



PRODUCT CATALOG

Over the years ICS Industries has been dedicated to servicing our customers with a wide variety of products from Industry leaders. Our extensive inventory maintained at our facility allows us to better serve you while providing quick lead times.

Our goal is keeping our customers business running efficiently by providing the best customer service, competitive pricing, and on- time deliveries. We work hard and push ourselves to the limit so that doing business with ICS is fast and easy.

We would like to thank all of our valued customers and appreciate your business. We would also like to welcome new customers so we can provide you with the same reliable service.

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If you don't see what you're looking for, please give us a call and we will do our best to help you find a solution.

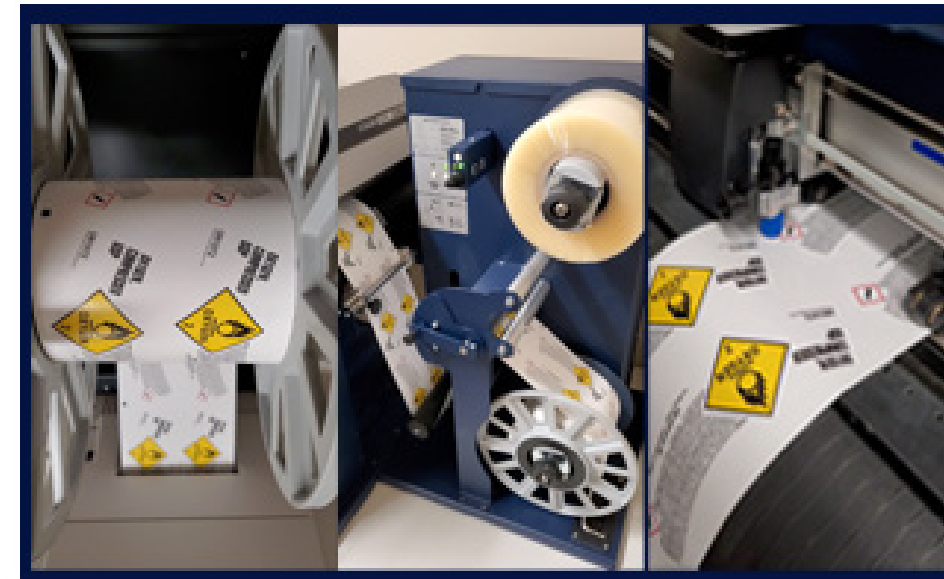
PRESISION LASER CUT SIPHON TUBES ALUMINUM / COPPER / STAINLESS



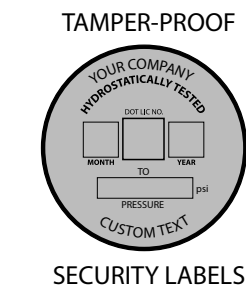
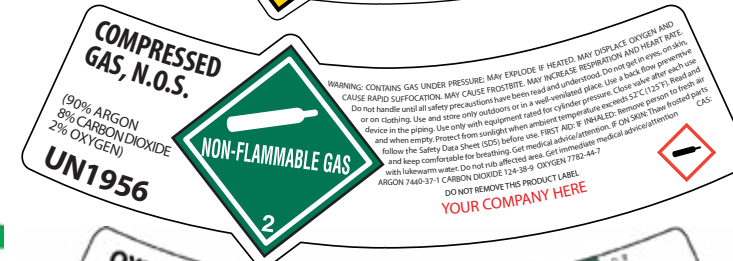
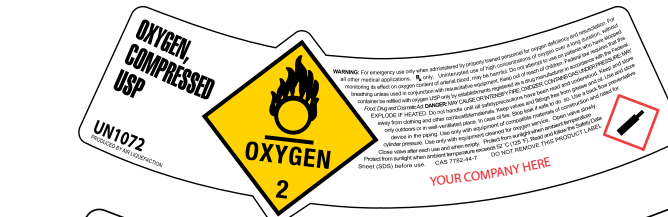
Custom Length Siphon Tubes, Mixing Tubes, Blending Tubes

Uses: Withdrawing of gas/liquid from bottom of the cylinder. Mixing and Blending Gases. Easily attaches to inlet of cylinder valve.

