VICTOR®
AN ESAB® BRAND

GAS MANIFOLD
SYSTEMS & ACCESSORIES

WE LISTENED.
WE DELIVERED.

esab.com

VICTOR®
AN ESAB® BRAND

Table of Contents

Victor® Manifold Systems meet or exceed the following industry standards:

Industry Standards

- Compressed Gas Association, Pamphlets V-1, E-1 and G-1
- American National Standards Institute, Pamphlet B-57.1
- Canadian Standards Association, Pamphlet B-96
- National Fire Protection Association, Pamphlets NFPA-51
- Underwriters Laboratories, Pamphlet UL407

Components listed with a recognized independent testing agency:

- Victor Manifolds*
- Primary Regulators
- Line Regulators
- Station Regulators
- Pressure Switches
- Flash Arrestors (in-line)
- Master Valves
- Alarm Systems (Pending)

Components which are FM Listed:

- Hydraulic Flash Arrestors
- Pressure Switches

Components which are

- CSA Approved:
- Pressure Switches

** Nitrous Oxide manifolds are UL listed, industrial use only.*

Victor Standard / Features

- Easy to Order, User Friendly
- Model Number System
- Brazed Connections on all piping where possible to minimize the risks of leaks through threaded connections
- 100% Tested
- Shipped Complete - All manifolds come complete with adjustable regulator, brazed brass headers, pigtails with check valves (rigid or flexible depending on gas service), relief valves, and wall brackets
- All systems designed to provide expandability in the event of future growth requirements (except Dual systems)
- All manifolds cleaned for oxygen service
- The accuracy and dependability of Victor Regulators
- Two Year Warranty
- Worldwide Field Sales and Technical Support
- Manifolds greater than six (6) stations per header are shipped in six (6 maximum) station sections

For Manifold Questions Call

1-800-569-0547

UNITED STATES CUSTOMER SERVICE

PHONE: 1-800-569-0547 ■ FAX: 1-800-535-0557

For International & Canada see back cover.

Determining the Right Manifold for your Application

MAKE A COPY OF THIS PAGE. KEEP THIS AS A MASTER.

1) What is the application that the manifold will service? _____

2) What gas is required for your application? _____
(ie. Oxygen, Nitrogen, Acetylene, etc.)
3) What CGA connection is used for this gas service? _____
(ie. 540, 320, 510, etc.)
4) Do you require automatic or manual gas control? _____
5) What is the configuration required? Standard or Special?
If Special, please indicate type and the actual dimensions of the area in which the manifold will be located.

_____

6) Required line delivery pressure? (PSIG) _____
7) Volume Requirements:
SCFH per month: _____

Peak Flow Rate: _____

CF Size of Cylinders to be Used: _____

days required between cylinder change: _____

Total # of Cylinders on the manifold: (see below) _____

8) Installation: Inside or Outside? _____
(Systems used outside must be shielded from direct weather contact.)

9) Accessories Required:

Pressure Switch, Type: _____

Alarm System, Type: _____

Hydraulic Flash Arrestor _____

Hydraulic Flash Arrestor Stand _____

Cylinder Brackets, Type: _____

Gas Service Labels, Type: _____

Line Regulators, Type: _____

Station Regulators, Type: _____

Flow Meters, Type: _____

Station Drops (List:) _____

Other(s) _____

Cylinder Formula

Cylinder Volume = CF of Cylinder Less Residual Gases.
CF/Day/Station = (CFH/Station) X (# Hours/Day) X Duty Cycle
CF/Day = (CF/Day/Station) X (# Stations)

$$\frac{\text{CF/Day}}{\text{Cylinder Volume}} = \text{Cylinders/Day}$$

$$\frac{\text{Planned Cylinders/Header}}{\text{Cylinder Day}} = \text{Days/Header X \# of Headers}$$

Maximum Days/Header X # of Headers Days Between Deliveries

How to Order

Victor® Manifold Systems are designed to make your ordering experience simple and easy to understand. Despite a product line which appears to be complex, this ordering system will allow you to get the right product to you or your customer.

The key to ordering is having the right information on what your needs are for the particular application. We have thus provided a checklist (page 4) of the key information you will need to make the ordering process trouble-free. Should you require additional information, please contact our Customer Service Department at (US) 1-800-569-0547.

MANIFOLD ORDERING MATRIX

GAS SERVICE	CENTER SECTION*	REGULATOR	HEADER (R)	HEADER (L)	PIGTAIL	OPTIONS
Acetylene Air Argon CO_2 Helium Hydrogen Nitrogen Methane Nitrous Oxide Oxygen Propane Proplene Propylene	Dual SP LXR (Right Inlet) SP LXL (Left Inlet) SSIN SAM Liquid	Single Stage SR450MD SR450ME SR452MD SR453MD SR460MA SR461MB High Flow SR700MD SR700ME SR710MA SR711MB SR711MD Two Stage VTS450MD VTS450ME VTS452MD VTS452ME High Pressure SR4MF-996 SR4MF-997 SR4MG-996 SR4MG-997 SR4MJ-996 SR4MJ-997	Right Side Wall Mount (RW=right side wall mount) 1RW 2RW 3RW 4RW 5RW 6RW 7RW 8RW Stand Mount (RS=right side stand mount) 2RS 4RS 6RS 8RS 10RS 12RS	Left Side Wall Mount (LW= left side wall mount) 1LW 2LW 3LW 4LW 5LW 6LW 7LW 8LW Stand Mount (LS= left side stand mount) 2LS 4LS 6LS 8LS 10LS 12RS	See Page 26 for Details.	**00** w/ Line Regulator **02** w/o Pipe Line Relief **03** w/ Alarm & Switch **04** w/ Alarm Switch Visual Only **05** 500W Heater **06** 1000W Heater **07** No Heater **08** w/ Header Nut & Plug **09** w/ Hydraulic Flash Arrestor **10** w/o Hydraulic Flash Arrestor **19** w/ 1000 CFH Hydraulic Flash Arrestor

**Refer to the manifold selection section (page 6) for detailed descriptions of all Victor manifolds and their applications.*

Step by Step Ordering Example

Step 1 Identify the gas service. (Ex. Acetylene)
Step 2 Center Section - locate the model in the catalog that best suits your needs.
(Ex. SSIN - one side in use with other in reserve. Service may be interrupted.)
Step 3 Select regulator for the flow rates and gas service. (Ex. Acetylene - SR460MA, SR710MA are available for acetylene service.)
Step 4 Determine whether your needs require wall or stand mount and how many different cylinders per side (if applicable).
(Ex. 2 RW & 2LW - 2 right hand wall mount and 2 left hand wall mount)
Step 5 Determine length of pigtail needed and CGA connection. Use chart on Page 26 (Ex. 510 x 24" pigtail flex with CV & FA.)
Step 6 Any options that are needed for the system. (Ex. With 300 SCFH flash arrestors and stand needed)

ORDERING EXAMPLE:

Acetylene - SSIN - SR460MA - 2RW-2LW - 510 - 24 FTCVFA - List Options

International Customer Care: 1-940-381-1212 / FAX 1-940-483-8178
VictorEquip.com

Dual Manifold

Applications

The Victor® Dual manifold system is designed for those in need of basic manifolding. This manifold can provide two cylinder service for applications such as service stations, maintenance departments and other situations requiring simple manifolding. These are non-expandable systems with a maximum of two cylinders in service at one time

Design and Construction

- Open Style Manifold
- Choice of Regulators – See page 31
- Individual Station Shut-off Valves
- 3/4" NPT(F) Outlet
- Headers (7/8" brass pipe with bar stock tees)
- Brazed construction for maximum leak prevention
- Pigtails (check valves are standard)
  - 24 inch rigid for Hydrogen, Helium & N_2O
  - 24 inch flexible for all other gases.
  - Acetylene models equipped w/ dry flash arrestors
- Wall mount only
- 200 # Relief Valve to protect downstream piping (except fuel gas)

Performance Specifications

- Maximum inlet: 3000 PSIG
- Maximum Temperature Range: 140°F
- Minimum Temperature Range: 0° F

** Dimensional data see page 38*

Basic Dual Model

Simplex Manifold - SPLXR & SPLXL

Applications

The Victor Simplex manifold system is designed to provide a single source of supply from one cylinder bank. Although these manifolds can be used as a primary source of gas, the typical application finds this model as a high pressure back-up system for liquid or bulk tank systems in industry and medical environments.

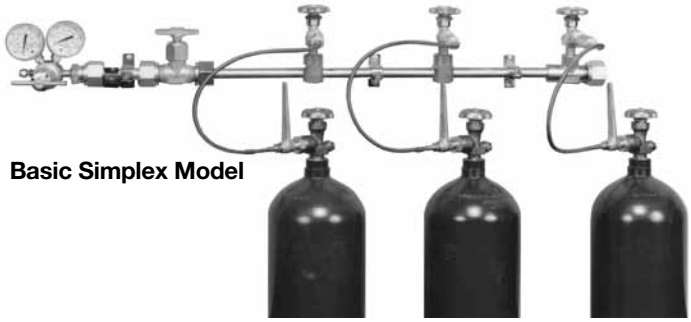
Design and Construction

- Open Style manifold
- Choice of Regulators – See page 31
- Master Shut-off Valve
- Individual Station Shut-off valves
- 3/4" NPT(F) Outlet
- Headers (7/8" Brass Pipe with Bar Stock Tees)
  - 10 inch centers for Oxygen, Inert Gases & Hydrogen
  - 13 inch centers for Acetylene & Fuel Gases
- Brazed construction for maximum leak prevention
- End capped to accommodate future expansion needs
- Pigtails (check valves are standard)
  - 24 inch rigid for Hydrogen, Helium & N_2O
  - 24 inch flexible for all other gases
  - Acetylene models equipped with dry flash arrestors
- 200 # Relief Valve to protect piping (except fuel gas)
- Right & left hand inlets available
- Wall or stand mount available
- Acetylene and propane systems with two or more stations are shipped with a hydraulic flash arrestor - 300 SCFH

Performance Specifications

- Maximum inlet: 3000 PSIG
- Maximum Temperature Range: 140°F
- Minimum Temperature Range: 0° F

** Dimensional data see page 38*



Basic Simplex Model

Single Manifold - SSIN

Applications

The Victor® Single manifold system is designed to provide a dual source of supply via a primary and reserve bank of cylinders. This manifold can provide effective service to any application in which down-time is not a problem. Once the primary bank has been depleted the reserve bank can be manually activated to return the system to working status.

Design and Construction

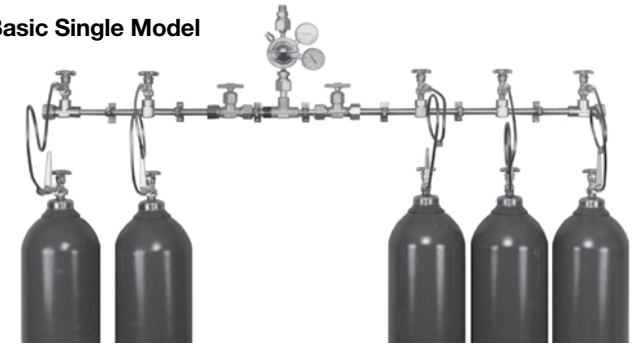
- Open Style Manifold
- Choice of regulators – See page 31
- Master Shut-off Valves
- Individual Station Shut-off valves
- 3/4" NPT(M) Outlet
- Headers (7/8" brass pipe with bar stock tees)
  - 10 inch centers for Oxygen, Inert Gases & Hydrogen
  - 13 inch centers for Acetylene & Fuel Gases
- Brazed construction for maximum leak prevention
- End capped to accommodate future expansion needs
- Pigtails (check valves are standard)
  - 24 inch rigid for Hydrogen, Helium & N_2O
  - 24 inch flexible for all other gases
  - Acetylene models equipped with dry flash arrestors
- Acetylene and propane systems with two or more stations, are shipped with a hydraulic flash arrestor - 300 SCFH
- Pressure switch port included - 1/4" NPT(F)
- Wall or stand mount available
- 200 # Relief Valve to protect piping (except fuel gas)

Performance Specifications

- Maximum inlet: 3000 PSIG
- Maximum Temperature Range: 140°F
- Minimum Temperature Range: 0° F

** Dimensional data see page 38*

Basic Single Model



Semi Automatic Manifold - SAM

Applications

The Victor Semi-Automatic manifold system is designed to provide an uninterrupted supply to any application requiring no down-time. As the primary supply is depleted a reserve supply is waiting to automatically begin service. Through pressure differential the switchover takes place without interruption of service, once depleted the primary bank can be replaced and becomes the new reserve bank.

