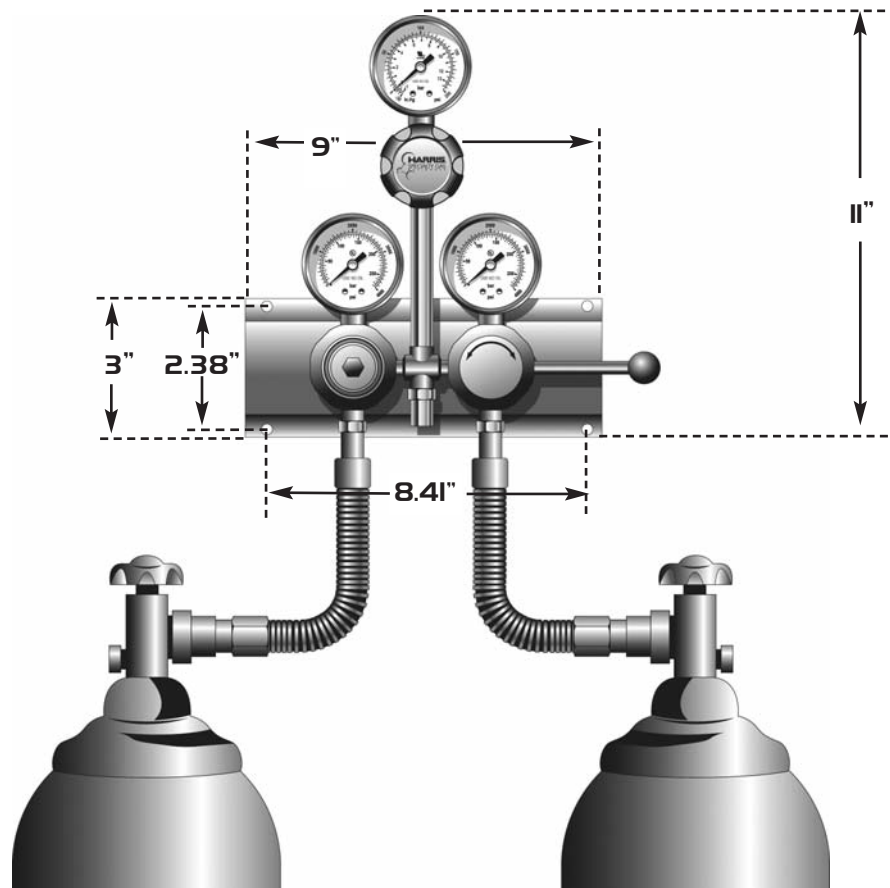
G 277 Two Cylinder Process Station- P/N: 4302673
 G 400P Four Cylinder Process Station- P/N: 4302675
 G 600P Six Cylinder Process Station- P/N: 4302676
 High Pressure Alarm System, 3000 PSIG CP Brass- P/N: 4300326
 Low Pressure Alarm System, 400 PSIG CP Brass- P/N: 4300327



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 36" Pigtails 1R36 2R36 3R36 4R36	24" Pigtails 1L 2L 3L 4L 36" Pigtails 1L36 2L36 3L36 4L36	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

SG 900 SS TYPICAL LAYOUT



900 SS 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



SG 920 Pressure Differential Switchover

The SG 920 series manifold provides uninterrupted gas supply for non-corrosive high purity applications. The end user resets the primary bank by turning the control knob. Gas applications include high purity, process analyzers, laser, research sample systems, gas chromatography, emission monitoring systems and EPA protocol mix gases.

Features

- ▣ Stainless steel diaphragm regulators
- ▣ Packless diaphragm valve tee purge inlet
- ▣ Maximum inlet pressure 3000 PSIG
(2000 psi for CO₂ & N₂O systems)
- ▣ Manifold outlet: 1/4" OD tube
- ▣ Relief valve outlet: 1/2" OD tube
- ▣ Acetylene systems include pigtails
with individual Flashback arrestors
and check valves
- ▣ Stainless steel lined pigtails

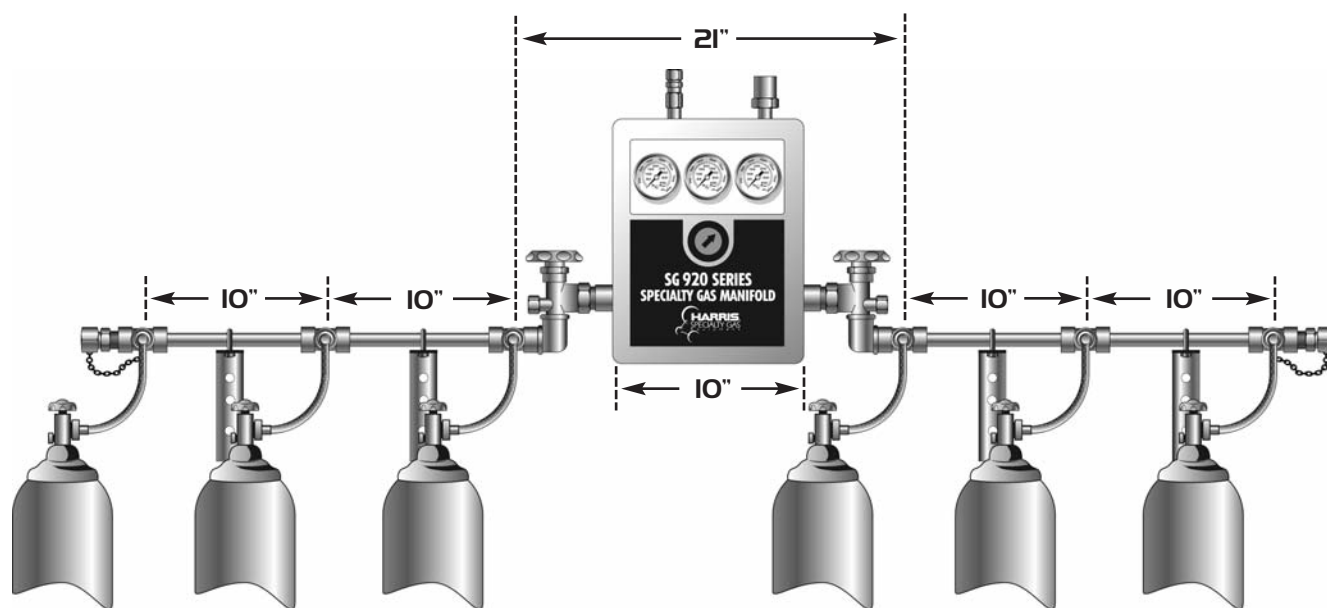


ORDERING INFORMATION

SG 920	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
SG 920 (30-100 PSIG)	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	300- Acetylene 320- Carbon Dioxide 326- Nitrous Oxide 346- Air (Breathing) 510A- Acetylene
SG 920 - Acetylene (0-15 PSIG)	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	510- Propane, LPG, Fuel Gases 540- Oxygen 590- Air (Industrial) 580H- Helium 580- Argon/Nitrogen 350H- Hydrogen 350- Fuel Gases (Methane)
SG 920 HP (50-200 PSIG)			



920 TYPICAL LAYOUT



Manifold Depth: 8"
Cabinet Weight: 35 lb.

920 SPECIFICATIONS

MODEL	MAXIMUM INLET PRESSURE	MAXIMUM FLOW RATE	INTERNAL ADJUSTABLE LINE REGULATOR DELIVERY RANGE
920	3000 PSIG	250 SCFH	30-100 PSIG
920 (CO ₂ , N ₂ O)	2000 PSIG	35 SCFH	30-100 PSIG
920 HP	3000 PSIG	250 SCFH	50-200 PSIG
920 (Acetylene, LPG)	400 PSIG	75 SCFH	0-15, 0-30 PSIG



SG 960 BR

Fully Automatic Switchover

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 in installation and maintenance
- ▣ Modular system designed for expansion
- ▣ Comes standard with remote visual alarm
- ▣ Manifold outlet: 1/2" FNPT
- ▣ 24" or 36" flexible all stainless steel pigtails with CGA integral check valve
- ▣ 1/2" brass, silver brazed headers w/ diffusion resistant diaphragm header valves