COMPLETE IN-HOUSE GRAPHIC DESIGN AND PRINT SHOP FOR CUSTOM IMPRINTED AND LAMINATED LABELS.



SERIAL NUMBERS CAN BE PLACED ANYWHERE ON THE FACE OF ANY LABEL. SEQUENTIAL NUMBERS CAN BE THE SAME ON EACH ROLL OR DIFFERENT.



OXYGEN, COMPRESSED U.S.P. UN 1072
PRODUCED BY AIR LIQUEFACTION

CONTENTS

Lot No. Pressure

Liters Date

DANGER!
COMPRESSED, OXIDIZING GAS MAY CAUSE OR INTENSIFY FIRE; OXIDIZER CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED.

In case of fire stop leak if safe to do so. Keep reduction valves free from grease and oil. Open valve slowly. Store and use in well-ventilated place. Use back flow preventive device in the piping. Close valve after each use and when empty. Protect from sunlight when ambient temperature exceeds 52°C (125°F). Container temperature should not exceed 52°C (125°F). Do not handle until all safety precautions have been read and understood. Keep store away from combustible materials. Use only with equipment cleaned for oxygen service and rated for cylinder pressure.

KEEP OUT OF REACH OF CHILDREN
WARNING: For emergency use only when administered by properly trained personnel for oxygen deficiency or resuscitation. For all other medical applications: RX ONLY. Federal Law prohibits dispensing without prescription. Uninterrupted use of high concentrations of oxygen over a long duration, without monitoring its effect on oxygen content of arterial blood, may be harmful. Use only with pressure reducing equipment and apparatus designed for oxygen. Federal Law requires that this container be refilled with Oxtgen U.S.P. only by establishments that are registered as a drug producer in accordance with the Federal Food, Drug, and Cosmetic Act.
CAS-7782-44-7 **DO NOT REMOVE THIS PRODUCT LABEL**
Manufactured By:
YOUR COMPANY HERE


DOT-SP 20630*
NEXT TEST DUE 2032

CREATE YOUR OWN CUSTOM LABEL FOR ANY PART OF YOUR BUSINESS!

SHIPPING...
ORGANIZING...
ACCOUNTING...
ADDRESS...
PROPERTY OF...
YOU NAME IT, WE CAN MAKE A LABEL FOR IT!!








Carry Handles	Part #	Description
   <p>Luxfer Catalina Kidde</p>		Luxfer Carry Handle, Black/Snap ring combo Catalina Carry Handle, Black/Snap ring combo Kidde Carry Handle, Black/Snap ring combo
Acetylene Cylinder Screens and Felts		
	Screen 3/8"	Acetylene screen, B & MC size, 3/8"
	Screen 3/4"	Acetylene screen, size, 3/4"
	Screen 1"	Acetylene screen, size, 1"
	Felt 3/8"	Acetylene felt, B & MC size, 3/8"
	Felt 3/4"	Acetylene felt, size, 3/4"
	Felt 1"	Acetylene felt, size, 1"
Teflon Thread Sealing Tape		
	1/2 X 520	1/2" PTFE Tape, 520' Roll - White
	3/4 X 520	3/4" PTFE Tape, 520' Roll - White
	1/2 X 520	1/2" PTFE Tape, 520' Roll - Yellow
Medical Valve Wrench		
		Adjustment wrench for medical post valve
Blast Caps		
		Blast Caps for Cylinder Painting
Cylinder Netting		
		Low Density Polyethylene Netting for Oxygen, Acetylene, and Propane Tanks