Design and Construction

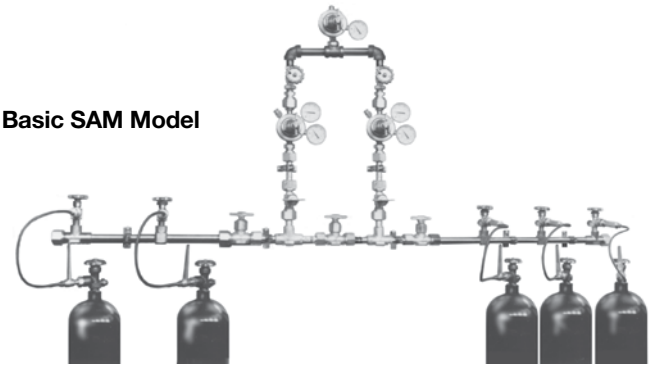
- Open Style Manifold
- Choice of regulators – See page 31
- Adjustable Line Regulator (except for fuel gas)
- Master Shut-off Valves
- Individual Station Shut-off Valves
- 3/4" NPT(M) Outlet
- Headers (7/8" brass pipe with bar stock tees)
  - 10 inch centers for Oxygen, Inert Gases & Hydrogen
  - 13 inch centers for Acetylene & Fuel Gases
- Brazed construction for maximum leak prevention
- Low Pressure Side - Black Pipe
- End capped to accommodate future expansion needs
- Pigtails (check valves are standard)
  - 24 inch rigid for Hydrogen, Helium & N_2O
  - 24 inch flexible for all other gases
  - Acetylene models equipped with dry flash arrestors
- Acetylene and propane systems with two or more stations, are shipped with a hydraulic flash arrestor - 300 SCFH
- Pressure switch port included - 1/4" NPT(F)
- Wall or stand mount available
- 200 # Relief Valve to protect piping (except fuel gas)

Performance Specifications

- Maximum inlet: 3000 PSIG
- Minimum pressure differential between primary & reserve bank is +/- 20 psig (+/- 5 PSIG Acetylene)
- Maximum Temperature Range: 140°F
- Minimum Temperature Range: 0°F

** Dimensional data see page 38*

Basic SAM Model



Liquid Manifold - LIQ

Applications

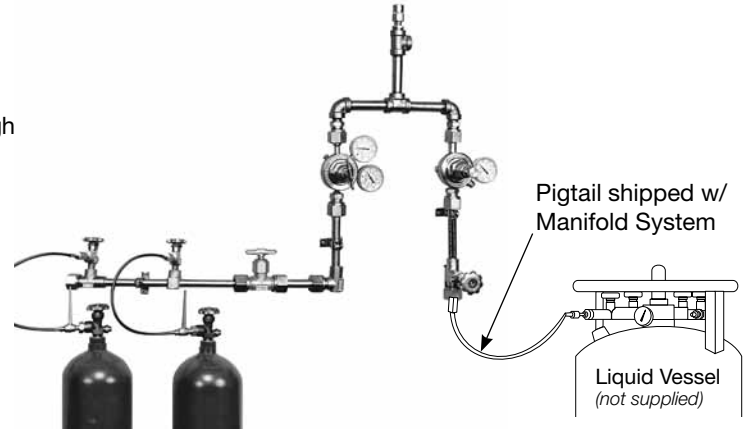
Designed for applications with “low flow rates”, this liquid/high pressure back-up manifold prevents excessive product loss. For applications with sufficient volume for liquid usage.

Design and Construction

- Open style manifold
- LC700 series regulator L.P. side – See page 31
- SR450 series backup regulator H.P. side
- Adjustable Line Regulator downstream
- 3/4" NPT(F) Outlet
- High Flow Relief Valves
- Master shut off valve (H.P.)
- Individual station shut-off valves
- Headers (H.P.) (7/8" brass pipe with bar stock tees)
  - 10 inch centers for O_2 & other Inerts
- Brazed Construction for maximum leak protection
- Pressure switch port included on H.P. side - 1/4" NPT(F)
- End capped to accommodate future expansion needs
- 200# relief valve to protect piping

Performance Specifications

- Maximum Inlet:
  - 400 PSIG low pressure bank
  - 3000 PSIG high pressure bank
- Maximum Delivery: 200 PSIG
- Minimum Pressure Differential ±20 PSIG
- Maximum Temperature: 140°F
- Minimum Temperature: 0°F



Model Shown: LIQ-IRW-2LW-580-36FTCV

Liquid is always on the right.

DIMENSIONS - OVERALL LENGTH

# OF CYLINDERS	INCHES	CENTIMETERS
Control Only	30.0	76.2
3 X 1	67.4	171.2
6 X 2	97.4	247.4
8 X 3	117.4	298.2

MODEL NO.	GAS SERVICE	PSIG DELIVERY RANGE
LIQ	540 Oxygen 580 Inert 320 CO_2	10-200

Portable Bulk Liquid Containers

What you need to know?

Vaporization Rate*:	Typically 250 to 350 SCFH
Outlet Pressure:	Typically 125 PSIG 300 PSIG Models are also available
Evaporization Rate:	Up to 3% per day will vent to atmosphere
Temperature:	Vaporizing gas is very cold. Approximately -300° Fahrenheit.

Warning:

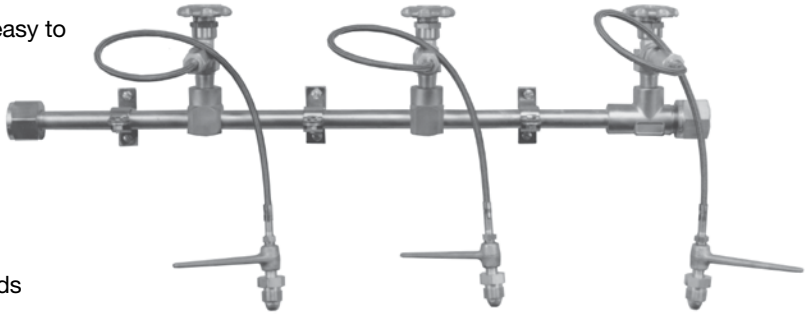
Multiple liquid cylinder manifolds MUST have the pressure building regulator of each vessel set at the same pressure to insure proper cylinder withdrawal.

Header Extension - HER & HEL

All Victor® Manifolds are expandable to meet changing application requirements. Victor header extensions are easy to add to your existing Victor manifold system.

Design and Construction

- 3000 PSIG Rated
- Brazed brass construction for maximum leak protection
- Right or left side expansions
- 1–11½ NPS Connections
- End capped to accommodate future expansion needs (Option #08)
- Pigtails (Check valves are standard)
  - 24 inch rigid for Hydrogen, Helium & N_2O
  - 24 inch flexible for all other gases
  - Acetylene models equipped with dry flash arrestors
  - High purity brass and stainless models also available
  - Contact Victor Customer Service



Model Shown: HER-3* (Right Side)

** Includes valves and pigtails as shown above*

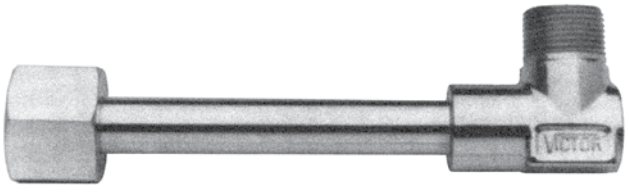
Looking at the Manifold

HEL = Left Side, HER = Right Side

DIMENSIONS - OVERALL LENGTH

# OF CYLINDERS	INCHES	CENTIMETERS
1	17.4	44.1
2	27.4	69.5
3	37.4	94.9
4	47.4	120.4

Expansion Elbow



EXPANSION ELBOW - 90° ANGLE

1–1½ NPS (F) X 1–11½ NPS (M)

PART NO.	LENGTH
1109-0503	4-1/2" LONG
1109-0501	8-1/3" LONG
1109-0502	11-1/3" LONG

For Manifold Questions Call

1-800-569-0547

Station Drops

Victor® offers Station drops in 3 various configurations - single, double, and quad systems. Each system can be outfitted for various gas service with the proper station valve or outlet valve.

Design and Construction

- 1/2" ball valve
- All brass construction

Single (18.5”)

Double (30.5”)

Quad (30.5”)

OXYGEN

DESCRIPTION	MODEL	PART NO.
Single Station Drop w/ Station Valve 7/8" - 14 RH outlet CGA 024	SD - 1 - 024	1126 - 0043
Double Station Drop w/ Station Valve 7/8" - 14 RH outlet CGA 024	SD - 2 - 024	1126 - 0047
Quadruple Station Drop w/ Station Valve 7/8" - 14 RH outlet CGA 024	SD - 4 - 024	1126 - 0051
Single Station Drop w/ Ball Seat Valve 9/16" - 18 RH outlet CGA 022	SD - 1 - 022	1126 - 0058
Double Station Drop w/ Ball Seat Valve 9/16" - 18 RH outlet CGA 022	SD - 2 - 022	1126 - 0060
Quadruple Station Drop w/ Ball Seat Valve 9/16" - 18 RH outlet CGA 022	SD - 4 - 022	1126 - 0055

FUEL GAS

DESCRIPTION	MODEL	PART NO.
Single Station Drop w/ Station Valve 7/8" - 14 LH outlet CGA 025	SD - 1 - 025	1126 - 0044
Double Station Drop w/ Station Valve 7/8" - 14 LH outlet CGA 025	SD - 2 - 025	1126 - 0048
Quadruple Station Drop w/ Station Valve 7/8" - 14 LH outlet CGA 025	SD - 4 - 025	1126 - 0052
Single Station Drop w/ Ball Seat Valve 9/16" - 18 LH outlet CGA 023	SD - 1 - 023	1126 - 0059
Double Station Drop w/ Ball Seat Valve 9/16" - 18 LH outlet CGA 023	SD - 2 - 023	1126 - 0061
Quadruple Station Drop w/ Ball Seat Valve 9/16" - 18 LH outlet CGA 023	SD - 4 - 023	1126 - 0056

Inert Gas Station Drops

W/ STATION VALVE

DESCRIPTION	MODEL	PART NO.
Single Station Drop w/ Station Valve CGA 034	SD - 1 - 034	1126 - 0045
Double Station Drop w/ Station Valve CGA 034	SD - 2 - 034	1126 - 0049
Quadruple Station Drop w/ Station Valve CGA 034	SD - 4 - 034	1126 - 0053

W/ BALL VALVE

DESCRIPTION	MODEL	PART NO.
Single Station Drop w/ Ball Seat Valve 5/8" - 18F RH CGA 032	SD - 1 - 032	1126 - 0046
Double Station Drop w/ Ball Seat Valve 5/8" - 18F RH CGA 032	SD - 2 - 032	1126 - 0050
Quadruple Station Drop w/ Ball Seat Valve 5/8" - 18F RH CGA 032	SD - 4 - 032	1126 - 0054

EDGE™ EST4 Pipeline – Station Regulator Series

Ideal for weld station use and other gas distribution applications, the EST4 station regulator is fitted with the appropriate station style CGA connections for use with oxygen, inert or fuel gases. Along with the color coded adjusting knob and new gauges, this regulator not only improves productivity but looks good doing it.

Design and Construction

- 4 port forged brass body
- High strength zinc-aluminum housing cap
- 2.5" gauge with updated artwork
- Color-coded SLAM™ impact absorbing safety knob
- Meets or exceeds CGA E-4
- ETL listed to UL 252
- Side entry and rear entry inlet versions available

Dimensions

- 3.8" W x 7.1" H X 8.2" L
  (96.5 mm x 180.3 mm x 208.3 mm)

Weight

- 4 lbs 5 oz (1.95 kg)

Performance

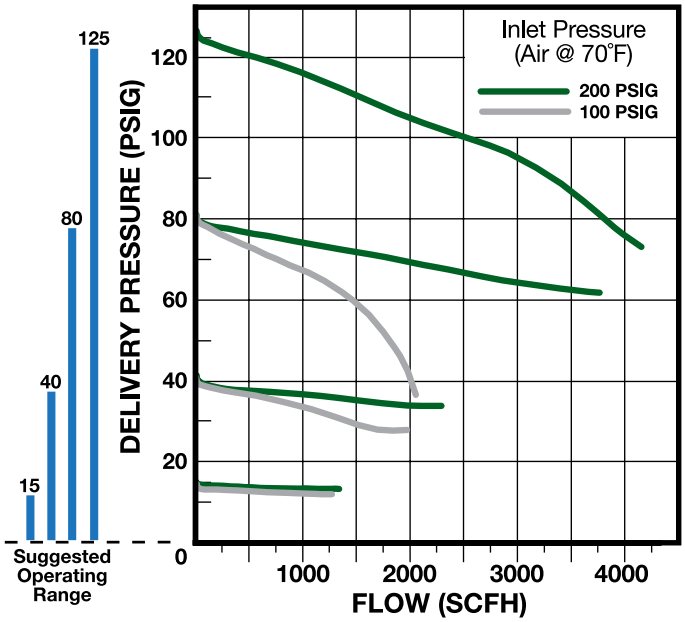
- Maximum inlet – 200 PSIG

GAS SERVICE	PART NO.	MODEL NO.	DELIVERY RANGE (PSIG)
Oxygen	0781-5191	EST4-40-024	2-40
	0781-5204	EST4-40-024R	2-40
	0781-5192	EST4-80-024	4-80
	0781-5205	EST4-80-024R	4-80
	0781-5193	EST4-125-024	5-125
	0781-5206	EST4-125-024R	5-125
Inert (Nitrogen, Argon, Helium)	0781-5189	EST4-125-034	5-125
	0781-5207	EST4-125-034R	5-125
Acetylene	0781-5194	EST4-15-025	2-15
	0781-5209	EST4-15-025R	2-15
Hydrogen, Methane, Natural Gas, L.P. Gas	0781-5195	EST4-80-025	4-80
	0781-5212	EST4-80-025R	4-80
	0781-5196	EST4-125-025	5-125
	0781-5213	EST4-125-025R	5-125

RED	GREEN	BLACK
Acetylene Hydrogen Methane LPG	Oxygen	Inert Gas

EST4 Flow Data

EDGE Series - Station



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VM SERIES MANIFOLD ORDERING MATRIX