Options

- 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

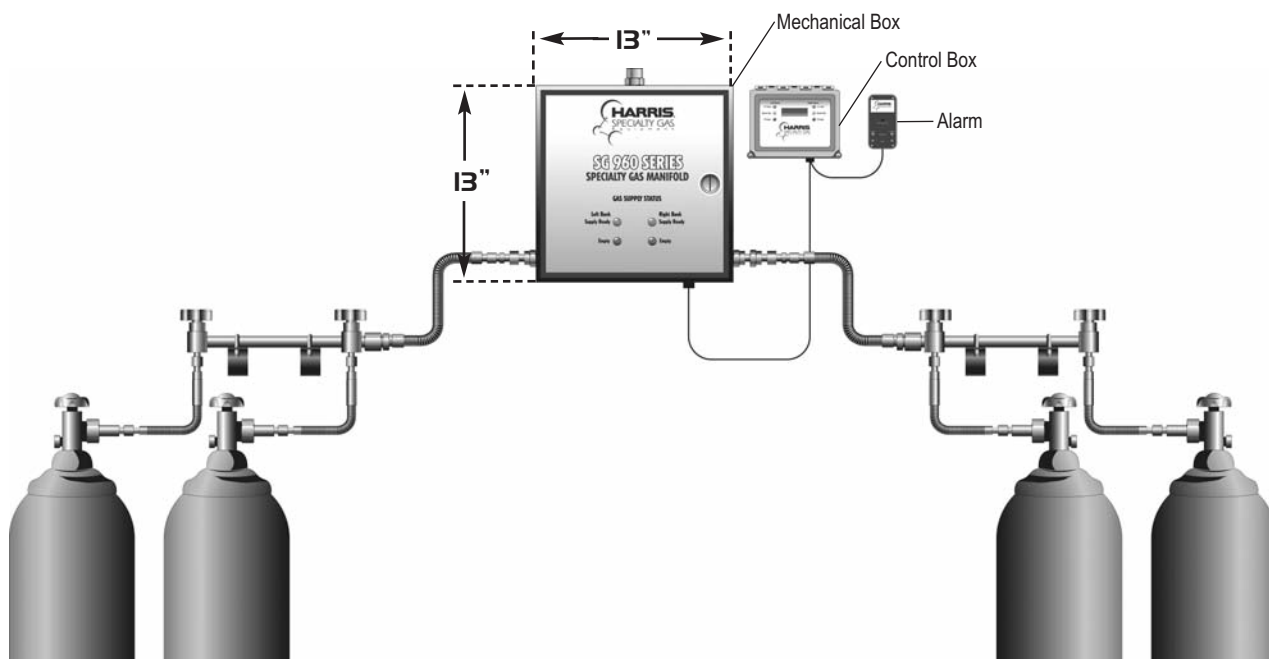


ORDERING INFORMATION

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



960 BR TYPICAL LAYOUT



REPLACEMENT PARTS

Mechanical Box - P/N 4302101

Control Box - P/N 4302100

960 BR 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



SG 960 SS

Fully Automatic Switchover

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 in installation and maintenance
- ▣ Modular system designed for expansion
- ▣ Comes standard with remote visual alarm
- ▣ Manifold outlet: 1/4" FNPT
- ▣ 24" or 36" flexible all stainless steel pigtails with CGA integral check valve
- ▣ 1/2" stainless steel TIG welded headers

Options

- 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

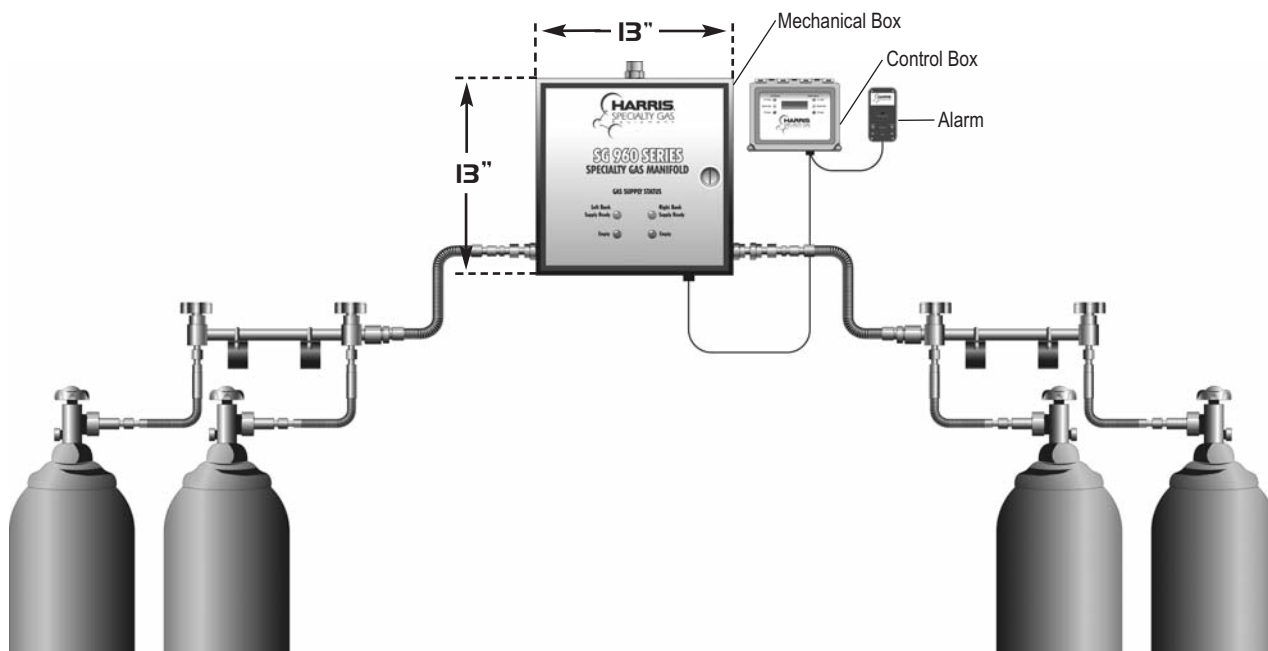


ORDERING INFORMATION

SG 960 SS	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
SG 960 SS	24" Pigtails 1R 2R 3R 4R 36" Pigtails 1R36 2R36 3R36 4R36	24" Pigtails 1L 2L 3L 4L 36" Pigtails 1L36 2L36 3L36 4L36	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



960 SS TYPICAL LAYOUT



REPLACEMENT PARTS

Mechanical Box - P/N 4301400

Control Box - P/N 4302100

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



SG 960 LE

Fully Automatic Switchover

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 in installation
- ▣ Modular system designed for expansion
- ▣ Comes standard with 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

Options

- 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

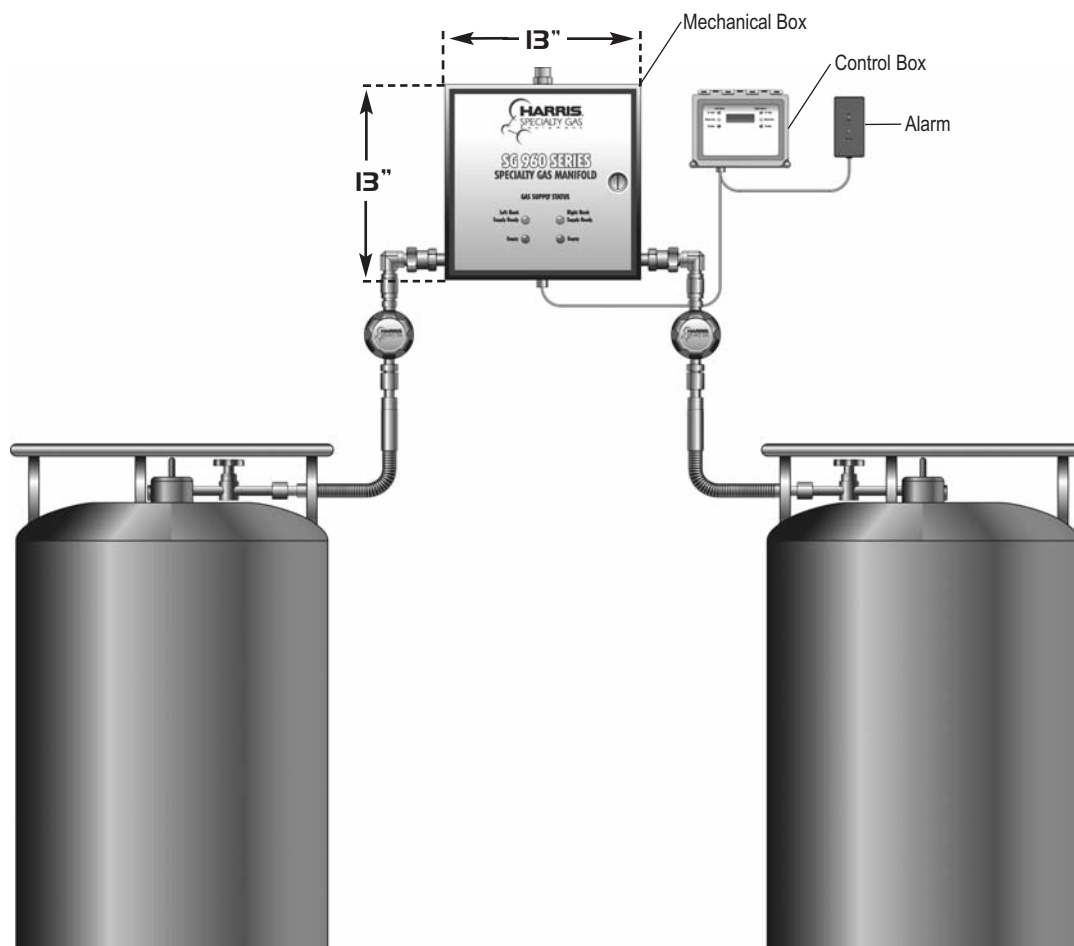


ORDERING INFORMATION

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



960 LE TYPICAL LAYOUT



REPLACEMENT PARTS

Mechanical Box - P/N 4302103

Control Box - P/N 4302100

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) 2 X 2 Systems: 525 SCFH (165 SCFH for CO ₂ & N ₂ O)	20-225 PSIG



SG 960 LAM

Fully Automatic Switchover

The SG 960 LAM is a fully automatic switchover manifold for high purity gases, up to 3000 PSIG. The SG 960 LAM is 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.