Wrap & Lock Dust Cover (Tamper Evident)		CGA 577 Cap for High Pressure Oxygen	
	033-003 White		033-598 Green
	033-478 Grey		
	033-366 Brown		
	033-026 Green		
Wrap & Lock Short-Stemmed Dust Cover		CGA 540 Push-On Cap	
	033-029 White		033-208 Green 033-361 Blue 033-209 Clear
Pull Over Dust Cap Pull Over Installation Tool		CGA 540 Push-On Cap for Walk-O2-Bouts	
	033-124 White		(Made for easy removal) 033-423 Black
	033-292 Green (Used only for 033-124)		
2 in 1 Seal & Retainer for 870 Post Valve		CGA 540 Intelli-Ox Cap	
	033-019 Red		033-594 Green
Universal Post Valve Sleeve With Pull Tab		CGA 540 Push-On Cap With Tear Tab	
	033-429 Natural		(Tear tab for easy removal) 033-175 Green 033-174 Brown
Universal Post Valve Sleeve With Washer Holder		CGA 2020 Push-On Cap Nitrous Oxide & Oxygen Mixtures	
	033-436 Natural		033-538 Blue
Universal Post Valve Sleeve With Washer Preloaded		CGA 540 Tamper Evident Cap With Strap	
	033-002436 Gray Washer		(With 8" Strap) 033-355 Green
	033-017436 Green Washer		(With 11" Strap) 033-517 Natural 033-427 Blue

Propane Caps for OPD Valves  Protects both the inside & outside of the valve. Keeps insects from building nests and rain & snow from freezing inside the valve.		Disposable Forklift Cylinder Connection Valve Cap  033-483 Blue 033-444 Green 033-512 Yellow 033-513 Orange 033-443 Red		033-334 Fluorescent Orange 033-503 Yellow 033-468 Blue 033-469 Green	
Propane Cylinder Paint Cap  Used to protect valve and prevent over spray when painting propane cylinders. Can be reused. 033-466 Natural		Reusable Forklift Cylinder Connection Valve Cap  033-464 Orange 033-472 Blue			
POL Propane Plug Comes with O-Ring & Safety Information Tag  033-288S Red 033-289S Yellow		20mm Quick-On Propane Valve Cap  033-549 Yellow 033-526 Blue 033-532 Red			
Reusable Propane Safety Cap  033-447 Blue 033-294 Black		Bayonet Propane Valve Cap  033-548 Yellow 033-527 Blue 033-535 Red			
Propane Cylinder Shot-Blast Cap & Plug  (Plug doesn't interfere with OPD check valve) 033-497 Shot-Blast Cap 033-498 Shot-Blast Plug (Colors shown are for illustration purposes only. Shot-Blast Caps & Plugs are natural in color)		Jumbo Propane Valve Cap  033-539 Yellow		27mm Snap-Tite Propane Valve Cap  033-540 Yellow	
POL Propane Safety Tag  033-509		Tropigas Propane Valve Cap  033-541 Yellow			
45° Pressure Relief Valve Deflector For Forklift Cylinder  Made from a special ABS/Nylon alloy which provides high impact strength and chemical resistance. This same material is used for our valve protectors that pass the DOT Drop Test. Unlike aluminum deflectors, this new product doesn't react to the differential metal valve causing oxidization and rust.		Pressure Relief Device Rain Cap  033-481 Black 033-475 Red		OSHA law 1910.110(h)(4)(i)(b) requires safety relief valves to be provided with loose fitting rain caps.	

Propane & Acetylene Valve Outlet Dust Plug  033-418 Red					
Push On Cap for B Acetylene  033-340 Red		Push On Cap for MC Acetylene  033-333 Red			