GAS ↓	XXXXX ↓	XXX ↓	XXX ↓	XXX ↓	XXXXX ↓	XX ↓
GAS SERVICE	**CENTER SECTION**	**HEADER (R)**	**HEADER (L)**	**CGA**	**LENGTH / STYLE**	**OPTIONS**
Acetylene Air Argon Carbon Dioxide Helium Hydrogen Nitrogen Methane Nitrous Oxide Oxygen Propane	VM2000 (Industrial) VM2100 (Medical) VM1000 (Industrial Liquid) VM1100 (Medical Liquid) VM2010 (C_2H_2) VM2011 (LP) VM2012 (H_2 Methane)	Wall Mount 1RW 2RW 3RW 4RW 5RW 6RW 7RW 8RW Stand Mount 2RS 4RS 6RS 10RS 12RS VM1000/1100 1RWC 2RWC 3RWC	Wall Mount 1LW 2LW 3LW 4LW 5LW 6LW 7LW 8LW Stand Mount 2LS 4LS 6LS 10LS 12LS VM1000/1100 1LWC 2LWC 3LWC	Acetylene 200, 300, 520, 510 Air (Industrial) 590 Air (Breathing) 346 Argon 580 Carbon Dioxide 320 Helium 580 Hydrogen 350 Nitrogen 580 Methane 350 Nitrous Oxide 326 Oxygen 540 Propane 510	24FTCVFA 24" Flexible, Teflon Lined, Check Valve, Flash Arrestor 24FS 24" Flexible ST. ST. Lined 24RC 24" Rigid Copper 24RCCV 24" Rigid Copper, Check Valve 24FTL 24" Flexible, Teflon Lined VM1000/1100 72FPCV 72" Flexible, Polyethylene, Check Valve	**03** w/ Alarm & Switch (Audio & Visual) **05** w/ 500W Heater **06** w/ 1000W Heater **07** No Heater **08** w/ Header Nut & Plug **09** w/ 300 CFH Hydraulic Flash Arrestor **10** w/o Hydraulic Flash Arrestor **19** w/ 1000 CFH Hydraulic Flash Arrestor **20** Center Section Stand

Ordering Example #1:

Acetylene VM2000-2RW-2LW-580-24FTCV

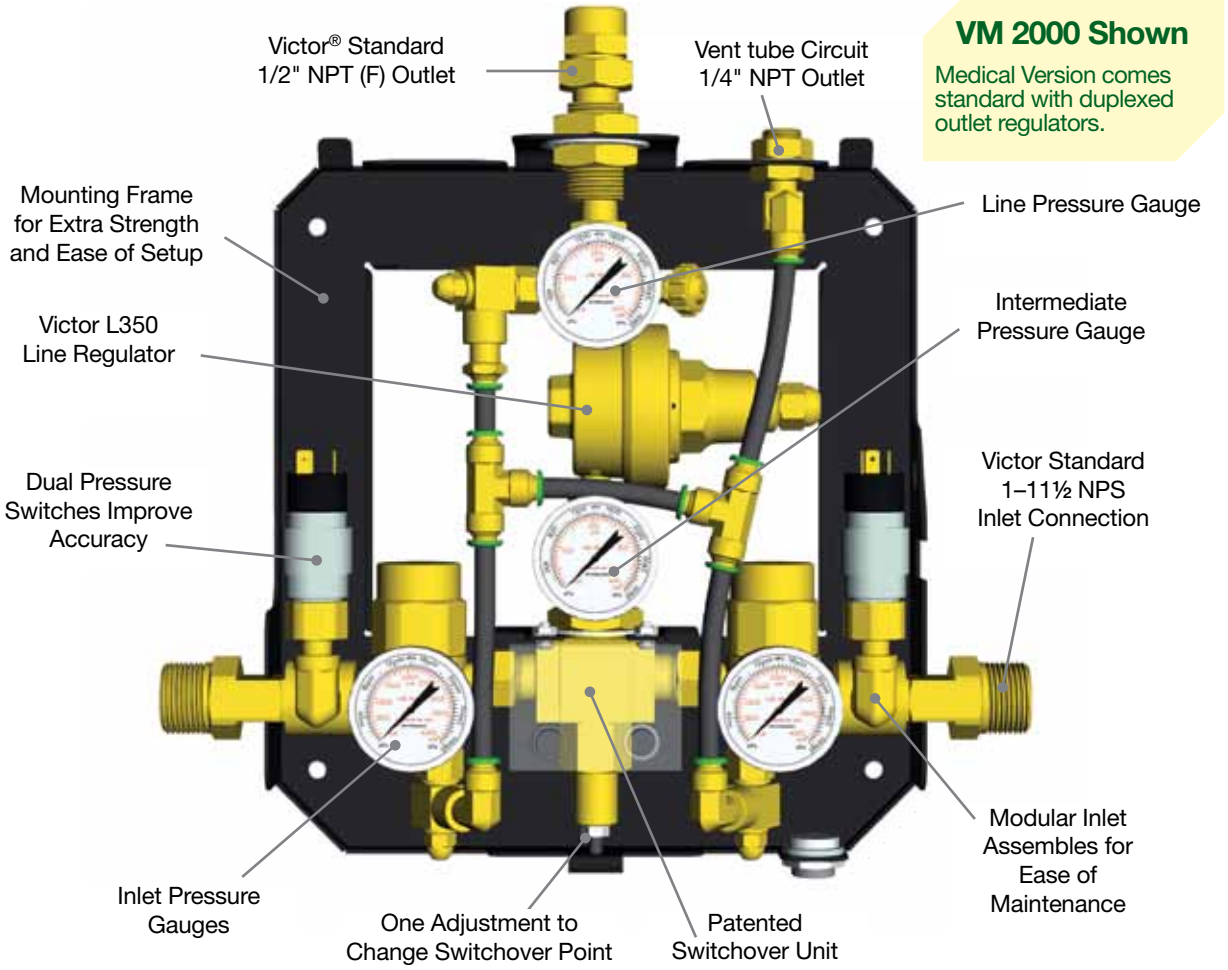
VM2000 Manifold with 2 cylinders per side, CGA 580 connections on 24" flexible Teflon lined pigtails with check valves.

Ordering Example #2:

Oxygen VM1000-1RWC-1LWC-540-72FPCV

VM1000 Manifold with 1 cylinder per side, CGA 540 connections on 72" flexible pigtails with check valves.

VM Series Manifold



VM 2000 Shown

Medical Version comes standard with duplexed outlet regulators.

Manifold Headers and Heater

VM Series Manifold
Shown with Headers and Heater.

VM Series Manifold
Shown with Compact Headers

VM2000 Series

High Pressure Cylinder Automatic Manifold System

The Victor® VM2000 Series is designed to be a fully automatic system for use with high pressure cylinders. The manifold gives an uninterrupted supply of gas as the primary bank of cylinders is depleted. At a preset pressure, the manifold automatically switches to the reserve bank. The system eliminates the need for the operator to change switches or pressure upon cylinder depletion. The manifold comes with Victor's two-year warranty, while maintaining a five year warranty on the switchover mechanism itself.

Design & Construction Features

- Frame mounted design with removable cover
  - 12.8" W x 14.0" H x 5" D
  - Powder coated steel mounting frame
  - Durable ABS plastic cover
  - Cover draw latch is padlockable for security
  - Wall or stand mount available
  - 1/2" NPT (F) outlet connection
  - Inlet size: 1–11½ NPS (M)
- Fully automatic changeover
  - Patented switchover unit
  - Does not require power to change over
  - Dual pressure switch design prevents false readings
- Adjustable delivery pressure
  - 0-200 PSIG for Oxygen, Air, Inert, CO_2
  - 0-70 PSIG for medical models except Nitrogen
  - Line, supply, reserve and intermediate pressure gauge
- High flow capacity
  - 3500 SCFH air @ 70° F
  - Flow coefficient Cv = .238
- Ease of repair
  - Removeable cover for easy access to internal components
- Electrical requirements
  - 24 VAC service - cabinet lights and alarm
  - 115/24 VAC power supply included
  - In case of power failure system continues to operate.
- 500W or 1000W heaters available
  - (500W standard for CO_2 and N_2O service)
- Models also available for Helium, Acetylene,
  - LP Gas and Hydrogen/Methane

VM2000 Industrial Shown

Safety Standards and Codes

- Compressed Gas Association (Pamphlets V-1, E-1, G-1)
- American National Standards Institute (Pamphlets B-57-1)
- National Fire Protection Association (Pamphlets NFPA-51)
- UL listed component regulators and valves
- Medical units comply with National Fire Protection Association (Pamphlets NFPA-99C)

Performance Specifications

- Maximum Inlet - 3000 PSIG
- Maximum Temperature - 140° F
- Minimum Temperature - 0° F

VM2000 SERIES

DESCRIPTION	MODEL	PART NO.
Oxygen Fully Auto Cabinet	VM2000	1125-1133
Inert Gas Fully Auto Cabinet	VM2000	1125-1134
CO_2 Fully Auto Cabinet (w/500W heater)	VM2000	1132-4189
Medical Oxygen Fully Auto Cabinet	VM2100	1125-1137
Medical Nitrogen Fully Auto Cabinet	VM2100	1125-1138
Medical Compressed Air Fully Auto Cabinet	VM2100	1125-1139
Medical CO_2 Fully Auto Cabinet (w/500W heater)	VM2100	1132-4190

VM1000 Series

Liquid Cylinder

The Victor® VM1000 Series is designed to be a fully automatic system for use with liquid cylinders. The manifold gives an uninterrupted supply of gas as the primary bank of cylinders is depleted. At a preset pressure, the manifold automatically switches to the reserve bank. The system eliminates the need for the operator to change switches or pressure upon cylinder depletion. The manifold comes with Victor's two-year warranty, while maintaining a five year warranty on the switchover mechanism itself. The 1000 Series models include an economizer circuit to help prevent reserve cylinders from wasting gas due to venting to atmosphere.

Design & Construction Features

- Frame mounted design with removable cover
  - 12.8" W x 14.0" H x 5" D
  - Powder coated steel mounting frame
  - Durable ABS plastic cover
  - Cover draw latch is padlockable for security
  - Wall or stand mount available
  - 1/2" NPT (F) outlet connection
  - Inlet size: 1–11½ NPS (M)
- Fully automatic changeover
  - Patented switchover unit
  - Economizer circuit
  - Does not require power to change over
  - Dual pressure switch design prevents false readings
- Adjustable delivery pressure
  - 0-200 PSIG for Oxygen, Air, Inert, CO_2 and N_2O
  - 0-70 PSIG for medical models except Nitrogen
  - Higher delivery pressures require higher inlet pressures
  - Line, supply, reserve and intermediate pressure gauge
- High flow capacity
  - 3000 SCFH air @ 70° F
  - Flow coefficient Cv = .238

Note: Flow rate is limited by the withdrawal rate of vaporized gas from liquid containers, as well as the number of containers in the system. Flow rate listed for reference only.

- Ease of repair
  - Removeable cover for easy access to internal components
  - Face seal connections
- Electrical requirements
  - 24 VAC service - cabinet lights and alarm
  - 115/24 VAC power supply included
  - Alarm system optional, not required for manifold to operate
  - In case of power failure system continues to operate

VM1100 Medical Shown

Safety Standards and Codes

- Compressed Gas Association (Pamphlets V-1, E-1, G-1)
- American National Standards Institute (Pamphlets B-57-1)
- National Fire Protection Association (Pamphlets NFPA-51)
- UL listed component regulators and valves
- Medical units comply with National Fire Protection Association (Pamphlets NFPA-99C)

Performance Specifications

- Maximum Inlet - 500 PSIG
- Maximum Temperature - 140° F
- Minimum Temperature - 0° F

VM1000 SERIES

DESCRIPTION	MODEL	PART NO.
Oxygen Fully Auto Cabinet	VM1000	1125-1127
Inert Gas Fully Auto Cabinet	VM1000	1125-1128
CO_2 Fully Auto Cabinet	VM1000	1125-1129
Medical Oxygen Fully Auto Cabinet	VM1100	1125-1130
Medical Nitrogen Fully Auto Cabinet	VM1100	1125-1131
Medical N_2O/CO_2 Fully Auto Cabinet	VM1100	1125-1132

600 Series Switchover Manifold

Applications

The 600 Series is an automatic switchover manifold system that changes between a primary side, or bank, and the secondary side using the pressure differential between the two sides of high pressure gas supply. The 600 Series is designed to continuously supply the downstream process with high purity gas from two individual cylinders, or from two entire banks of cylinders manifolded together. The 600 Series is designed with an outlet regulator to maintain a constant downstream pressure. The 600 Series is available with nickel-plated brass and stainless steel regulators for use with either non-corrosive or toxic corrosive gases up to 6.0 purity grade.