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

Options

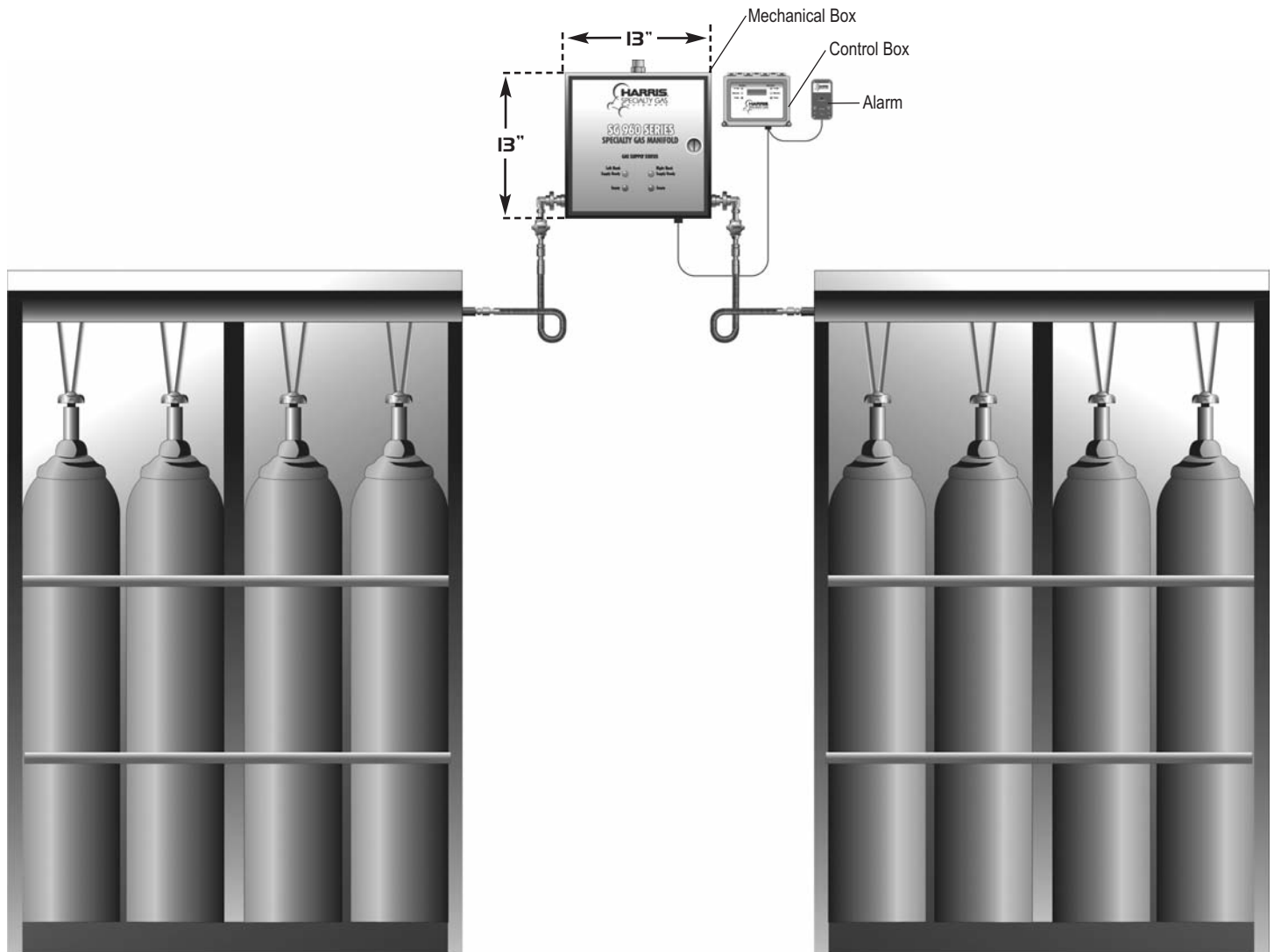
- 4302112- Cable Extension 100 ft.
- 4302113- Cable Extension 25 ft.
- 4302114- Alarm Cable Extension 100 ft.
- 4302115- Alarm Cable Extension 25 ft.
- 4302104- Audio/Visual Alarm, Remote for SG 960



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

960 LAM TYPICAL LAYOUT



REPLACEMENT PARTS

Mechanical Box - P/N 4302111

Control Box - P/N 4302100

960 LAM SPECIFICATIONS

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



SG 910 BR

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

Features

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



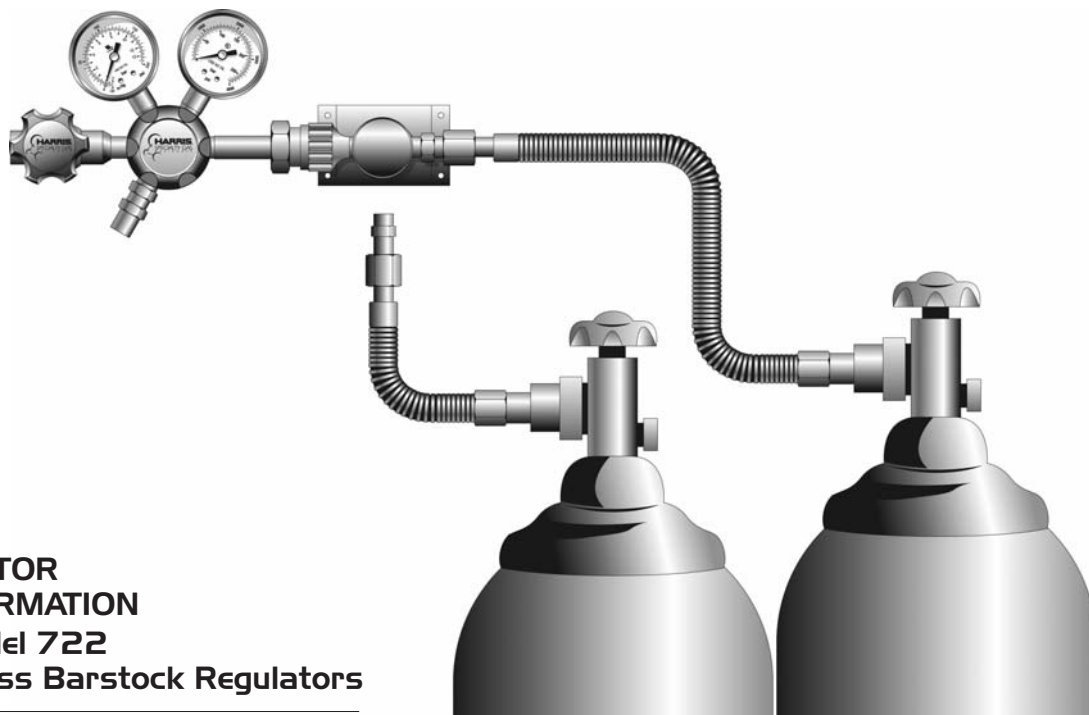
Shown with Model 721 regulator sold separately

ORDERING INFORMATION

PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
1 Cylinder			
4700465	910BR-1-320	CGA 320-Carbon Dioxide	4702814
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 Cylinders			
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



RECOMMENDED OUTLET REGULATOR ORDERING INFORMATION Model 721 & Model 722 High Purity - Brass Barstock Regulators

- ▣ Brass barstock bodies
- ▣ One-piece encapsulated seat
- ▣ Stainless steel diaphragm
- ▣ External relief valve
- ▣ Cv = Single stage .08 - Two stage .06



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

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

Related Options

DESCRIPTION	PART NO.
Rotatable Venting Kit	9100875
Regulator Alarm Kits-	
HP Chrome Plated Brass	4300424
LP Chrome Plated Brass	4300425

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

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



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 are 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

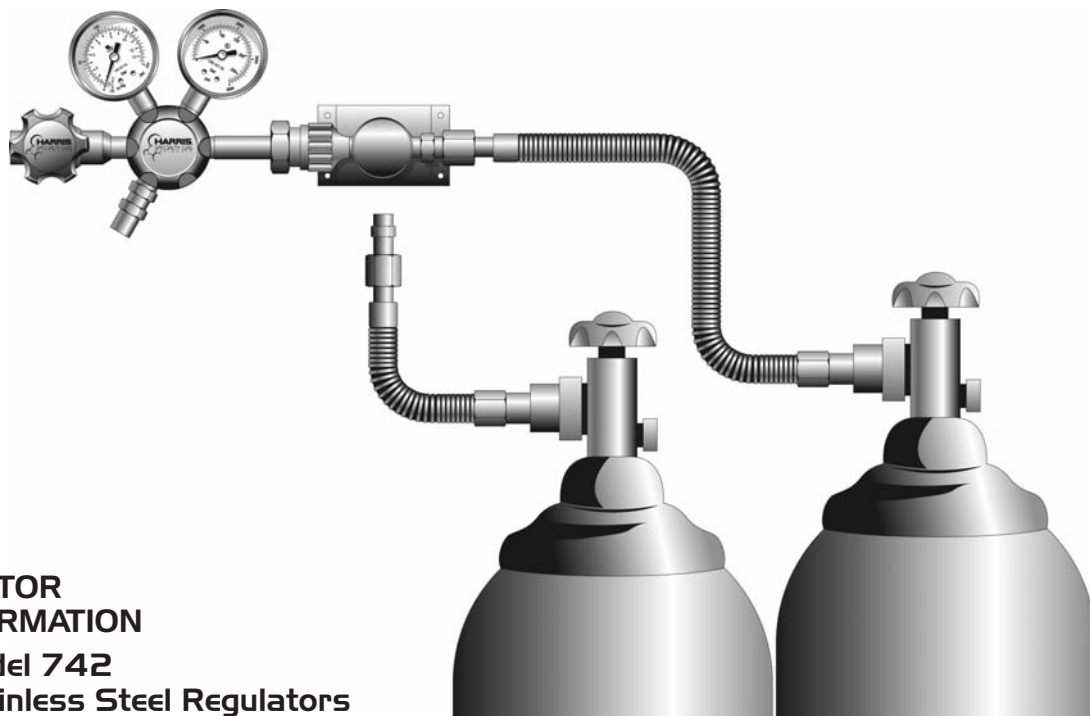


Shown with Model 741 regulator sold separately

ORDERING INFORMATION

PART NO.	MODEL NO.	GAS SERVICE	PART NO. BRACKET ONLY (NO PIGTAIL)
1 Cylinder			
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 Cylinders			
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