CYLINDER COLLARS

3" Non-Printed Collars for Post Valves  Part Number: 033-080 Beige 033-081 Black 033-082 Dark Blue 033-083 Light Blue 033-084 Medium Blue 033-085 Brown 033-086 Semi Clear 033-346 Copper 033-313 Gold 033-087 Dark Green 033-088 Lime Green 033-089 Gray 033-090 Magenta 033-199 Maroon 033-091 Fluorescent Orange 033-194 Orange 033-195 Hot Pink 033-196 Pink 033-197 Red 033-347 Silver 033-122 White 033-198 Yellow	5" Non-Printed Collars for Valves on Cylinders Without Caps  Part Number: 033-128 Beige 033-129 Black 033-130 Sky Blue 033-138 Dark Blue 033-139 Light Blue 033-131 Brown 033-132 Semi Clear 033-322 Copper 033-321 Gold 033-134 Dark Green 033-110 Lime Green 033-133 Gray 033-135 Magenta 033-111 Maroon 033-145 Fluorescent Orange 033-136 Orange 033-137 Hot Pink 033-143 Pink 033-121 Red 033-323 Silver 033-140 White 033-141 Yellow	7" Non-Printed Collars for Cylinders With Caps  Part Number: 033-109 Beige 033-071 Black 033-074 Dark Blue 033-072 Light Blue 033-056 Medium Blue 033-107 Brown 033-057 Semi Clear 033-113 Copper 033-104 Gold 033-058 Dark Green 033-073 Lime Green 033-063 Gray 033-105 Magenta 033-115 Maroon 033-059 Fluorescent Orange 033-101 Orange 033-102 Hot Pink 033-103 Pink 033-060 Red 033-108 Silver 033-061 White 033-062 Yellow	8.5" Non-Printed Collars for Cylinders With Caps  Part Number: 033-226 Beige 033-227 Black 033-228 Dark Blue 033-229 Light Blue 033-230 Medium Blue 033-231 Brown 033-242 Semi Clear 033-232 Dark Green 033-233 Lime Green 033-234 Gray 033-235 Magenta 033-236 Maroon 033-237 Fluorescent Orange 033-238 Orange 033-239 Hot Pink 033-240 Pink 033-241 Red 033-243 White 033-244 Yellow	Triangular Non-Printed Collars for Cylinders With Caps  Part Number: 033-155 Beige 033-156 Black 033-157 Dark Blue 033-158 Light Blue 033-159 Medium Blue 033-160 Brown 033-170 Semi Clear 033-314 Copper 033-315 Gold 033-161 Dark Green 033-162 Lime Green 033-163 Gray 033-164 Magenta 033-165 Fluorescent Orange 033-166 Orange 033-167 Hot Pink 033-168 Pink 033-169 Red 033-316 Silver 033-171 White 033-172 Yellow	Triangular Stencil Cut Out Collars  Part Number: 033-186 White "Customer Owned" 033-182 Yellow "Leaker" 033-181 Orange "Out of Hydro" 033-184 Brown "Paint" 033-183 Medium Blue "Revalve" 033-187 Hot Pink "Scrap" 033-185 Gray "Shot Blast" 033-188 Lime Green "Test"
					7" Round Printed Collars With Words in Black  Part Number: 033-410 Dark Green "Re-Work" 033-411 Red "Re-work"



OC[®] Three – Oxygen Compatible PTFE Paste Joint and Thread Sealer
Solutions for critical and demanding applications where no flammability, compatibility with oxygen and resistance to aggressive chemicals are essential.

Tested, approved and certified by NASA (ASTM G72)
OC Three PTFE Paste Joint and Thread Sealer is an oxygen-safe, aqueous-based PTFE formulation. It is a homogenous white paste that penetrates thread convolutions more effectively and The German Federal Institute for Materials Testing (BAM) for gaseous and liquid oxygen service. OC Products are approved and used by the major industrial gas providers.
Use in extreme temperatures (-400° F to +500° F) and as a vacuum grease for mid vacuum specifications to 10-3 Torr or in pressures up to 3500 psi (10,000 psi for fuel systems, 300 psi for natural gas). OC Three is especially capable for sealing oxygen and acetylene cylinder valves. It is compatible with diesel fuel, liquid propane gas, and pure oxygen. OC Three is safe for use with food processing applications. It is easy to apply from its 4 oz. (113.4 gram) squeeze tube with extended nipple and resealing cap. OC Three is a superior PTFE thread sealant paste that contains these optimal properties:
Water Soluble - Anti-Galling - Anti-Corrosive - Anti-Seize - Chemically Inert
Non-Toxic - Non-Flammable - Non-Migrating - Odorless.