NOT DESIGNED FOR LIQUID CYLINDERS

600 Series Features

- Helium leak rate of $1x10^{-9}$ scc/sec. All high purity regulators are inboard leak checked with a helium mass spectrometer
- 2" dual scale gauges PSI/Bar
- Cartridge-type seat assemblies with 10 micron inboard filter
- 180° lever with arrow indicates which side of the manifold is the active side
- 360° rotating captured vent for remote venting of process gases (optional)
- Regulator bodies are mounted on rear bracket
- Audible and visual alarms (optional)
- New control knob allows precise setting for maximum delivery

600 Series Specifications

- Maximum inlet pressure - 4250 psig/300 bar
- Maximum delivery flow rate - See Performance Data Chart
- Outlet pressure ranges:
  - 50 psi outlet pressure
  - 150 psi outlet pressure
- Switchover Pressures
  - Right to Left Bank: 190 psig
  - Left to Right Bank: 176 psig
- Inlet & Outlet ports - 1/4" NPT (Female)
- Temperature Operating Range -40° to 140°F (-40° to 60°C)
- Outlet pressure rise - HPD 600: None
- Flow coefficient - Cv = .072 – .094
- Weight - 12 lbs (5.4 kgs)
- Mounting Hole Spacing - 8.5" W x 2.5" H

Materials of Construction

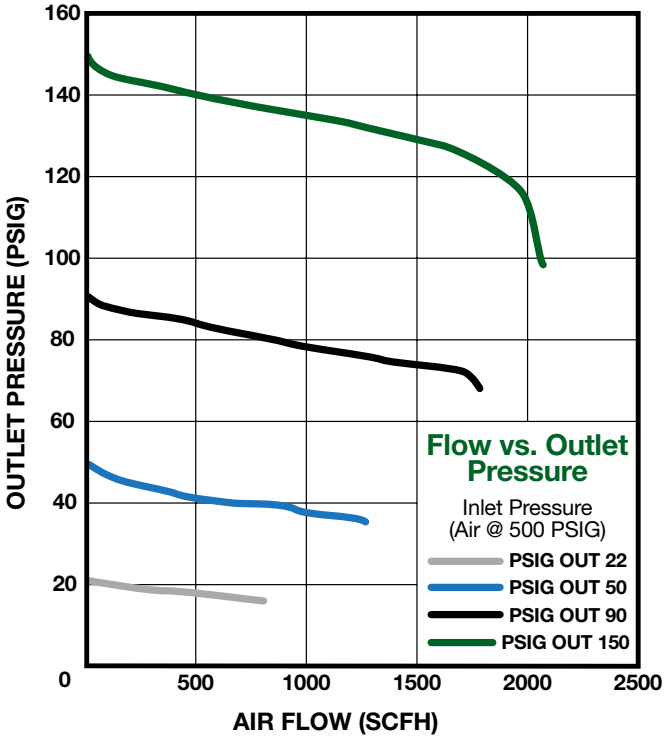
HPD 600 Nickel-plated Brass

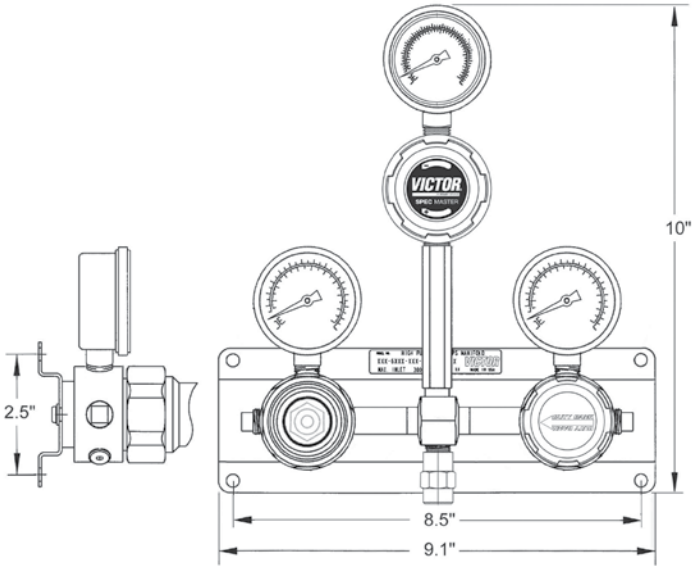
- Body - Nickel-plated Brass bar stock
- Spring Housing Cap - Nickel-plated Brass
- Diaphragm - 316L Stainless Steel
- Nozzle - Brass
- Seat - PCTFE
- Seals - PTFE
- Poppet - Brass bar stock
- Inboard Filter - 10 Micron Sintered Stainless Steel
- Seat Return Spring - 316L Stainless Steel
- Pressure Adjusting Spring - Heat-treated Spring Steel
- Adjusting Knob - Polypropylene

SGD 600 Stainless Steel

- Body - 316L Stainless Steel Bar Stock
- Spring Housing Cap - Nickel-plated Brass
- Diaphragm - 316L Stainless Steel
- Nozzle - 316L Stainless Steel
- Seat - PCTFE
- Seals - PTFE
- Poppet - 316L Stainless Steel
- Inboard Filter - 10 Micron Sintered Stainless Steel
- Seat Return Spring - 316L Stainless Steel
- Pressure Adjusting Spring - Heat-treated Spring Steel
- Adjusting Knob - Polypropylene

600 Series Performance Data Chart





600 SERIES SWITCHOVER MANIFOLD ORDERING MATRIX

XXX-XXXX	XXX	XXX	XXX	XXX	XX
CENTER SECTION	DELIVERY PRESSURE	HEADER* (R)	HEADER* (L)	CGA	STAINLESS STEEL PIGTAIL**
HPD 600 (Brass) SGD 600 (Stainless)	50 psig 150 psig	1RW 2RW 3RW 4RW	1LW 2LW 3LW 4LW	Brass 580, 320, 590, 346, 350, 540 Stainless Steel 240, 660, 330, 705	24", Flex 36", Flex 48", Flex

** Optional header configurations are available.*
*** Standard pigtails are stainless steel lined and include a check valve.*

ORDERING EXAMPLE:

HPD-600-50-1RW-2LW-350-36
HPD 600 manifold w/ 50 psi delivery pressure, 1 header right, 2 header left, CGA 350 Chrome Plated brass inlet and 36” flex stainless steel pigtail.

SGD 600 Switchover Manifold

Applications

The SGD 600 is an automatic switchover manifold system that uses the pressure differential between each side, or bank, of the manifold to determine which side is active. The SGD 600 is designed to continuously supply the downstream process with high purity gas from two individual cylinders, one primary and one secondary, or from a bank of cylinders manifolded together. The SGD 600 is available with stainless steel bar stock regulators for use with toxic or corrosive gases up to 6.0 purity grade.

NOT DESIGNED FOR LIQUID CYLINDERS

SGD 600 Features

- Metal-to-metal diaphragm seals
- Helium leak rate of $1x10^{8}$ scc/sec. All high purity regulators are inboard leak checked with a helium mass spectrometer
- 2" dual scale gauges
- Cartridge-type seat assemblies with 10 micron inboard filter
- 2" brass bar stock body regulators with ports for high and low pressure transducers or alarm switches
- 180° lever with arrow indicates which side of the manifold is the active side
- 360° rotating captured vent for remote venting of process gases (optional)
- Regulator bodies are mounted on rear bracket
- Audible and visual alarms (optional)

SGD 600 Specifications

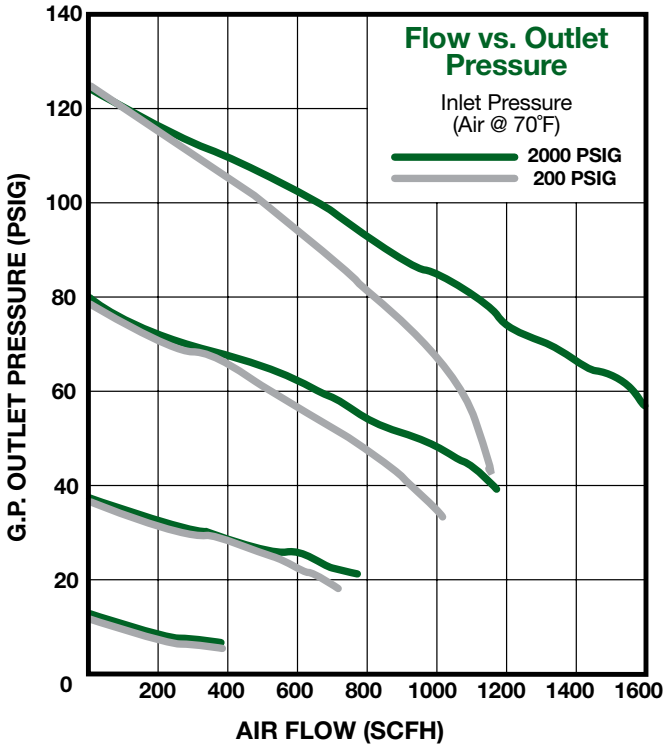
- Maximum inlet pressure - 3000 psig
- Maximum delivery flow rate - See Performance Data
- Outlet pressure ranges:
  - Right Bank as Primary: 250 psig max.
  - Right Bank as Secondary: 165 psig min.
  - Left Bank Preset: 200 psig
- Switchover Pressures
  - Right to Left Bank: 200 psig
  - Left to Right Bank: 165 psig
- Inlet & Outlet Ports - 1/4" NPT (Female)
- Temperature Operating Range -40° to 140°F (-40° to 60°C)
- Outlet pressure rise - .53 psig / 100 psig inlet decay
- Flow coefficient - Cv = .083
- Weight - 8.5 lbs (3.8 kgs)
- Mounting Hole Spacing - 8.5" W x 2.5" W

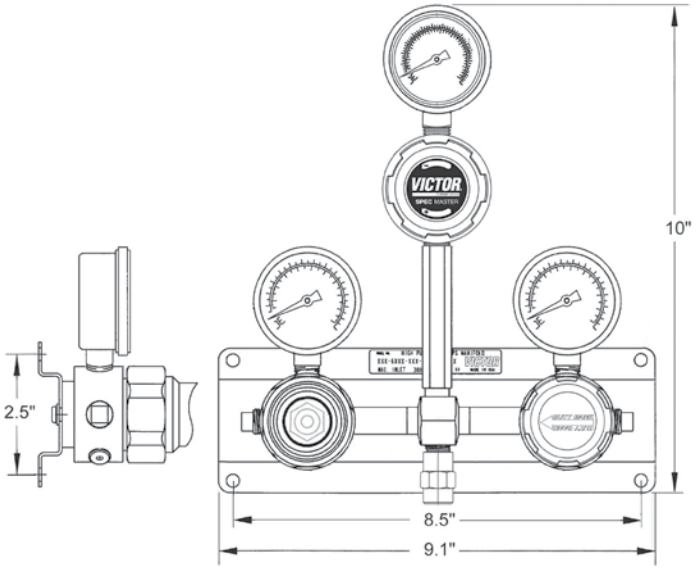
Materials of Construction

SGD 600 Stainless Steel

- Body - 316L Stainless Steel Bar Stock
- Spring Housing Cap - Chrome-plated Brass
- Diaphragm - 316L Stainless Steel
- Nozzle - 316L Stainless Steel
- Seat - PCTFE™
- Seals - PTFE
- Poppet - 316L Stainless Steel
- Inboard Filter - 10 Micron Sintered Stainless Steel
- Seat Return Spring - 316L Stainless Steel
- Pressure Adjusting Spring - Heat-treated Spring Steel
- Adjusting Knob - Polypropylene

SGD 600 Performance Data





SGD 600 SWITCHOVER MANIFOLD ORDERING MATRIX

XXX-XXXX	XXX	XXX	XXX	XX
CENTER SECTION	HEADER* (R)	HEADER* (L)	CGA	STAINLESS STEEL PIGTAIL**
SGD 600B (Brass) SGD 600S (Stainless)	1RW 2RW 3RW 4RW 6RW	1LW 2LW 3LW 4LW 6LW	Brass 580, 320, 590, 346, 350, 540 Stainless Steel 240, 660, 330, 705	24", Flex 36", Flex

** Optional header configurations are available.*
*** Standard pigtails are stainless steel lined and include a check valve.*

ORDERING EXAMPLE:

SGD-600B-1RW-2LW-350-36
SGD 600B manifold, 1 header right, 2 header left, CGA 350 brass inlet and 36" flex stainless steel pigtail.

VHP 2100/2000 Switchover Manifold
High Purity Switchover Manifold

Applications

VHP 2100 manifold is a deluxe system for high purity gases. The system is highly recommended for laboratory and process plant applications where depletion of gas supply is unacceptable. The VHP 2100 is designed with an outlet regulator to maintain a constant downstream pressure. The system is available in brass or 316L stainless steel. In service and reserve indicator lights are standard on the VHP 2100 manifold. VHP 2000 manifold is the same manifold without
the in service and reserve indicator lights.