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

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

Related Options

DESCRIPTION	PART NO.
Rotatable Venting Kit	9100875
Regulator Alarm Kits-	
HP Stainless Steel	4300426
LP Stainless Steel	4300427

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

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



SG 770

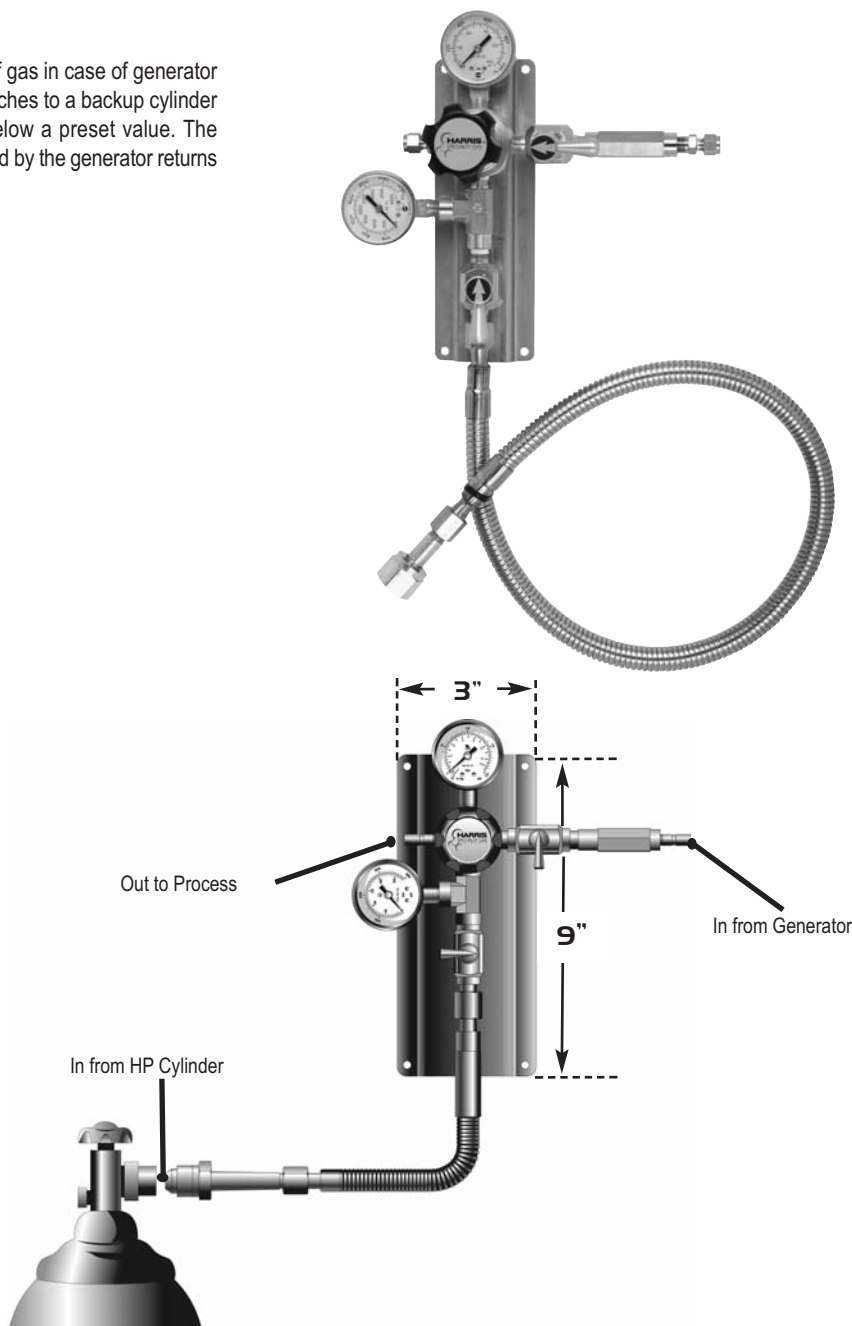
Model SG 770 provides a continuous backup supply of gas in case of generator failure or loss of power. The system automatically switches to a backup cylinder of gas when the generator supply pressure drops below a preset value. The process will automatically reverse when the gas supplied by the generator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

Specifications

- ▣ Max. inlet pressure – 3000 PSIG
- ▣ Required pressure differential 15-20 PSIG
- ▣ Max 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)

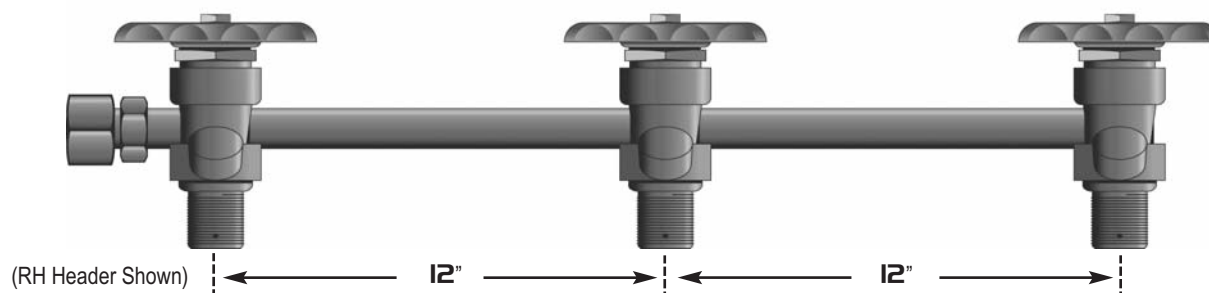
Swagelok® is a registered trademark of Swagelok Company.

High Purity Manifold Headers

- ▣ 90° connections for ease of connection
- ▣ Silver brazed brass or TIG welded stainless steel connection
- ▣ Outlet connection CGA 580
- ▣ Header valves are diaphragm style with CGA 346 connections



Three Header Assembly



Adjustable Wall Bracket

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

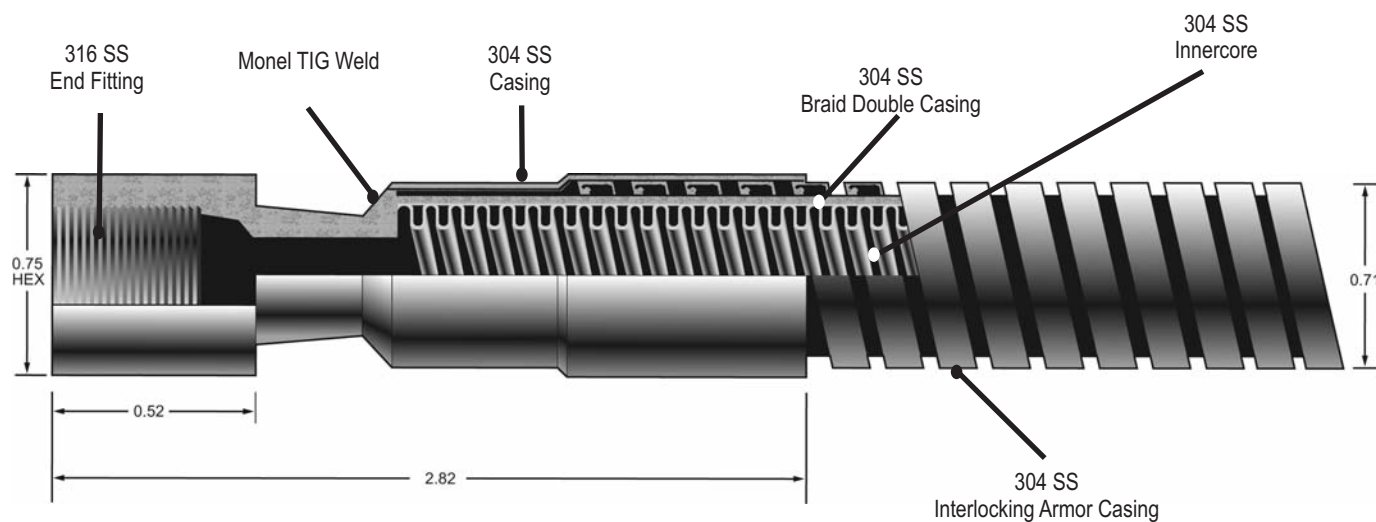
HEADER EXTENSION

PART NO.	DESCRIPTION	NO. OF CYLINDERS
Brass Headers		
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		
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 Pigtails