OC Five Paste is a blended, oxygen-safe formulation consisting of polytetrafluoroethylene (PTFE) particles and polychlorotrifluoroethylene (PCTFE), producing a superior sealant for threads, O-rings, stop cocks, etc. that is chemically inert and environmentally safe. It has been tested and certified by The German Federal Institute for Materials Testing (BAM) for gaseous and liquid oxygen service. OC Products are approved and used by the major industrial gas providers.

OC Five Paste can be used as a pipe joint thread sealant in high pressure (up to 10,000 psi) wet or dry conditions where exposure to pure oxygen, harsh chemicals, or corrosive gases is probable. It is a superior pipe joint thread sealant which provides leak tight sealing in a wide range of applications. This off-white homogenous paste formulation provides unique sealing solutions; its properties remain unaltered over wide temperature ranges – from cryogenic through thermally stable to +450°F. It is non-flammable, non-migrating, non-toxic, odorless and waterproof as well as anti-corrosive, anti-galling, and dielectric. Use OC Five Paste for all types of equipment including: medical, welding, waste-water processing, water treatment, cryogenics, offshore rigging, deep diving, high vacuum, chlorine systems, oxygen systems, and nitrous oxide systems.

Cost effective for liquid oxygen, liquid nitrogen, cryogenic and vacuum applications to prevent and reduce component and equipment failures, maintenance or downtime.

Available in 2 oz. (57 gram) and 16 oz. (454 gram) jars with resealable lid for ease of use and storage. Also in 7 oz. (198 gram) resealable plunger.

Not recommended for aluminum against aluminum applications. Do not use with concentrated alkalis, fluorine (liquid) or chlorine trifluoride (liquid).



OC[®] Seven – Oxygen Compatible Grease
Solutions for critical and demanding applications where no flammability, compatibility with oxygen and resistance to aggressive chemicals are essential.

OC Seven Grease is a blended, oxygen-safe formulation consisting of polytetrafluoroethylene (PTFE) particles and polychlorotrifluoroethylene (PCTFE), producing a superior lubricant that is chemically inert and environmentally safe. It has been tested and certified by The German Federal Institute for Materials Testing (BAM) for gaseous and liquid oxygen service. OC Products are approved and used by the major industrial gas providers.

OC Seven Grease can be used as a vacuum grease in High Vacuum 10-7 Torr applications where exposure to pure oxygen, harsh chemicals or corrosive gases is probable. It is a superior lubricant for wet or dry conditions in a wide range of high pressure applications, including O-rings, gaskets, bearings, stop cocks, etc. This off-white homogenous grease formulation provides unique lubricating solutions; its properties remain unaltered over wide temperature ranges – from cryogenic through thermally stable to +450°F. It is non-flammable, non-migrating, non-toxic, odorless and waterproof as well as anti-corrosive, anti-galling, anti-seize, dielectric and lubricating. Use OC Seven Grease for all types of equipment including: medical, welding, waste-water processing, water treatment, cryogenics, offshore rigging, deep diving, high vacuum, chlorine systems, oxygen systems, and nitrous oxide systems.
Cost effective for liquid oxygen, liquid nitrogen, cryogenic and vacuum applications to prevent and reduce component and equipment failures, maintenance or downtime.

Available in 2 oz. (57 gram) and 16 oz. (454 gram) jars with resealable lid for ease of use and storage. Also in 7 oz. (198 gram) resealable plunger.

Not recommended for aluminum against aluminum applications. Do not use with concentrated alkalis, fluorine (liquid) or chlorine trifluoride (liquid).