NOT DESIGNED FOR LIQUID CYLINDERS

VHP 2100/2000 Features

- 500 Series barstock regulators - High Purity for critical applications
- In service and reserve indicator lights standard*
- Metal-to-metal seals for low helium leak integrity
- Adjustable line regulator for constant delivery
- Line regulator enclosed in box for tamper - resistant protection
- Easy 180° lever to select primary gas source
- VHP 2100 Model incorporates pressure switches for remote alarm activation to indicate gas depletion*

** VHP 2100 model only*

VHP 2100/2000 Specifications

- Maximum inlet pressure - 3000 psig
- Outlet pressure ranges:
  - 15 (2-15 psig)
  - 40 (2-40 psig)
  - 80 (4-80 psig)
  - 125 (5-125 psig)
- Switchover Pressures
  - Right to Left Bank: 200 psig
  - Left to Right Bank: 165 psig
- Inlet & Outlet ports - 1/4" NPT (F)
- Temperature Operating Range -40° to 140°F (-40° to 60°C)
- Outlet pressure rise - None
- Flow coefficient - CV = .05
- Weight - 30 lbs

Materials of Construction

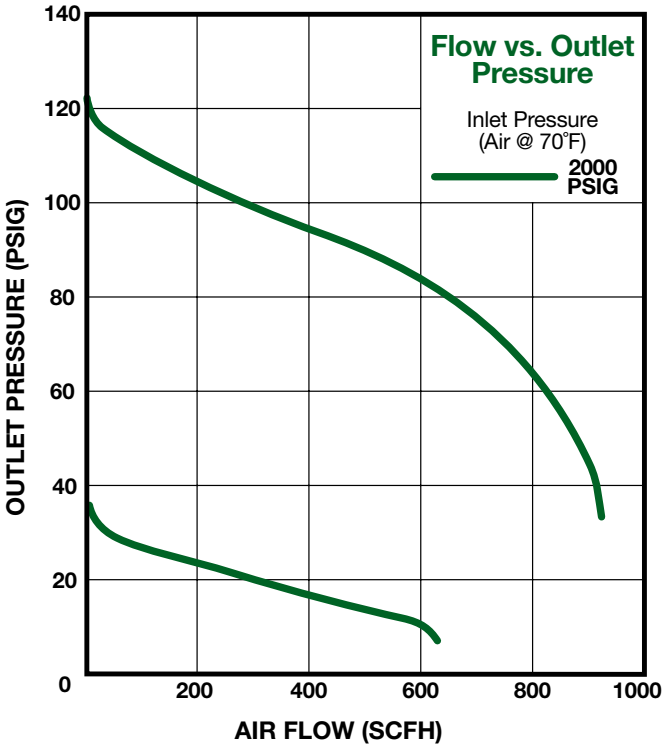
VHP 2100/2000S Stainless Steel

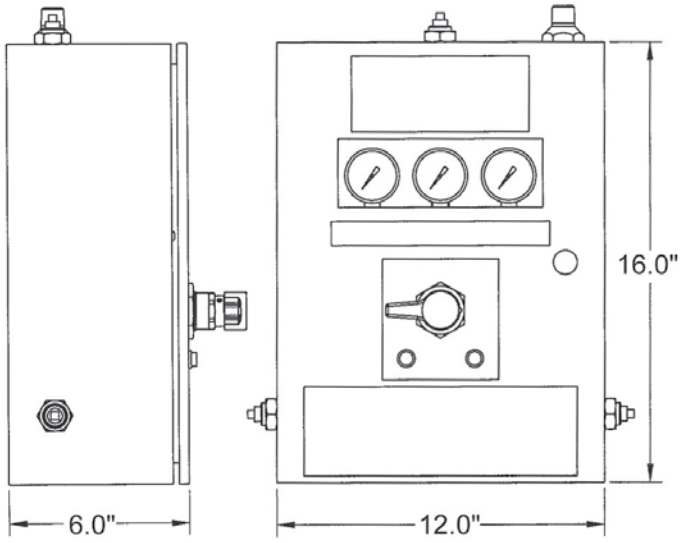
- Body - 316L S.S. Bar Stock
- Spring Housing Cap - Chrome-plated Brass
- Diaphragm - 316L Stainless Steel
- Nozzle - 316L Stainless Steel
- Seat - PCTFE™
- Seals - Teflon™
- Poppet - 316L Stainless Steel
- Inboard Filter - 10 Micron
- Seat Return Spring - 316L Stainless Steel
- Pressure Adjusting Spring - Heat-treated Spring Steel
- Adjusting Knob - Polypropylene
- Enclosure - 16 Gauge Powder Coated
- Tubing - 1/4" Stainless Steel
- Fittings - Stainless Steel Tube

VHP 2100/2000S Stainless Steel

- Body - 316L S.S. Bar Stock
- Spring Housing Cap - Chrome-plated Brass
- Diaphragm - 316L Stainless Steel
- Nozzle - 316L Stainless Steel
- Seat - PCTFE™
- Seals - Teflon™
- Poppet - 316L Stainless Steel
- Inboard Filter - 10 Micron
- Seat Return Spring - 316L Stainless Steel
- Pressure Adjusting Spring - Heat-treated Spring Steel
- Adjusting Knob - Polypropylene
- Enclosure - 16 Gauge Powder Coated
- Tubing - 1/4" Stainless Steel
- Fittings - Stainless Steel Tube

VHP 2100/2000 Performance Data





VHP 2100/2000 SWITCHOVER MANIFOLD ORDERING MATRIX

XXX-XXXX	XXX	XXX	XXX	XXX	XX
CENTER SECTION	DELIVERY PRESSURE	HEADER* (R)	HEADER* (L)	CGA	STAINLESS STEEL PIGTAIL**
VHP 2000B (Brass)	15	1RW	1LW	Brass 580, 320, 590, 346, 350, 540	24", Flex
VHP 2000S (Stainless)	40	2RW	2LW		
VHP 2100B (Brass w/lights)	80	3RW	3LW		36", Flex
VHP 2100S (Stainless w/lights)	125	4RW	4LW	Stainless Steel 240, 660, 330, 705	
	300	6RW	6LW		

** Optional header configurations are available.*
*** Standard pigtails are stainless steel lined and include a check valve.*

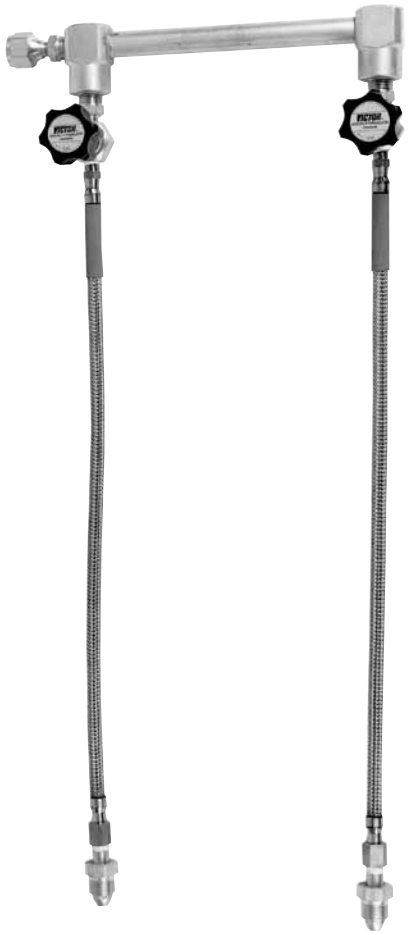
ORDERING EXAMPLE:

VHP-2000B-40-1RW-2LW-350-36
VHP 2000B manifold w/ 40 psi delivery pressure, 1 header right, 2 header left, CGA 350 brass inlet and 36” flex stainless steel pigtail.

HPRB & HPLB Brass Headers

Applications

Victor® brass headers are designed for high purity non-corrosive gas applications where two or more cylinders are needed for supply critical processes. The materials of construction will not off-gas and contaminate the gas stream. The design is highly resistant to inboard diffusion of atmospheric conditions. Flexible braided stainless steel pigtails, lined with stainless steel are standard.



HPRB & HPLB Features

- Brazed construction for maximum leak protection
- 7/8" O.D. brass pipe with bar stock tees
- DRK packless diaphragm shut off valves
- Flexible braided stainless steel pigtails, lined with stainless steel, with check valves
- Rated for Hydrogen and Helium service
- Easily connected to PDS and VHP

Materials of Construction

- Pipe - Brass
- Tees - Brass Bar Stock
- Valves - Packless Diaphragm
- Pigtails
  - Stainless Steel Braided
  - Stainless Steel Lined

HPRB & HPLB Specifications

- Maximum inlet pressure - 3000 psig
- Inlet connections are standard CGAs
- Outlet connections are standard CGAs

Typical Applications

- Gas Chromatography
- Process Analyzers
- Laser Gas Systems
- High Purity Gas Systems
- Non-Corrosive Gases
- Corrosive Gases

BRASS HEADER ORDERING MATRIX

XXXX	XXX	XXX	XXX	XXXXXX
CENTER SECTION	HEADER* (R)	HEADER* (L)	CGA	PIGTAIL
HPRB (Right) HPLB (Left)	2RW 3RW 4RW 6RW	2LW 3LW 4LW 6LW	580, 346, 590, 540, 350, 320, 4F, 4M	24FSCV

** Optional header configurations are available.*

HPRS & HPLS Stainless Steel Headers

Applications

Victor® stainless steel headers are designed for corrosive and non-corrosive gas applications where cylinders are needed to supply critical processes. The materials of construction will not off-gas and contaminate the gas stream. The design is highly resistant to inboard diffusion of atmospheric conditions. Victor DRK diffusion resistant shut off valves. Flexible braided stainless steel pigtails, lined with stainless steel are standard.

HPRS & HPLS Features

- TIG welded construction for maximum leak protection
- 7/8" O.D. stainless steel pipe with forged tees
- DRK packless diaphragm shut off valves
- Flexible braided stainless steel pigtails, lined with stainless steel, with check valves
- Rated for Hydrogen and Helium service
- Easily connected to PDS and VHP

Materials of Construction

- Pipe - 303 Stainless Steel
- Tees - 304 Forged Stainless Steel
- Valves - Packless Diaphragm
- Pigtails
  - Stainless Steel Braided
  - Stainless Steel Lined

HPRS & HPLS Specifications

- Maximum inlet pressure - 3000 psig
- Inlet connections are standard CGAs
- Outlet connections are standard CGAs

Typical Applications

- Gas Chromatography
- Process Analyzers
- Laser Gas Systems
- High Purity Gas Systems
- Non-Corrosive Gases
- Corrosive Gases

STAINLESS STEEL HEADER ORDERING MATRIX

XXXX	XXX	XXX	XXX	XXXXXX
CENTER SECTION	HEADER* (R)	HEADER* (L)	CGA	PIGTAIL
HPRS (Right) HPLS (Left)	2RW 3RW 4RW 6RW	2LW 3LW 4LW 6LW	580, 540, 590, 660, 350, 240, 705, 330, 4F, 4M	24FSCV

** Optional header configurations are available.*

International Customer Care: 1-940-381-1212 / FAX 1-940-483-8178
VictorEquip.com

Pressure Switches

These pressure switches are designed to activate remote alarm systems on Victor® manifold systems. Once your minimum pressure is set, the pressure switch will activate your remote alarm upon depletion. These are explosion proof models in 15 amp, 125 / 250 / 480 VAC resistive design. Switches can be wired “normally opened” or “normally closed.”

CSA Listed
FM Approved

PART NO.	PRESSURE RANGE (PSIG)	MAX INLET (PSIG)	DIAPHRAGM MATERIALS	CLASSIFICATION	SWITCH OUTPUT	ELECTRICAL CONNECTION	PRESSURE CONNECTION
1118-0069	2-50	500	316 SS	Explosion Proof	SPDT	3/4" NPT(F)	1/4" NPT(F)
1118-0070	125-3000	10,000	303 SS	Cleaned for Oxygen	SPDT	1/2" NPT(F)	1/4" NPT(F)
1118-0071	30-575*	2500	Viton	Cleaned for Oxygen	SPDT	1/2" NPT(F)	1/4" NPT(M)
1118-0072	0-300	350	316SS	Cleaned for Oxygen	SPDT	7/8"	1/4"" NPT(F)
1118-0074	50-1000	6000	316 SS	NEMA 4; 7; 9; IPGG	SPDT	3/4" NPT(F)	1/2" NPT(F)
1118-0075	250-3500	6000	316 SS	NEMA 4; 7; 9; IPGG	SPDT	3/4" NPT(F)	1/2" NPT(F)

** Factory set at 183 PSIG*

Remote Alarms

Victor Alarm Systems are designed to provide a warning of service interruption when used on manifolds. Used in conjunction with a pressure switch, the Victor Alarm System will provide both visual or audio/visual warning of cylinder depletion. The Victor Alarm System is for use with one or two gas manifold systems. Once activated, a visual only alarm will change from a “green” indicator for normal operation to a “red” indicator for depleted cylinders. Once the system is repressurized, the indicator lights will return to the normal “green” position. For systems with the audio/visual feature and audible buzzer (alarm) is rated at 90 DB @ 2 ft. Alarm will ring and signal that the primary bank of cylinders is depleted. A reset button conveniently located on the front of the unit will deactivate the buzzer. The “red” light will remain on until the exhausted bank has been replaced. Ideal for Industry, Medical and Specialty Gas use. Easy to wire and helps prevent downtime.

Design & Construction

- Transformer (125 VAC X 15 VDC) w/ 6 foot cord included
- Panels may be flush or back mounted
- 125 VAC/15 VDC
- Durable plastic case
- High intensity LED’s

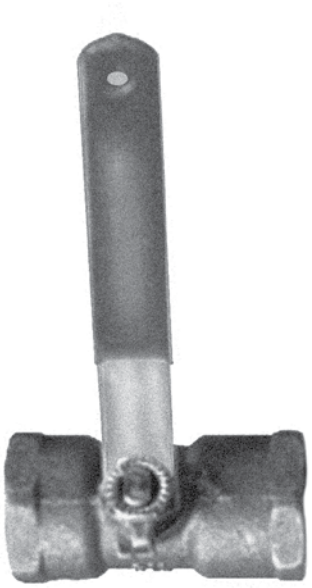
Dimensions

- Visual: 5" H X 3" L X 2" D
- Audio/Visual: 6" H X 3" W X 2" D
- wo Gas: 6" H X 6" W X 2" D

PART NO.	MODEL NO.	TYPE	# OF GASES
0265-0030	MA24-1V	VISUAL	1
0265-0031	MA24-1AV	AUDIO/VISUAL	1
0265-0032	MA24-2AV	AUDIO/VISUAL	2
0265-0033	MA115-1V	VISUAL	1
0265-0034	MA115-1AV	AUDIO/VISUAL	1
0265-0035	MA115-2AV	AUDIO/VISUAL	2

Ball Valves

The Victor® Bypass Valve is designed to allow shut-down of primary gas supply without interruption of gas service. These 1/2" and 3/4" bypass assemblies permit the user to shut off the primary supply and access a back-up or temporary gas source. This can be used to perform routine manifold maintenance and repair.