CROSS SECTIONAL VIEW



Pigtails - All Harris specialty gas pigtails have armor casing and SS lining

PART NO.	DESCRIPTION	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	9103399	36" Stainless Steel CGA 346 X Brass CGA W/CV PIGTAIL-ASY, 3' CGA 346 TO CGA 320
9005794	3' Armor Case Stainless Steel 1/4" FNPT X 1/4" FNPT	9103400	PIGTAIL-ASY, 3' CGA 346 TO CGA 326
9005795	6' Armor Case Stainless Steel 1/4" FNPT X 1/4" FNPT	9103401	PIGTAIL-ASY, 3' CGA 346 TO CGA 346
PTFE Lined 1/4" FNPT X 1/4" FNPT			
9005799	4' Armor Case PTFE Lined 1/4" FNPT X 1/4" FNPT	9103402	PIGTAIL-ASY, 3' CGA 346 TO CGA 350
9005800	2' Armor Case PTFE Lined 1/4" FNPT X 1/4" FNPT	9103403	PIGTAIL-ASY, 3' CGA 346 TO CGA 540
9005801	3' Armor Case PTFE Lined 1/4" FNPT X 1/4" FNPT	9103404	PIGTAIL-ASY, 3' CGA 346 TO CGA 580
9005807	6' Armor Case PTFE Lined 1/4" FNPT X 1/4" FNPT	9103405	PIGTAIL-ASY, 3' CGA 346 TO CGA 590
24" Stainless Steel CGA 346 X Brass CGA W/CV			
9103392	PIGTAIL-ASY, 2' CGA 346 TO CGA 320	9103410	24" Stainless Steel 1/4" FNPT X Brass CGA W/CV PIGTAIL-ASY, 2' CGA 320
9103393	PIGTAIL-ASY, 2' CGA 346 TO CGA 326	9103411	PIGTAIL-ASY, 2' CGA 326
9103394	PIGTAIL-ASY, 2' CGA 346 TO CGA 346	9103412	PIGTAIL-ASY, 2' CGA 346
9103395	PIGTAIL-ASY, 2' CGA 346 TO CGA 350	9103413	PIGTAIL-ASY, 2' CGA 350
9103396	PIGTAIL-ASY, 2' CGA 346 TO CGA 540	9103414	PIGTAIL-ASY, 2' CGA 540
9103397	PIGTAIL-ASY, 2' CGA 346 TO CGA 580	9103415	PIGTAIL-ASY, 2' CGA 580
9103398	PIGTAIL-ASY, 2' CGA 346 TO CGA 590	9103416	PIGTAIL-ASY, 2' CGA 590

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



Pigtails - All Harris specialty gas pigtails have armor casing and SS lining

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
36" Stainless Steel 1/4" FNPT X Brass CGA W/CV		24" Stainless Steel 1/4" FNPT X SS CGA W/CV	
9103417	PIGTAIL-ASY, 3' CGA 320	9103441	PIGTAIL-ASY, 2' CGA 320 SS
9103418	PIGTAIL-ASY, 3' CGA 326	9103442	PIGTAIL-ASY, 2' CGA 326 SS
9103419	PIGTAIL-ASY, 3' CGA 346	9103443	PIGTAIL-ASY, 2' CGA 346 SS
9103420	PIGTAIL-ASY, 3' CGA 350	9103444	PIGTAIL-ASY, 2' CGA 350 SS
9103421	PIGTAIL-ASY, 3' CGA 540	9103445	PIGTAIL-ASY, 2' CGA 500 SS
9103422	PIGTAIL-ASY, 3' CGA 580	9103446	PIGTAIL-ASY, 2' CGA 540 SS
9103423	PIGTAIL-ASY, 3' CGA 590	9103447	PIGTAIL-ASY, 2' CGA 580 SS
72" Stainless Steel 1/4" FNPT X Brass CGA W/CV		9103448	PIGTAIL-ASY, 2' CGA 590 SS
9101996	PIGTAIL-ASY, 72" CGA 320	9103479	PIGTAIL-ASY, 2' CGA 240 SS
9101997	PIGTAIL-ASY, 72" CGA 540	9103480	PIGTAIL-ASY, 2' CGA 330 SS
9101998	PIGTAIL-ASY, 72" CGA 580	9103481	PIGTAIL-ASY, 2' CGA 660 SS
24" Stainless Steel CGA 346 X SS CGA W/CV		9103482	PIGTAIL-ASY, 2' CGA 705 SS
9103459	PIGTAIL-ASY, 2' CGA 346 TO CGA 320 SS	36" Stainless Steel 1/4" FNPT X SS CGA W/CV	
9103460	PIGTAIL-ASY, 2' CGA 346 TO CGA 326 SS	9103449	PIGTAIL-ASY, 3' CGA 320 SS
9103461	PIGTAIL-ASY, 2' CGA 346 TO CGA 346 SS	9103450	PIGTAIL-ASY, 3' CGA 326 SS
9103462	PIGTAIL-ASY, 2' CGA 346 TO CGA 350 SS	9103451	PIGTAIL-ASY, 3' CGA 346 SS
9103463	PIGTAIL-ASY, 2' CGA 346 TO CGA 500 SS	9103452	PIGTAIL-ASY, 3' CGA 350 SS
9103464	PIGTAIL-ASY, 2' CGA 346 TO CGA 540 SS	9103453	PIGTAIL-ASY, 3' CGA 500 SS
9103465	PIGTAIL-ASY, 2' CGA 346 TO CGA 580 SS	9103454	PIGTAIL-ASY, 3' CGA 540 SS
9103466	PIGTAIL-ASY, 2' CGA 346 TO CGA 590 SS	9103455	PIGTAIL-ASY, 3' CGA 580 SS
9103487	PIGTAIL-ASY, 2' CGA 346 TO CGA 240 SS	9103456	PIGTAIL-ASY, 3' CGA 590 SS
9103488	PIGTAIL-ASY, 2' CGA 346 TO CGA 330 SS	9103483	PIGTAIL-ASY, 3' CGA 240 SS
9103489	PIGTAIL-ASY, 2' CGA 346 TO CGA 660 SS	9103484	PIGTAIL-ASY, 3' CGA 330 SS
9103490	PIGTAIL-ASY, 2' CGA 346 TO CGA 705 SS	9103485	PIGTAIL-ASY, 3' CGA 660 SS
36" Stainless Steel CGA 346 X SS CGA W/CV		9103486	PIGTAIL-ASY, 3' CGA 705 SS
9103467	PIGTAIL-ASY, 3' CGA 346 TO CGA 320 SS	72" Stainless Steel 1/4" FNPT X SS CGA W/CV	
9103468	PIGTAIL-ASY, 3' CGA 346 TO CGA 326 SS	9103457	PIGTAIL-ASY, 72" CGA 540 SS
9103469	PIGTAIL-ASY, 3' CGA 346 TO CGA 346 SS	9103458	PIGTAIL-ASY, 72" CGA 580 SS
9103470	PIGTAIL-ASY, 3' CGA 346 TO CGA 350 SS		
9103471	PIGTAIL-ASY, 3' CGA 346 TO CGA 500 SS		
9103472	PIGTAIL-ASY, 3' CGA 346 TO CGA 540 SS		
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		



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 on select Harris regulators.

- ☐ 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

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 make it easy to adapt in various applications. UL listed.

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

Specifications

- ☐ Cracking pressure: 1 psi
- ☐ Cv: 0.15
- ☐ Operating temperature range: -20F to +300F

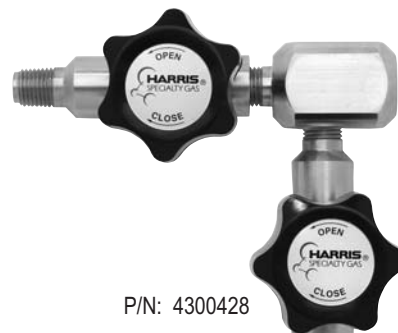
PART NO.	CONNECTIONS	MATERIAL	SEAT	MAX. WORKING PRESSURE
4300379	1/4" FNPT	Brass	Viton	3000 PSIG
4300380	1/4" FNPT	316SS	Viton	3000 PSIG
4300386	1/4" FNPT	316SS	EPR	3000 PSIG



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 changeout. The purges are typically installed between the CGA connection and the pigtail on the cylinder end. Additional applications could include installation on the regulator inlet or outlet.

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



P/N: 4300428

HP 750

Ultra High Flow Servo-Dome Regulator

Features

- ▣ 0-250, 500 or 1000 PSIG delivery pressure
- ▣ 3000 and 5500 PSIG inlet pressures
- ▣ Tamper proof, self-reseating internal safety valve on 250 & 500 models only
- ▣ One piece encapsulated seat design with 10-micron filtration
- ▣ Conforms to CGA E-4 standard for gas pressure regulators

Options

- Panel Mount Kit P/N: 9100887
- CGA 540 Adapter Kit P/N: 9103615
- CGA 580 Adapter Kit P/N: 9103616
- CGA 680 Adapter Kit P/N: 9103617



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

HP 752

Ultra High Flow Remote Servo-Dome Regulator

Features

- ▣ 0- 500 PSIG delivery pressure
- ▣ Up to 3000 PSIG inlet pressure
- ▣ One piece encapsulated seat design with 10-micron filtration
- ▣ 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

Options

- Front Panel Mount Kit P/N: 9100887
- CGA 540 Adapter Kit P/N: 9103615
- CGA 580 Adapter Kit P/N: 9103616
- CGA 680 Adapter Kit P/N: 9103617



Model HP 752



Remote Pilot Regulator

NEW!