Pint-Size Dispenser
Rust proof, break-proof plastic. Containers last indefinitely. Broad base, hard to tip. Long life brushes replaceable at nominal cost. Shipped empty.



Unbreakable Plastic
Eight ounce flexible plastic. Plastic cap with dauber. Wide mouth for easy refilling. Replacement dauber caps always available.



Squeeze Bottles
Unbreakable plastic, flip top for squirting. Excellent for hard-to-reach connections. Available in 4 and 8 oz. sizes. Meets Air Force Spec. MIL-PRF-25567



Economical Bulk
Single gallons in cartons of 4 and 6 each; 5-gal. pails; 55-gal. drums.

IMMEDIATE DELIVERY



RIGID CONTROLS
Foaming efficiency, safety, temperature range and overall performance carefully monitored by laboratory control procedures.

Use Sherlock 5-Second Leak Detector

...On gas connections, air lines, tanks, cylinders, refrigeration condensers, evaporators... any system or product that can be leak tested with air or gas.

EFFICIENT - UNIFORM- CONVENIENT

Pinpoints large and small leaks far better than any soap solution.

Ready mixed for immediate use. Brush on. Spray on. Squirt on. Swab on.

Large leaks form clusters of small bubbles that hold ten minutes or more. Detection sure and simple.

SHERLOCK FLUIDS CONTAIN NO FATTY ACIDS OR AMMONIAS

FOR WINTER TIME
Use SHERLOCK Low Temp
Also good for temperatures above freezing.

- MANY TYPES**
- REGULAR..... For use above freezing
 - LOW-TEMP..... For below and above freezing
 - EXTRA-LOW..... Extreme temperatures (-50°F)
 - TYPE CG..... For pure oxygen & compressed gases
 - TYPE F..... For refrigeration & air conditioning appliances

Fluids Made to AF Spec. MIL-PRF-25567

Approved by Air Force and Navy Bureau of Aeronautics

- TYPE I** For use at +35° to +160°F (+1°C to +70°C)
- TYPE II** For use at -65° to +35°F (-54°C to +1°C)

Special fluids custom - formulated for any application
Halogen & Chloride Free fluids available

SHERLOCK fluids comprise more than 70% of all chemical-type leak detectors used throughout the U.S. and Canada



Material Descriptions

Aflas®

Aflas® is the trade name (Asahi Glass Co.) for a non-conventional fluoroelastomer (FKM) material which has a different chemical structure than other fluoroelastomers. It is considered a "cousin" of the fluoroelastomers, but offers significant advantages over them. Aflas® exhibits excellent heat resistance; 3 months @ 446F, 30 days @ 500F and intermittent tolerance @ +572F. It also offers excellent chemical resistance to high concentrations of acids, alkali and oxidants under high temperatures. In addition, it offers exceptional electrical insulation properties, similar to those of Silicone and EPDM rubber. Aflas® is primarily used for automotive oil sealing components.

Butyl (IIR)

Butyl, also known as isobutylene isoprene, has exceptional resistance to gas permeation, along with excellent water and steam resistance. Butyl has a temperature range of -65F to +200F. For most O-Ring applications, Ethylene Propylene (EP) has replaced Butyl due to similar properties, but with better heat and compression set resistance.

Chloroprene, Neoprene® (CR)

Chloroprene (Neoprene®) was one of the first synthetic materials developed as an air-oil resistant substitute for Natural Rubber. It has the unusual characteristic of being resistant to both petroleum lubricants and oxygen over a temperature range of -40F to +225F. It also provides good resilience and flex resistance.

Epichlorohydrin, Hydrin® (ECO)

Hydrin® is a specialty compound, acceptable for use over a temperature range of -40F to + 275F. This compound combines good petroleum oil and fuel resistance, with good resistance to sunlight, ozone and weathering. Hydrin® has good chemical resistance, but may be corrosive to adjacent metal parts. It is frequently used for fuel and oil seals which may be exposed to weather.