Design & Construction

- Forged brass body
- Teflon™ seat
- Chrome plated ball
- Teflon seals
- Steel handle
- 400 psig rating
- Clean for Oxygen service

PART NO.	DESCRIPTION
0660-0032	1/2" Ball Valve
0660-0042	3/4" Ball Valve

Hydraulic Flash Arrestors

Required on manifolds with two or more Fuel Gas Cylinders. These units provide flashback protection at the source of the gas. These systems are designed to provide protection via the use of ethylene-glycol in the unit. Ethylene Glycol is provided with all units. Included in each unit is a pressure relief valve which provides additional protection to the system in the event of over-pressurization. Maximum flow is 1000 SCFH for the FB-2A and 300 SCFH for the FB-1A. Hydraulic Arrestors are FM approved.

PART NO.	MODEL NO.	GAS SERVICE
1116-0033	Pigtail-Dry Type	Acetylene
1116-0038	FB-2A	Acetylene
1116-0039	FB-2LPG	LPG
1116-0044	Stand (only)(300)	All Gases
1116-0045	FB-1A	Acetylene
1116-0046	FB-1LPG	LPG
1116-0044	Stand (only)(300)	All Gases

International Customer Care: 1-940-381-1212 / FAX 1-940-483-8178
VictorEquip.com

Wall Brackets, Floor Stands, & Manifolds Stands

Every Victor® system comes equipped with mounting brackets so the system can be permanently mounted to a wall. In the event that wall mounting is not feasible, all Victor systems can be Floor Mounted via our Floor Stand. This stand fits all Victor Manifolds and one is recommended for every 4 cylinders. Just attach the mounting brackets included with the floor stand and you are ready to go. Chaining or bracketing cylinders is required. Therefore, Victor provides the following wall mount brackets or stands for use with your manifold system. Available in single or double cylinder designs, chain included.

Double

Single

PART NO.	MOUNTS	NO. OF CYLINDERS	TYPES OF GAS	DIMENSIONS
1421-0045	Wall Mount	Single Cylinder	Oxygen & Inerts	9" wide
1421-0047	Wall Mount	Two Cylinder	Oxygen & Inerts	9" wide
1421-0048	Wall Mount	Two Cylinder	Acetylene & Fuel Gas	13" wide
1106-0100	Stand	Manifold Stand	Oxygen, Inerts, Acetylene & Fuel Gas	60½" Tall
1106-0016	Wall Mount	Manifold Brackets (1)	--	--

ACCESSORIES

Gas Service Labels

PART NO.	DESCRIPTION
1415-0356	Oxygen
1415-0373	Acetylene

Pigtails

Replacement pigtails for Victor manifolds or applications requiring pigtails. Rigid copper and stainless steel braided flexible models available. Dry Flash Arrestor included.

Rigid

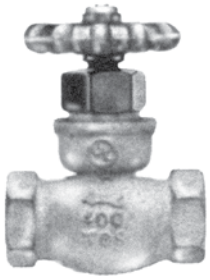
Flexible

PART NO.	CGA	GAS SERVICE	LENGTH	TYPE	CHECK VALVE
1123-0020	320	Carbon Dioxide	24"	Flexible	Yes
1123-0078	300	Acetylene	24"	Flexible	Yes + FA
1123-0594	326	Nitrous Oxide	24"	Rigid	Yes
1123-0596	346	Breathing Air	24"	Flexible	Yes
1123-0597	350	Hydrogen Methane	24"	Rigid	Yes
1123-0009	510	Acetylene	24"	Flexible	Yes + FA
1123-0008	510	Acetylene, LP Gas	24"	Flexible	Yes
1123-0503	540	Oxygen	24"	Rigid	No
1123-0504	540	Oxygen	24"	Rigid	Yes
1123-0505	540	Oxygen	36"	Rigid	Yes
1123-0606	540	Oxygen	24"	Flexible	Yes
1123-0609	540	Oxygen	36"	Flexible	Yes
1123-0600	540	Oxygen	48"	Flexible	Yes
1123-0599	580	Inert Gas	24"	Flexible	Yes
1123-0506	580	Inert Gas	48"	Flexible	Yes
1123-0507	580	Helium	24"	Rigid	Yes
1123-0014	590	Air	24"	Flexible	No

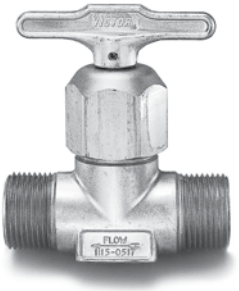
FA = Dry Flash Arrestor (Included)

Valves

PART NO.	DESCRIPTION	INLET	OUTLET
1113-0003	Globe Valve	3/4" NPT(F)	3/4" NPT(F)
1114-0000	Module Valve - Oxygen	CGA 540	1/2" NPT(M)
1114-0001	Module Valve - Acetylene / LP Gas	CGA 510	1/2" NPT(M)
1114-0027	Module Valve - Inert Gas	CGA 580	1/2" NPT(M)
1114-0010	Station Valve - Oxygen w/ cap chain, check valve	1/2" NPT(M)	7/8"-14 RH(M) CGA 024
1114-0011	Staion Valve - Fuel w/ cap chain, check valve	1/2" NPT(M)	7/8"-14 LH(M) CGA 025
1114-0033	Station Valve - Inert w/ cap chain, check valve	1/2" NPT(M)	7/8"-14 RH(F) CGA 034
1115-0517	Master Valve	1–11½ NPS RH(M)	1–11½ NPS RH(M)
1115-0515	Master Valve	1/2 NPT(F)	1/2 NPT(F)
1190-0000	Master Valve - Repair Kit	--	--



Globe Valve
1113-0003

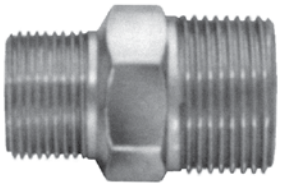


Master Valve
1115-0517

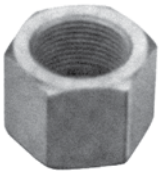
Module Valve
1114-0000

Union Fittings & Adaptors

PART NO.	TYPE	DESCRIPTION
0996-0018	Adaptor	3/4" NPT(M) X 1–11½ NPS RH **Use with 1113-0003*
0996-0014	Adaptor	1/2" NPT(M) X 1–11½ NPS RH
0996-0020	Adaptor	1/4" NPT(M) X 1–11½ NPS RH
0997-0006	Adaptor	3/4" NPT(M) X 1–11½ NPS LH **Use with 1113-0003*
0997-0007	Adaptor	1/2" NPT(M) X 1–11½ NPS LH
0997-0020	Adaptor	1/4" NPT(M) X 1–11½ NPS LH
0996-0004	Nut	1–11½ NPS RH (M) 996
0997-0004	Nut	1–11½ NPS LH (M) 997
1108-0592	End Plug	w/ 1/4" NPT(F) Port for Pressure Switch
0996-0005	Swivel	1/2" NPT(M) X 996/997
0996-0022	Swivel	1/4" NPT(M) X 996
0996-0031	Swivel	1/4" NPT(M) X 997 *(*special; 125 orifice for Hydrogen)*



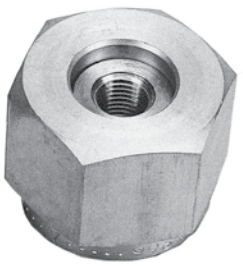
Adaptor
0996-0018



Nut
0996-0004

End Plug
w/ 1/4" NPT(F) Port
1108-0592

End Plug
1108-0580



Nut & Plug

International Customer Care: 1-940-381-1212 / FAX 1-940-483-8178
VictorEquip.com

Station Regulators

Not for Cylinder Use

REGULATOR	PART NO.	MODEL #	MAX. INLET PSIG	DELIVERY PSIG	GAS SERVICE	CONNECTIONS	
						INLET	OUTLET
EST4 Side Entry Bottom Outet	0781-5194	EST4-15-025	200	2-15	Acetylene	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5195	EST4-80-025	200	4-80	Hydrogen, Methane, Natural Gas, LP Gas	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5196	EST4-125-025	200	5-125	Hydrogen, Methane, Natural Gas, LP Gas	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5191	EST4-40-024	200	2-40	Oxygen	7/8"-14 RH (F)	9/16"-18 RH (M)
	0781-5192	EST4-80-024	200	4-80	Oxygen	7/8"-14 RH (F)	9/16"-18 RH (M)
	0781-5193	EST4-80-024	200	5-125	Oxygen	7/8"-14 RH (F)	9/16"-18 RH (M)
	0781-5189	EST4-125-034	200	5-125	Inert (Nitrogen, Argon, Helium)	7/8"-14 RH (M)	9/16"-18 RH (M)
EST4 Rear Entry Bottom Outet	0781-5209	EST4-15-025R	200	2-15	Acetylene	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5212	EST4-80-025R	200	4-80	Hydrogen, Methane Natural Gas, LP Gas	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5213	EST4-125-025R	200	5-125	Hydrogen, Methane, Natural Gas, LP Gas	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5204	EST4-40-024R	200	2-40	Oxygen	7/8"-14 RH (F)	9/16"-18 RH (M)
	0781-5205	EST4-80-024R	200	4-80	Oxygen	7/8"-14 LH (F)	9/16"-18 LH (M)
	0781-5206	EST4-80-024R	200	5-125	Oxygen	7/8"-14 RH (F)	9/16"-18 RH (M)
	0781-5207	EST4-125-034R	200	5-125	Inert (Nitrogen, Argon, Helium)	7/8"-14 RH (M)	9/16"-18 RH (M)

See page 10 & 11 for station drop data

CGA Conversions

- CGA 024 = 7/8" - 14 RH(F) Oxygen
- CGA 025 = 7/8" - 14 LH(F) Acetylene & Fuel Gases
- CGA 034 = 7/8" - 14 RH(M) Inert Gases
  - B Size = 9/16" - 18 RH Oxygen
  - B Size = 9/16" - 18 LH Acetylene & Fuel Gases
  - B Size = 5/8" - 18 RH Inert Gas

Line & Flow Meter Regulators

Not for Cylinder Use

REGULATOR	PART NO.	MODEL #	MAX. INLET PSIG	DELIVERY PSIG	GAS SERVICE	CONNECTIONS	
						INLET	OUTLET
ESL4 Side Entry	0781-5190	ESL4-125-250	3000	5-125	Air, Inert Gas, CO_2, Nitorus Oxide	1/4" NPT (F)	1/4" NPT (F)
	0781-5214	ESL4-125-250X	3000	5-125	Oxygen	1/4" NPT (F)	1/4" NPT (F)
	0781-5210	ESL4-80-250F	3000	4-80	Hydrogen, Methane Natural Gas, LP Gas	1/4" NPT (F)	1/4" NPT (F)
	0781-5211	ESL4-125-250F	3000	5-125	Hydrogen, Methane Natural Gas, LP Gas	1/4" NPT (F)	1/4" NPT (F)
	0781-5208	ESL4-15-250A	3000	2-15	Acetylene	1/4" NPT (F)	1/4" NPT (F)
Heavy Flow Line Regulator	0780-1229	L700C-500	350	4-80	Air, Inert Gas, CO_2, Nitorus Oxide	1/2" NPT (F)	1/2" NPT (F)
	0780-1207	L700D-500	350	5-125	Air, Inert Gas, CO_2, Nitorus Oxide	1/2" NPT (F)	1/2" NPT (F)
	0780-1236	Panel Mount - Same as L700D-500			Air, Inert Gas, Carbon Dioxide, Nitorus Oxide	1/2" NPT (F)	1/2" NPT (F)
	0780-1231	L700E-500	350	10-200	Air, Inert Gas, CO_2, Nitorus Oxide	1/2" NPT (F)	1/2" NPT (F)
	0780-1199	L711D-500	350	5-125	Hydrogen & LP Gas	1/2" NPT (F)	1/2" NPT (F)
	0780-1233	L710A-500	350	2-15	Acetylene	1/2" NPT (F)	1/2" NPT (F)
	0781-5211	L710A-750	350	2-15	Acetylene	3/4" NPT (F)	3/4" NPT (F)
	0780-1220	L700C-750	350	4-80	Air, Inert Gas, CO_2, Nitorus Oxide	3/4" NPT (F)	3/4" NPT (F)
	0780-1209	L700D-750	350	5-125	Air, Inert Gas, CO_2, Nitorus Oxide	3/4" NPT (F)	3/4" NPT (F)
	0780-1222	L700E-750	350	10-200	Air, Inert Gas, CO_2, Nitorus Oxide	3/4" NPT (F)	3/4" NPT (F)
Station Flow Meter Regulator	0781-2808	HRF 1425-034	200	50 CFH Argon 38 CFH CO_2 150 CFH Helium	Argon, CO_2, Helium, Argon/CO_2 Mix	CGA 034	5/8"-18 RH(F)

Flow Meters

Not for Cylinder Use

Victor® Flow Meters are precision, gas-flow measuring instruments designed for use in distribution systems, laboratories, MIG/TIG welding and a variety of other applications. Flow tubes and outer covers are made of impact resistant Lexan for maximum durability and service life.