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



HP 405 Liquid Cylinder Regulator

Features

- ▣ 0-125, 0-350 and 0-500 PSIG delivery pressure
- ▣ One-piece encapsulated seat design 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
- ▣ Tamper-proof, self reseating internal safety valve



HP 405 MODEL NO.	-	xxx	-	xxx	-	x
	DELIVERY DELIVERY	DELIVERY PRESSURE (OUTLET GAUGE)		CGA/INLET FITTING		OUTLET FITTING
HP 405	0-125 PSIG	(0-200 psi/14 bar)		320		A) 1/4" Tube Fitting (chrome-plated)
	0-350 PSIG	(0-400 psi/28 bar)		540		B) 1/4" FNPT Port
	0-500 PSIG	(0-1000 psi/70 bar)		580		
				000 (1/4" FNPT)		
				001 (1/4" MNPT)		

Model 8700 Ultra High Pressure Regulator

Features

- ▣ 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
- ▣ CGA inlet connections are self-venting

* Other CGA inlets and pressures available

Options

- Panel Mount Nut P/N: 9100887



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



HP 723 High Purity Brass Barstock Pipeline Regulator

Features

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

Options

Captured Vent Kit P/N: 9100875

Front Panel Mount Kit P/N: 9100871



HP 723	-	xxx	-	xxx	-	xx	-	xxxx
MODEL NO.	DELIVERY	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	0-50 PSIG	(30" Hg Vac-100 psi/7 bar)	001 (1/4" MNPT)	B) 1/4" FNPT Diaph. Valve	2) He Leak Cert. (Inboard)			
(chrome plated)	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	5) He 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.

HP 743 High Purity Stainless Steel Barstock Pipeline Regulator

Features

- 1-11/16" 316L stainless steel diaphragm eliminates contamination from diffusion or outgassing
- 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 x 10⁻⁹ cc/sec. inboard helium leak rate maintains gas purity levels
- Maximum inlet 3000 PSIG
- Front or back panel mountable

Options

Captured Vent Kit P/N: 9100875

Front Panel Mount Kit P/N: 9100871



HP 743	-	xxx	-	xxx	-	xx	-	xxxx
MODEL NO.	DELIVERY	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) He 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) He 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.



Series MSA 900 Semi-Automatic Switchover Manifolds

The MSA 900 Series manifolds are semi-automatic systems designed for medical applications that require uninterrupted gas service throughout the cylinder bank changeover 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. In addition, 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



MSA 900

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

MSA HL 900

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

MSA HP 900

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

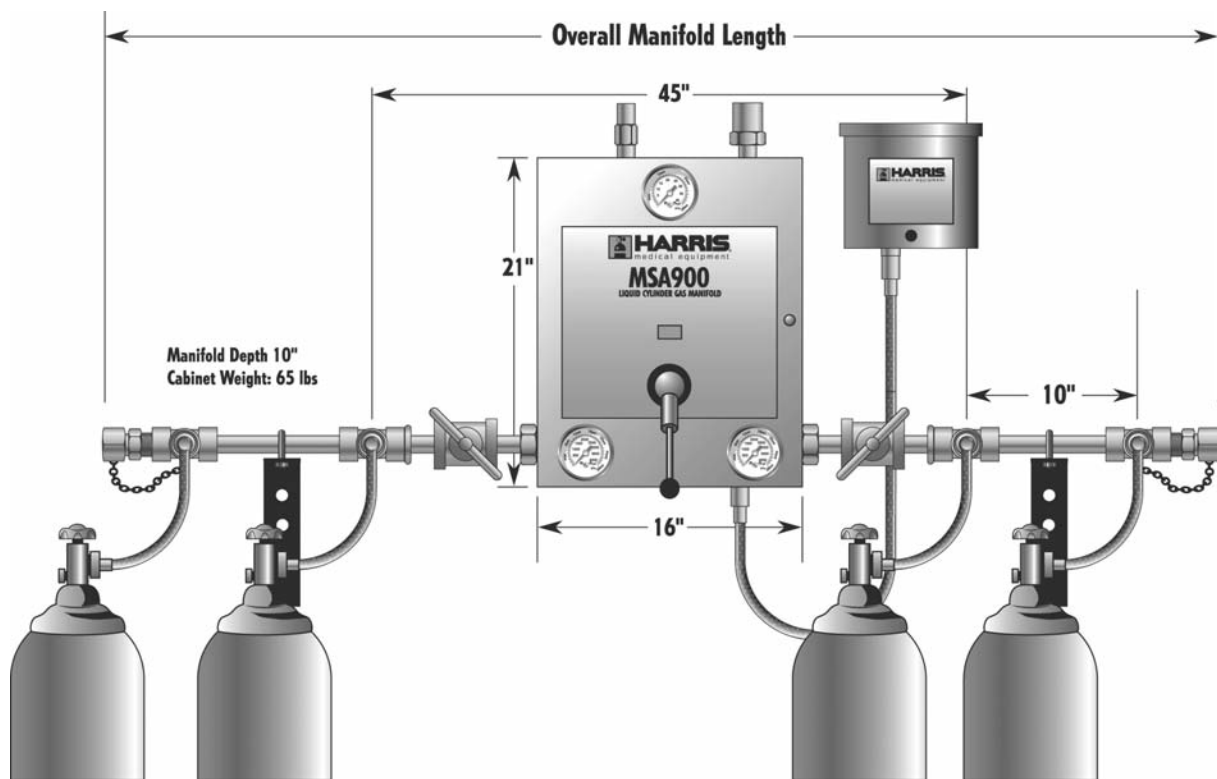
How to Order

CONTROL TYPE	-	RIGHT HEADER	-	LEFT HEADER	-	GAS
MSA 900	-	1R36	-	1L36	-	580

Represents an automatic manifold for delivery between 100 and 190 PSIG with 3/6" pigtails for 2 nitrogen cylinders

MSA 900	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
Semi-Automatic Systems	24" Pigtails	24" Pigtails	540- Oxygen
MSA 900 (Oxygen/Air)	1R	1L	326- Nitrous Oxide
	2R	2L	320- Carbon Dioxide
MSA HL 900 (CO ₂ , N ₂ O)	3R	3L	580- Nitrogen
	4R	4L	346- Air (Breathing)
MSA HP 900	36" Pigtails	36" Pigtails	
(Nitrogen)	1R36	1L36	
	2R36	2L36	
	3R36	3L36	
	4R36	4L36	
Related Options: Audio/Visual Alarm- P/N: 4300341 ordered separately			

MSA 900 TYPICAL LAYOUT



MSA 900 SPECIFICATIONS

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



Series MFA 910 Automatic Switchover Manifolds

The MFA 910 Series manifolds are automatic systems designed for medical applications that require uninterrupted gas service throughout the cylinder bank changeover cycle.

Features

- ▣ Digital read-out can display 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 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. 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 once the empty bank of cylinders is replaced - no manual resetting required
- ▣ Two (2) year limited warranty



MFA 910 Models

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

MFA 910 HL Models

Appropriate for all CO₂ and N₂O gas systems. Control unit contains an internal heater which will deliver up to 500 SCFH nitrous oxide or carbon dioxide. Unit also includes internal dual line regulators which 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" pigtails for 4 oxygen cylinders.						

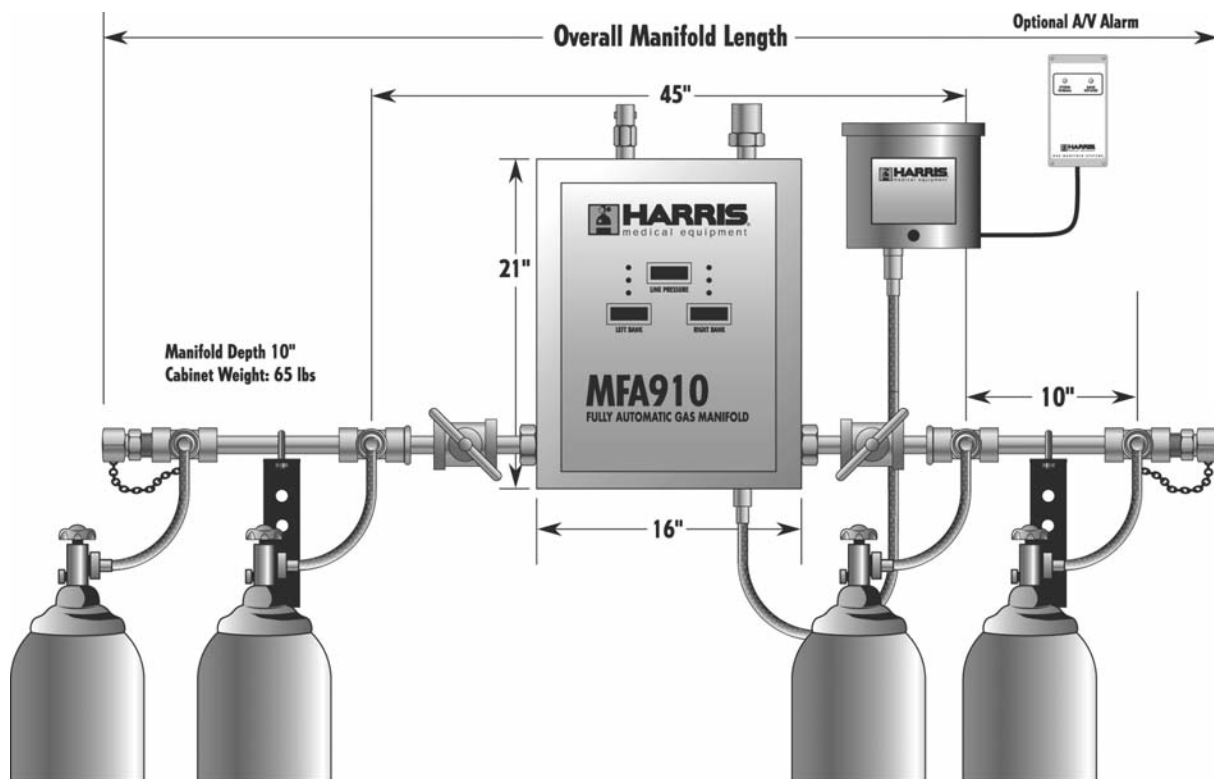
MFA HP 910 Models

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

MFA 910	XX(XX)	XX(XX)	XXX
SERIES	RIGHT HEADER (# cylinders)	LEFT HEADER (# cylinders)	GAS SERVICE
Fully automatic Systems MFA 910 (Oxygen, Air)	24" Pigtails 1R 2R 3R 4R	24" Pigtails 1L 2L 3L 4L	540- Oxygen 326- Nitrous Oxide 320- Carbon Dioxide 580- Nitrogen 346- Air (Breathing)
MFA HL 910 (CO ₂ , N ₂ O)	36" Pigtails 1R36 2R36 3R36 4R36	36" Pigtails 1L36 2L36 3L36 4L36	
MFA HP 910 (Nitrogen)			
Related Options: Audio/Visual Alarm- P/N: 4300341 ordered separately			



MFA 910 TYPICAL LAYOUT



910 SPECIFICATIONS

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



OXYGEN TRANSFILL STATION

OF-600 OXYFILL® BASE

- ▣ OXYFILL® base refilling system:
 - Fills 5 small cylinders (CGA-870) from 5 "H" cylinders
- ▣ Double rocker arm vacuum pump system, 5.1 CFM oil-less operation
- ▣ Oxygen analyzer with accuracy of + or - 0.1%, two (2) calibration regulators, LCD thermometer label gun and preprinted labels
- ▣ FDA senior starter kit, contains label gun and labels, test gauge, vacuum test gauge, LCD thermometer, 1000 custom-printed cylinder labels 1000 plastic valve seals, and 1000 full empty tags. Plus a free gallon of leak test solution
- ▣ Nitrogen pre-fill odor test kit
- ▣ Oxygen DOT 3 aluminum cylinder CGA 296, filled with oxygen spec gas
- ▣ Nitrogen DOT 3 aluminum cylinder CGA 580, filled with nitrogen spec gas
- ▣ Nitrogen DOT 3 aluminum cylinder CGA 580, filled with nitrogen NF Gas



PART NO.	MODEL NO.
4702713	OF-600

OF-686 OXYSUPPLY® BASE

- ▣ OXYSUPPLY® Base fills from 6 supply cylinders
- ▣ 12 Cylinder mobile filling rack
- ▣ Double rocker vacuum pump system, 5.1CFM oil-less operation. For larger systems (12+ cylinders), includes on/off switch and instructions
- ▣ Oxygen analyzer with accuracy of + or - 0.1%, two (2) calibration regulators, LCD thermometer, label gun, and pre-printed labels
- ▣ FDA senior starter kit contains label gun and labels, test gauge, vacuum test gauge, LCD thermometer, 1000 plastic valve seals, and 1000 full empty tags. Plus a free gallon of leak test solution
- ▣ Nitrogen pre-fill odor test kit oxygen DOT 3 aluminum cylinder CGA 296, filled with oxygen spec gas
- ▣ Nitrogen DOT 3 aluminum cylinder CGA 580, filled with nitrogen spec gas
- ▣ Nitrogen DOT 3 aluminum cylinder CGA 580, filled with nitrogen NF gas



PART NO.	MODEL NO.
4702714	OF-686

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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

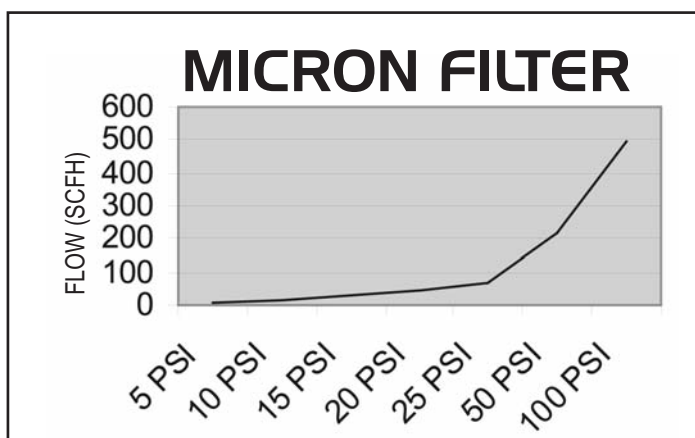
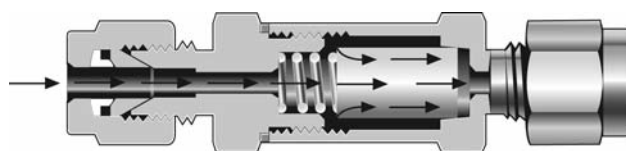
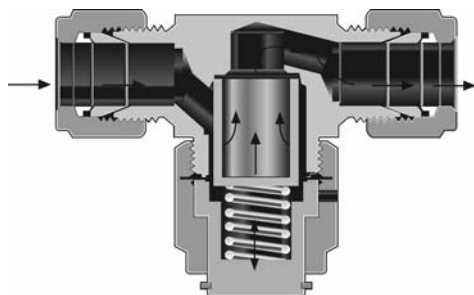
MANIFOLD ALARMS

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



MICRON FILTERS

Tee-Type & In-Line Filter Flow Diagrams



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

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

Replacement Elements (Tee-Type & In-Line)

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

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



GAS PURIFIERS

Model 8000 - High Capacity Purifier

The Model 8000 gas purifier is equivalent in operation to the Model 8010 but is designed for high capacities and lower working pressure.

Material of Construction

- ▣ Shell: Aluminum
- ▣ Gaskets: Neoprene
- ▣ Strainer Assembly: Monel or Brass

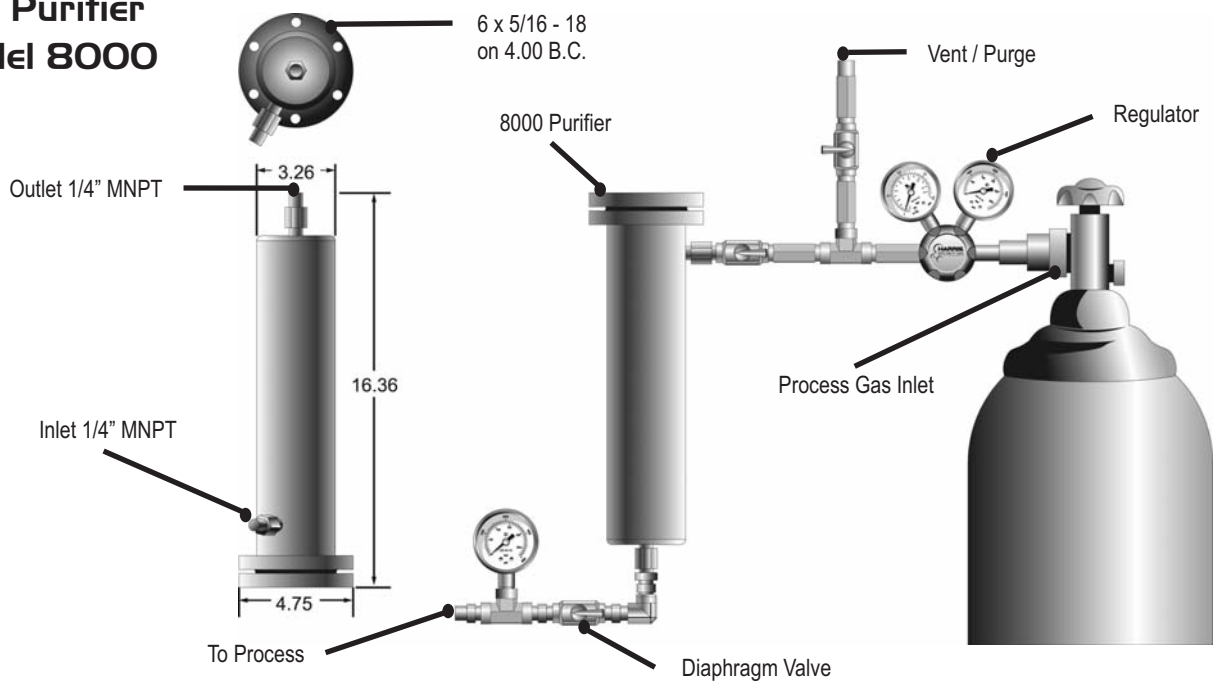
Specifications

- ▣ Max. operating pressure: 350 psi (2415 kPa)
- ▣ Max. flow rate: 10 scfm for short periods. 1 to 3 scfm for extended use.
- ▣ Pressure drop: 0.12 psi for 3 scfm, 1 psi for 7.5 scfm
- ▣ Temperature range: -40° to 200° F (-40° to 95° C)
- ▣ Capacity: Will dry 1750 std. cu. ft. at 125 psi saturated at 90°
- ▣ Dew Point Achieved: -100° F (-75° C)
- ▣ Dimensions: 4 3/4" dia. X 15 5/8" L
- ▣ Connections: 1/4" MNPT
- ▣ Weight: 3.58 lbs.

PART NO.	MODEL	DESCRIPTION
4302796	Purifier	8000
4302797	Cartridge	8000-1 13X Oil & Water
4302798	Cartridge	8000-2 4A Water
4302799	Cartridge	8000-3 Activated Charcoal THC

Typical Layouts

Gas Purifier Model 8000





Model 8010 - High Pressure Purifier

The Model 8010 gas purifier protects your gas system from contamination of oil and water found in some industrial gases and occasionally even in specialty carrier gases. The small daily operating costs are more than justified by 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. This improved packaging ensures full retention of capacity in storage until the time of use.