UNITS WITH SINGLE GAS CALIBRATION

PART NO.	MODEL #	FLOW RANGE	INLET FITTING	OUTLET FITTING	FLOWTUBE ONLY
1000-0253	FM133	5-40 SCFH Hydrogen	9/16"-18 LH F	9/16"-18 LH M	1015-0070
1000-0271	FM153	5-40 SCFH Hydrogen	1/4" NPT M	9/16" LH M	1015-0070
1000-0254	FM132	15-75 SCFH Hydrogen	9/16"-18 LH F	9/16"-18 LH M	1015-0071
1000-0270	FM152	15-75 SCFH Hydrogen	1/4" NPT M	9/16"-18 LH M	1015-0071
1000-0264	FM200	30-100 SCFH CO_2	1/4" NPT M	5/8"-18 RH F	1015-0066

UNITS WITH TWO GAS CALIBRATION

PART NO.	MODEL #	FLOW RANGE	INLET FITTING	OUTLET FITTING	FLOWTUBE ONLY
1000-0251	FM130	10-60 SCFH Air 10-60 SCFH Nitrogen	9/16"-18 RH F	5/8"-18 RH F	1015-0060
1000-0268	FM150	10-60 SCFH Air 0-60 SCFH Nitrogen	1/4" NPT M	5/8"-18 RH F	1015-0060
1000-0255	FM135	4-18 SCFH Argon 10-50 SCFH Helium	9/16"-18 RH F	5/8"-18 RH F	1015-0063
1000-0256	FM145	4-18 SCFH Argon 0-50 SCFH Helium	5/8"-18 RH M	5/8"-18 RH F	1015-0063
1000-0257	FM155	4-18 SCFH Argon 10-50 SCFH Helium	1/4" NPT M	5/8"-18 RH F	1015-0063
1000-0261	FM137	15-65 SCFH Argon 40-200 SCFH Helium	9/16"-18 RH F	5/8"-18 RH F	1015-0064
1000-0262	FM147	15-65 SCFH Argon 40-200 SCFH Helium	5/8"-18 RH M	5/8"-18 RH F	1015-0064
1000-0263	FM157	15-65 SCFH Argon 40-200 SCFH Helium	1/4" NPT M	5/8"-18 RH F	1015-0064

UNITS WITH THREE GAS CALIBRATION

PART NO.	MODEL #	FLOW RANGE	INLET FITTING	OUTLET FITTING	FLOWTUBE ONLY
1000-0258	FM370	5-40 SCFH CO_2 5-50 SCFH Argon 20-150 SCFH Helium	9/16"-18 RH F	5/8"-18 RH F	1015-0057
1000-0259	FM371		5/8"-18 RH M	5/8"-18 RH F	1015-0057
1000-0182	FM372		1/4" NPT M	5/8"-18 RH F	1015-0057

NOTE: All Victor flow meters are back pressure compensated to ensure accurate readings at all times, even if line restrictions are present. All flow meters are calibrated to operate at constant 25 PSIG inlet pressure except the FM 200 which is calibrated to operate at constant 80 PSIG inlet pressure.

Manifold Regulator Chart

DESCRIPTION	PART NO.	MODEL NO.	DELIVERY (PSIG)	GAS SERVICE	CONNECTIONS
SR 450 Series Heavy Duty, Single Stage Used in: DUAL, SPLX, SSIN, SAM, LIQ (HP)	0781-0617	SR460MA-997	A 2-15	Acetylene	Inlet 1–11½ NPS(M) Outlet 1–11½ NPS(F)
	0781-0618	SR461MB-997	B 2-40	LP Gas	
	0781-0611	SR450MD-996	D 5-125	O_2 & Inerts	
	0781-0613	SR452MD-997	D 5-125	Hydrogen	
	0781-0615	SR453MD-996	D 5-125	N_2O, CO_2	
	0781-0619	SR461MD-997	D 5-125	LP Gas	
SR 700 Series High Flow, Single Stage Used in: SPLX, SSIN	0780-0806	SR710MA-997	A 2-15	Acetylene	Inlet 1–11½ NPS(M) Outlet 1–11½ NPS(F)
	0780-0807	SR711MB-997	B 2-40	LP Gas	
	0780-0797	SR700MD-996	D 5-125	O_2 & Inerts	
	0780-0798	SR700ME-996	E 10-200	O_2 & Inerts	
	0780-0803	SR702ME-997	E 10-200	Hydrogen	
	0780-0805	SR703ME-996	E 10-200	N_2O, CO_2	
SR 4 Series High Delivery, Single Stage Used in: SPLX	0781-1457	SR4MF-996	F 50-750	All Except	Inlet 1–11½ NPS(M) Outlet 1–11½ NPS(F)
	0781-1437	SR4MG-996	G 100-1500	Hydrogen	
	0781-1458	SR4MJ-996	J 200-3000	Methane	
	0781-1456	SR4MJ-997	J 200-3000	--	
	0781-1454	SR4TJ-996	J 200-3000	O_2 Transfill	
BSL-700 Series Liquid Cylinder Regulator	0780-1200	BSL700-500	E 10-200	CO_2 & Inerts	Inlet 1/2" NPT(F) Outlet 1/2" NPT(F)
LC-700 Series Liquid Cylinder Regulator Used in: LIQ	0780-1198	LC700-996	E 10-200	O_2 & Inerts	Inlet 1–11½ NPS(M) Outlet 1/2" NPT(F)
VTS 450 Series Two Stage	0781-3961	VTS452MD-997	D 5-125	Hydrogen	Inlet 1–11½ NPS(M) Outlet 1–11½ NPS(F)
	0781-3962	VTS452ME-997	E10-200	Hydrogen	
VTS 700 Series Two Stage, High Flow up to 7000 SCFH	0780-1006	VTS710MA-997	A 2-15	Acetylene	Inlet 1–11½ NPS(M) Outlet 1/2" NPT(F)
	0780-1007	VTS711MB-977	B 2-40	LP Gas	
	0780-0997	VTS700MD-996	D 5-125	O_2 & Inerts	
	0780-1004	VTS703MD-996	D 5-125	CO_2	
	0780-0998	VTS700ME-996	E10-200	O_2 & Inerts	
	0780-1005	VTS703ME-996	E 10-200	CO_2	

Special regulators can be requested for your application should the standard be inappropriate for your application.

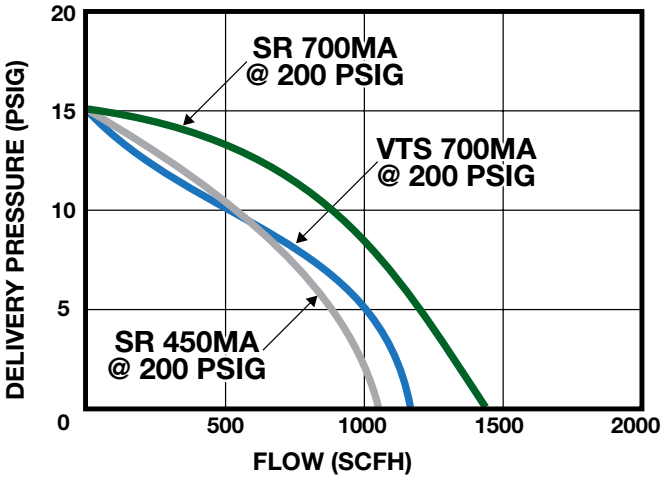
Please contact Customer Service at 1-800-569-0547 for more information.

Manifold Regulator Flow Data

The following information is provided to show manifold delivery capability (SCFH) with MINIMUM (200 PSIG) cylinder pressure. Tests were conducted using air at 70 degrees Fahrenheit and with no flow restrictions.

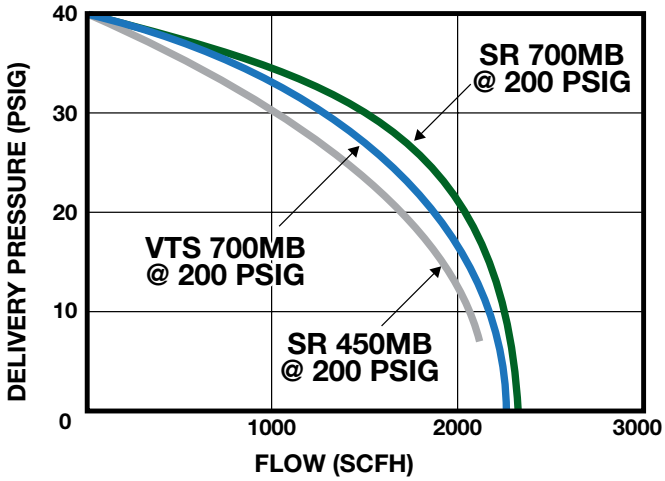
MA Models

A Delivery Range



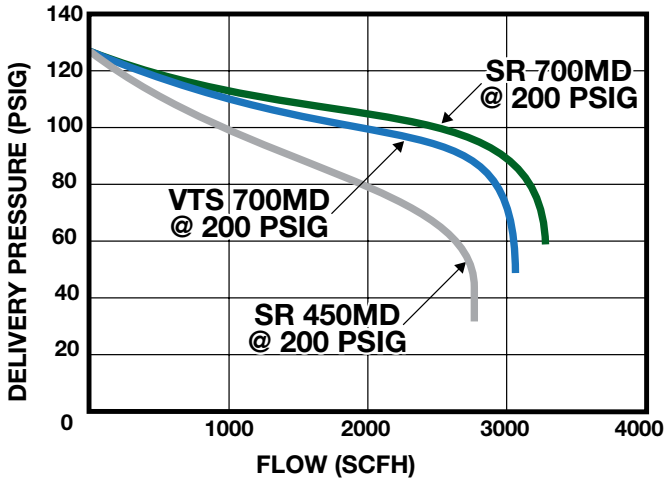
MB Models

B Delivery Range



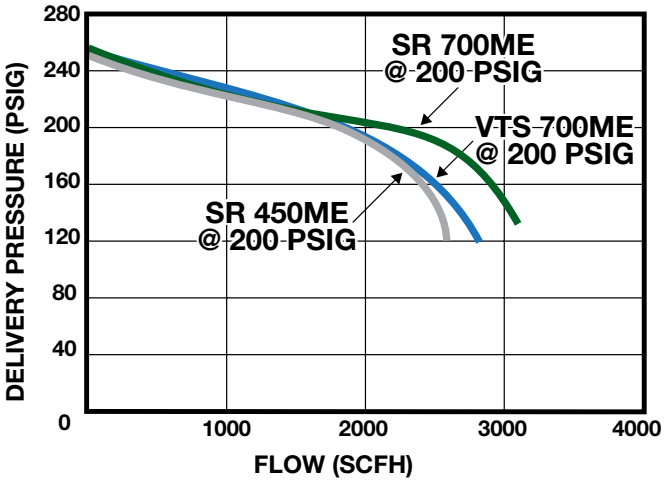
MD Models

D Delivery Range



ME Models

E Delivery Range



Victor® Single Stage Regulators
are recommended for applications where slight delivery pressure changes due to decreasing cylinder pressures would not affect flow/pressure requirements.

REGULATORS

Regulator Performance Data

How to read the Flow Data Charts on the following pages:

The regulator flow data is provided to assist in determining the proper regulator for the required application. The data is given for reference purpose only. If additional information is necessary, contact your local distributor or call Customer Service (U.S.) 1-800-569-0547.

The regulator flow data was established by connecting a valve to the regulator outlet. The valve was opened and the flow rates measured. The amount of pressure drop is shown on the curves (page 22) as the flow increases.

PRESSURE RANGE	STATIC PRESSURE
A	15 PSIG
B	40 PSIG
C	80 PSIG
D	25 PSIG
E	200 PSIG
F	750 PSIG
G	1500 PSIG
J	3000 PSIG
K	4500 PSIG

With an inlet pressure of 200 PSIG and an initial setting of 125 PSIG, the regulator will flow 1000 SCFH with a pressure drop to 98 PSIG. At 2000 SCFH flow, the pressure will drop to 78 PSIG. If a delivery pressure other than the ones shown on the flow charts is required, use an average curve rate between the upper and lower pressures shown.

Cylinder Pressure Rise

Single Stage regulators have a rise (increase) in delivery pressure as the cylinder pressure decreases. Listed below is the amount of pressure rise (increase) per 100 PSIG decrease in cylinder (inlet) pressure.

SR 4 Series - G Range 2.4
SR 4 Series - J Range 4.8
SR 450 Series - 0.6
SR 700 Series - 1.2

The change in delivery pressure of a Two Stage regulator from full to empty cylinder (inlet) pressure is negligible.

For Conversion to Other Gases

All flow capacity information is given in SCFH of free air (1.00). For conversion to other gases multiply the air flow by the correction factor listed below.

- Acetylene 1.05
- Argon 0.85
- Carbon Dioxide. 0.81
- Helium. 2.69
- Hydrogen 3.79
- Mapp® 0.82
- Natural Gas. 1.28
- Nitrogen 1.02
- Oxygen 0.95
- Propane 0.80

REGULATORS

For Manifold Questions Call

1-800-569-0547

How Many Cylinders Do I Need?

High Pressure

A typical large high pressure cylinder is 220 CF and actually contains 250 CF of gas due to a 10% overfill allowance. Using the formula below, the required number of cylinders for your application can be determined.

Example of Argon Mix Manifold System at a MIG Welding Shop:

(250 CF/Cylinder) less 20 CF left in Cylinder due to auto changeover leaves 230 CF/Cylinder. 250 CF if it's a manual changeover system.