Materials of Construction

- ▣ Shell body: Aluminum anodized blue
- ▣ Shell Head: Chrome plated brass
- ▣ Seal: Buna N

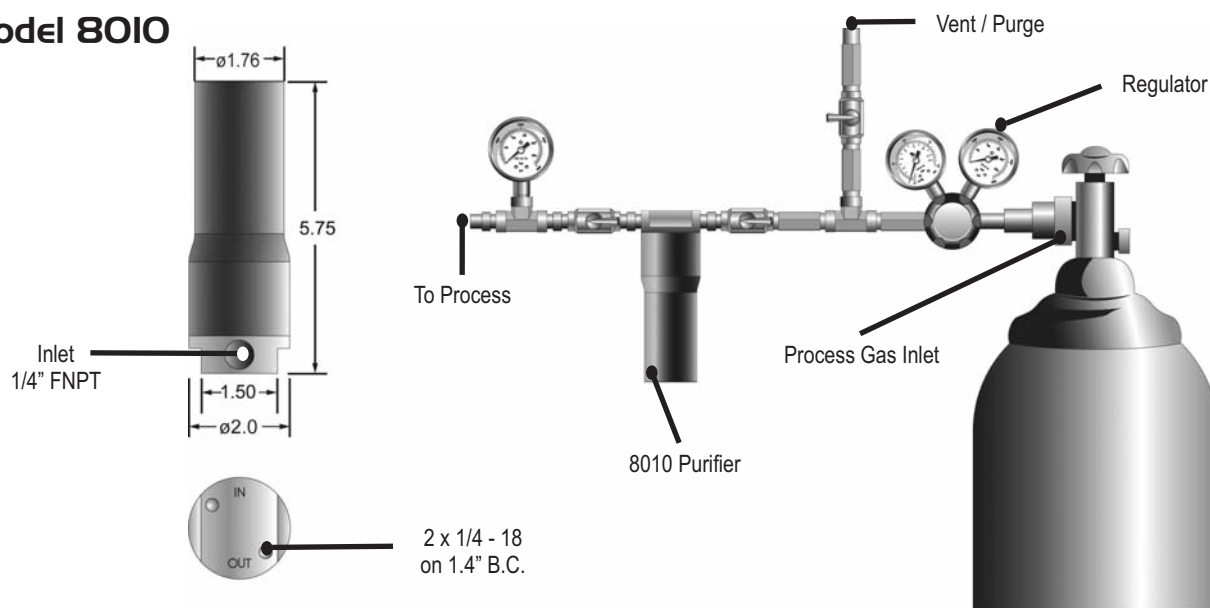
Specifications:

- ▣ 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" dia x 5 3/4" long
- ▣ Weight with cartridge: 1.5 Lbs.

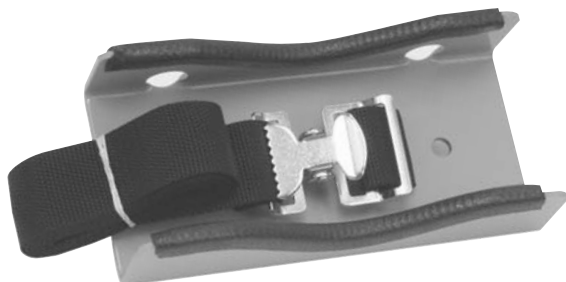
PART NO.	MODEL	DESCRIPTION
4302792	Purifier	8010
4302793	Cartridge	8010 13X Oil & Water
4302794	Cartridge	8010 4A Water
4302795	Cartridge	8010 Activated Charcoal THC

Typical Layouts

Gas Purifier Model 8010



ACCESSORIES



G 100 Single Cylinder Wall Bracket

The G 100 is an all steel construction bracket with many quality construction features. The edges are protected with steel reinforced vinyl edge guarding to maintain and protect the cylinders and provide extra grip. Steel parts are sealed with epoxy powder paint to assure long service life and chemical resistance. Straps and cinch-style buckles are chosen as primary means of support as 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.

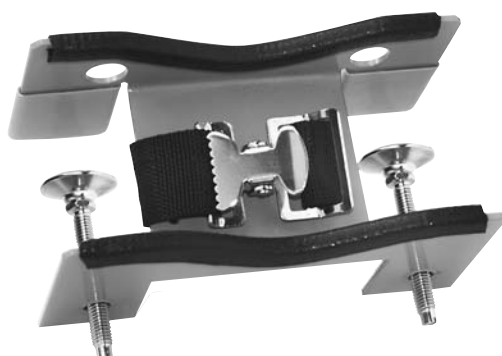
PART NO.	DESCRIPTION	SIZE	WEIGHT
4302650	G 100	4.25"x8"x2.25"	3 lb.
4302652	Optional Chain Set	41"	1 lb.



G 110 Single Cylinder Adjustable Bracket

Molded from reinforced polypropylene, the G 110 bracket can be adjusted to snugly support any cylinder from 4" to 14" diameter. Unit is first set to designated cylinder diameter with recessed set screws locking in width position. Permanently mounts to wall using fasteners (not included). Strap and security chain sets included.

PART NO.	SIZE	WEIGHT
4302653	9"x4"x5"	2 lb.



G 150 Single Cylinder Bench Mount Bracket

Bench cylinder bracket G-150: This bench mount single cylinder bracket uses dual mounting posts with swivel feet and non-slip pads to clamp to 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. Especially useful where walls are not accessible to attach brackets or when temporary, safe cylinder supports are required.

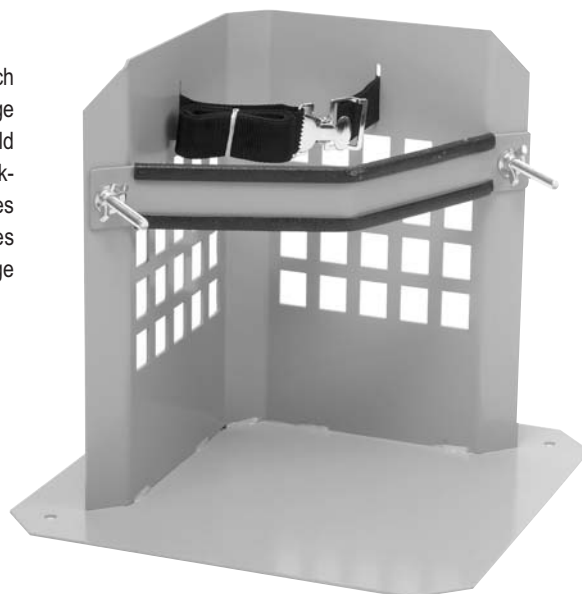
PART NO.	DESCRIPTION	SIZE	WEIGHT
4302654	G 150	4.25"x8"x4.25"	4.5 lb.
4302652	Optional Chain Set	41"	1 lb.



G 181 Single Cylinder Floor Stand

The G-181, safely supports 4" through 10" diameter cylinders using a combination of cinch buckle, polypropylene strap, and 10 gauge steel bar. Designed and built for the safe storage of industrial and commercial use gas cylinders, this stationary rack is constructed from cold rolled steel. One cylinder stands share the 1 1/2" polypropylene straps and steel cinch buckles used in our brackets. All 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.

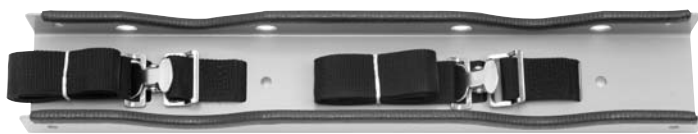
PART NO.	SIZE	WEIGHT
4302655	16"x16"x15"	21 lb.



Wall Mounted Cylinder Brackets

All steel construction brackets and racks share many quality construction features. 11 gauge hot rolled steel form the foundation. Edges are protected with steel reinforced vinyl edge guarding to help maintain your cylinders and provide extra grip. Steel parts are sealed with epoxy powder paint to assure long service life and chemical resistance. Straps and cinch-style buckles are chosen as primary means of support as 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.

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.



G 200 Double Cylinder Wall Bracket



G 300 Triple Cylinder Wall Bracket



G 401 Four Cylinder Wall Bracket

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 a 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

PART NO.	MODEL NO.	SIZE	WEIGHT
4302661	G400	24"x36.5"x30"	65 lb.
4302665	G600	24"x48.5"x30"	81 lb.



G 277 Two Cylinder Process Station



G 400P Four Cylinder Process Station



G 600P Six Cylinder Process Station

PART NO.	MODEL NO.	SIZE	WEIGHT
4302673	G277	12"x28"x72"	56 lb.
4302675	G400P	24"x36.5"x72"	98 lb.
4302676	G600P	24"x48.5"x30"	119 lb.



Bottle Holders

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

G 700 Laboratory Lecture Bottle Holder

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



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

G 710 Laboratory Lecture Bottle Holder

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



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

G 730 Triple Laboratory Lecture Bottle Holder

Formed heavy PVC walls chemically welded. Sized to fit lb. style (2" diameter) bottles. P/N G 730 features wall or bench mounting holes for 3 bottles.



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

G 760 Lecture Bottle Carrier

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

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





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.

The Harris Products Group • A Lincoln Electric Company

2345 Murphy Blvd., Gainesville, GA 30504

Customer Service: 1.800.241.0804 • FAX: 770.535.0544 • www.harrisproductsgroup.com



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