(28 CFH/Station) x 6.5 Hours/Day x 50% Duty Cycle = 91.0 CF/Day/Station

91.0 CF/Day/Station x 8 Welding Stations = 728 CF/Day

$$\frac{\text{728 CF/Day}}{\text{230 CF/Cylinder}} = \text{3.16 Cylinders/Day}$$

$$\frac{\text{12 Cylinders/Header}}{\text{3.16 Cylinder Day}} = \text{3.8 Days/Header X 2 of Headers} = \text{Max 7.6 Days between deliveries}$$

Minimum Gas supply of 1 day required. Thus, in order to get gas delivery once a week (ie. every Wednesday) we need 24 cylinders delivered every seven days in order to have continuous, uninterrupted service with an automatic changeover manifold. Formula on page 4 under "Determining the Right Manifold for your Application."

How to Select the Correct Number of Acetylene Cylinders

To determine the number of Acetylene cylinders required for proper manifold operation, follow the guidelines below:

- The number of cylinders in the manifold is determined by the volume of gas in cubic feet per hour required. Determine the cubic feet per hour required for the largest tip used and multiply that by the number of torches, or stations, in operation at the same time. This will give you the total volume of each gas required per hour.
- The manifold should have enough cylinders to provide a minimum of one day's requirements.
- Maximum Acetylene withdrawal for continuous operation is 1/7* of each cylinder per hour. This chart is at a continuous withdrawal rate @ 70°F and 250 PSIG.

** CGA Pamphlet G-1*

CFH ACETYLENE WITHDRAWAL PER HOUR REQUIRED	# OF 300 CF CYLINDERS PER HEADER CONTINUOUS SERVICE
40	1
80	2
120	3
160	4
200	5
240	6
280	7
320	8
360	9
400	10
500	12
600	14
700	17
800	20
@ 70°F and 250 PSIG	

TECH SUPPORT

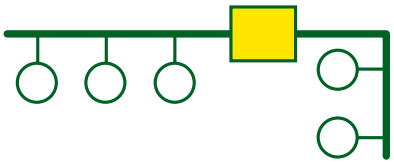
Manifold System Layouts

Whether it's a standard or special configuration, Victor® has the system for you. All we need to know is the requirements (ie. sizes, shapes, etc.) and we can build it for you. It is that simple. The following are examples of the most common configuration requirements.

Standard

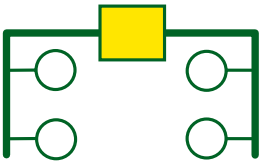
Wall Mount or Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

"L" Shaped



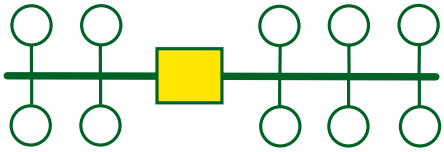
Wall Mount or Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

"U" Shaped



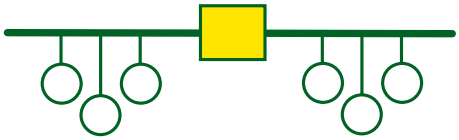
Wall Mount or Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

Crossover-Stand Mount



Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

Staggered or Short



Wall Mount or Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

Long

Wall Mount or Floor Stand Option
10" Centers O_2 & Inerts
13" Centers for Fuel Gases

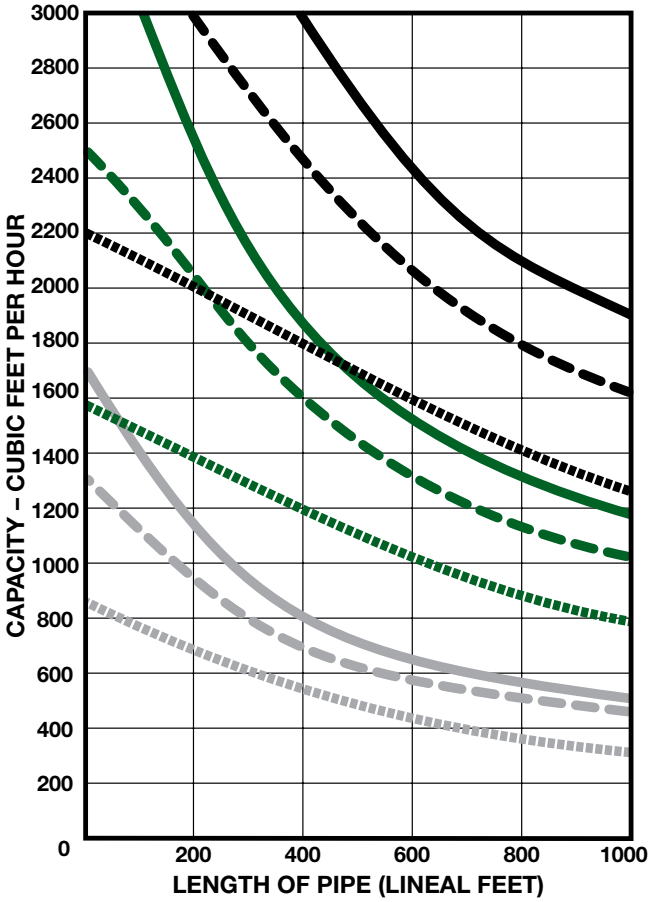
NOTE: Special configuration manifolds are built to your specification. Victor will not build a unit unless details of required dimensions are provided by the customer. Should you require assistance please contact Victor Customer Service 1-800-569-0547.

Piping the Shop

Victor® would like to make the following recommendations when piping your shop. This obviously is a crucial element to the manifold system; listed below are some guidelines for choosing the right size pipe. Consult your contractor, plus your local fire and building codes when making any final decision. The following charts provide a guideline for selecting the correct pipe size for your system. Pressure drop information is on the next page.

Oxygen Distributing Systems

Pipe Sizes for Oxygen Distributing Systems

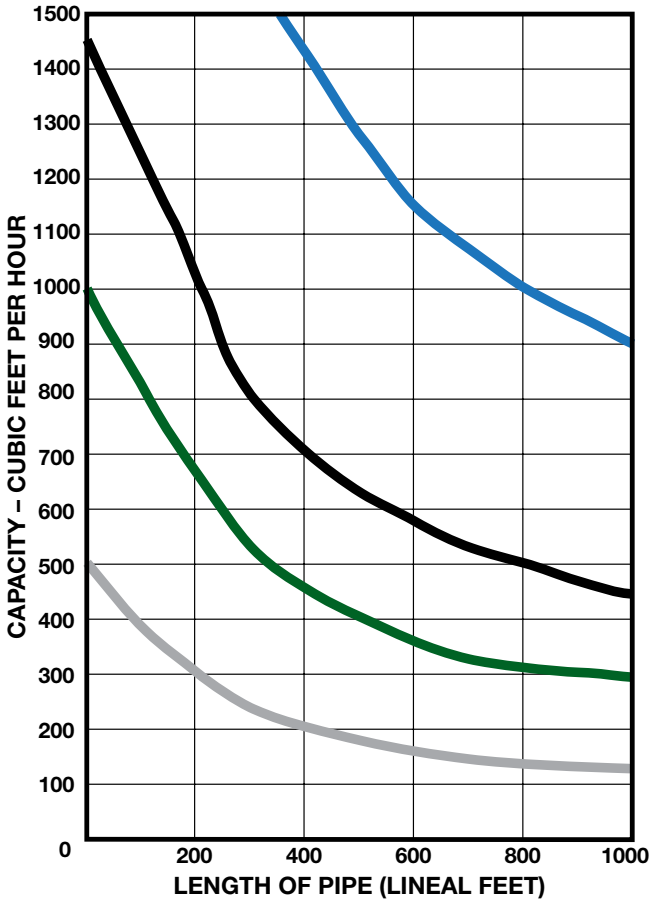


LINE PRESSURES	25–50 LBS.	50–75 LBS.	75–125 LBS.
1" PIPE			
1¼" PIPE			
1½" PIPE			

Acetylene Distributing Systems

Pipe Sizes for Oxygen Distributing Systems

(15 Pounds Pressure)



1" PIPE	1¼" PIPE	1½" PIPE	2" PIPE

Consult your Contractor or Local Fire and Building Codes for more information pertinent to your particular locale.

NOMINAL PIPE SIZES	SCHEDULE NO.	GLOBE VALVE	GATE VALVE	90° STANDARD ELBOW	STANDARD TEE	
					RUN OF TEE	SIDE OUTLET
1/2"	40	17.6	.7	1.6	1.0	3.1
3/4"	40	23.3	.9	2.1	1.4	4.1
1"	40	29.7	1.1	2.6	1.7	5.2
1½"	40	45.5	1.7	4.0	2.7	8.1
2"	40	59	2.2	5.2	3.4	10.3

Piping Systems Gas Flow and Pressure Data

The performance of gas apparatus supplied by manifold and piping systems is largely dependent upon pressure stability and adequate gas flow. The following charts are provided to assist in determining the minimum size requirements for piping and hose needed to provide sufficient gas flow without excessive pressure drop.

Note: Values may vary ± 10% depending on operating conditions.

NOMINAL PIPE SIZE	SCFH FREE AIR	LINE PRESSURE - PSIG							
		10	15	30	50	100	150	200	250
1/2" Schedule 40	500	--	1.50	1.00	.70	.40	.30	.20	.20
	750	--	--	2.10	1.40	.80	.60	.40	.40
	1,000	--	--	3.60	2.50	1.40	1.00	.80	.60
	1,500	--	--	--	5.40	3.10	2.10	1.60	1.30
	2,000	--	--	--	--	5.30	3.70	2.80	2.30
3/4" Schedule 40	500	.40	.40	.20	.20	--	--	--	--
	1,000	1.60	1.30	.90	.60	.30	.20	.20	.20
	1,750	--	--	2.50	1.70	1.00	.70	.50	.40
	2,500	--	--	5.00	3.40	1.90	1.40	1.00	.80
	4,000	--	--	--	--	4.70	3.40	2.60	2.10
1" Schedule 40	1,000	.50	.40	.30	.20	.10	--	--	--
	1,750	1.30	1.10	.70	.50	.30	.20	.20	.10
	2,500	--	--	1.40	1.00	.60	.40	.30	.20
	3,750	--	--	3.10	2.10	1.20	.80	.70	.50
	5,000	--	--	--	3.70	2.10	1.50	1.10	.90
	7,500	--	--	--	--	4.60	3.20	2.50	2.00
1½" Schedule 40	2,500	.30	.30	.20	.10	--	--	--	--
	3,700	.70	.50	.40	.30	.10	.10	--	--
	5,000	1.10	.90	.60	.40	.20	.20	.10	.10
	10,000	--	--	2.40	1.60	.90	.60	.50	.40
	12,500	--	--	3.70	2.50	1.40	1.00	.80	.60
2" Schedule 40	3,750	.20	.20	.10	--	--	--	--	--
	5,000	.30	.20	.20	.10	--	--	--	--
	7,500	.70	.60	.40	.30	.20	.10	--	--
	10,000	1.20	1.00	.70	.50	.30	.20	.10	.10
	12,500	--	1.50	1.00	.70	.40	.30	.20	.20
	15,000	--	--	1.50	1.00	.60	.40	.30	.30

How to calculate Pressure Drop (Loss) in Pounds for Other Pipe Lengths:

- Shorter Than 100 Feet
  - The friction loss in pipe lengths shorter than 100 feet may be calculated proportional to the length.
  - Example: For 50 feet, 1/2 the charted figure.
- Over 100 Feet
  - In pipe runs of more than 100 feet, the same proportional method may be used providing the resultant friction loss does not exceed 10 PSIG.
  - Example: For 150 feet, 1½ times the charted figure.

Unit Conversions

Pressure

PSI = 14.5 X BAR
Pa = 6,894.757 x PSI
KPa = 6.894757 x PSI

$$PSI = \frac{Pa}{6894.757}$$

$$PSI = \frac{KPa}{6.894757}$$

Flow

SCFH = 2.118 x LPM
SCFH = 60 x SCFM

$$LPM = \frac{SCFH}{2.118}$$

Units

PSI: Pounds per Square Inch
Pa: Pascal
KPa: 1000 Pascal
SCFH: Standard Cubic Feet per Hour
SCFM: Standard Cubic Feet per Minute
LPM: Liters per Minute

DIMENSIONS FOR CENTER SECTION AND HEADERS

MANIFOLD TYPE	CENTER SECTION ONLY	2 HEADERS	4 HEADERS	6 HEADERS
Dual	N/A	Fuel 26" (65 cm) All other 20" (50 cm)	N/A	N/A
Simplex (SPLX)	16.0" (40.6 cm)	Fuel 42" (106 cm) All other 36" (91 cm)	Fuel 68" (171 cm) All other 56" (141 cm)	Fuel 96" (236 cm) All other 76" (191 cm)
Single (SSIN)	16.0" (40.6 cm)	Fuel 42" (106 cm) All other 36" (91 cm)	Fuel 68" (171 cm) All other 56" (141 cm)	Fuel 96" (236 cm) All other 76" (191 cm)
Non-Cabinet (SAM)	32.0" (81.2 cm)	Fuel 58" (146 cm) All other 52" (131 cm)	Fuel 84" (211 cm) All other 72" (181 cm)	Fuel 110" (276 cm) All other 92" (231 cm)
Liquid (LIQ)	30.0" (75 cm)	Fuel 42" (106 cm) All other 36.5" (93 cm)	N/A	N/A
VM	13" (33 cm)	Fuel 38" (97 cm) All other 33" (84 cm)	Fuel 65" (165 cm) All other 53" (135 cm)	Fuel 91" (231 cm) All other 73" (185 cm)

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