Ethylene Acrylic, Vamac® (AEM)

Ethylene acrylic (Vamac®) is a specialty Dupont-Dow Elastomer offering a temperature range of -40F to +300F. It provides low temperature flexibility for automotive applications including automatic transmission seals, power steering seals and gear box seals. It also exhibits excellent resistance to weathering, ozone and air aging.

Ethylene Propylene, EPDM, or EP (EP)

EP is a copolymer of ethylene and propylene, while EPDM is a terpolymer combining ethylene, propylene and a diene monomer. EP materials offer a temperature range of -65F to +300F and offer excellent resistance to ozone, weathering, steam, water and phosphate ester type hydraulic fluids. EP can be manufactured to conform to FDA requirements, making it ideal for use with foods and medical devices.

Fluorocarbon, VITON® (FKM)

VITON® is the trade name for DuPont-Dow Elastomers Fluorocarbon or FKM material. VITON® has a temperature range of -20F to +400F, and provides excellent resistance to a wide variety of chemicals, weather and compression set requirements. The relatively high level of fluorine in VITON® materials allows for exceptional resistance to chemical attack, but with limited low temperature capabilities. Intermittent exposure to +600F can be tolerated for brief periods of time. Many industrial products are now switching to O-Rings made of VITON®, making it the most significant elastomer development in 50 years.



Material Descriptions

Fluorosilicone (FVMQ)

Fluorosilicones combine the best properties of fluorocarbons and silicones. Fluorosilicones resist solvents, fuel and oil (similar to Viton®); but also provide stability over a broad temperature range of -100F to +350F. This elastomer is frequently used in aircraft fuel systems. However, it is limited to static seal applications due to poor tear resistance.

Hydrogenated Nitrile, HNBR

HNBR, sometimes referred to as Highly Saturated Nitrile (HSN), offers a temperature range of -40F to +350F. HNBR is often used in automotive refrigeration systems using Freon 134A, and in power steering seals using Type A Fluid. To manufacture HNBR, Nitrile is first dissolved in a solvent, then a catalyst is used and hydrogen gas hydrogenates the Nitrile. While HNBR is in the Nitrile family, it undergoes this extensive, and consequently expensive, process to become HNBR.

Nitrile, Buna-N (NBR)

Nitrile, also known as Buna-N or NBR, is a copolymer of Butadiene and Acrylonitrile. It is the most commonly used elastomer for sealing products. It has a temperature range of -40F to +250F and is exceptionally resistant to petroleum base oils and hydrocarbon fuels. Nitrile materials also exhibit excellent tensile strength and abrasion resistance properties. The material performs well with most dilute acids, silicone oils and lubricants and in water applications. It is not recommended for use with ketones, aromatic hydrocarbons and phosphate ester hydraulic fluids. Ozone resistant Nitriles are recommended where extended exposure to air and ozone are anticipated. More than 50% of the O-Rings sold are Nitrile O-Rings, commonly used in hydraulic/pneumatic motors, cylinders, pumps and valves.

Polyacrylate (ACM)

Polyacrylate offers a broad temperature range of -20F to +350F. Often used in automobile transmissions and power steering seals using Type A Fluid, it has excellent resistance to petroleum fuel and oils. It also exhibits good ozone and oxidation resistance, as well as good flex cracking resistance.

Polyurethane (AU / AE)

Polyurethane compounds offer exceptional abrasion and wear resistance and are offered in two distinctively different variations. For use in oil, use a polyester type which has low volume swell, but softens dramatically when exposed to water. For water sealing applications, use the polyether type which retains its integrity in water, but swells significantly when exposed to oil. A hybrid version that is acceptable for both applications is available at a substantially higher cost.

Silicone (VMQ)

Silicone materials offer outstanding temperature resistance across a broad range, from -80F to +400F. Silicone materials provide excellent resistance to sunlight, ozone, oxygen, UV light and moisture. Its inert qualities make it the preferred material for use with food handling and medical applications. Silicones offers poor tensile, tear and abrasion resistance, and are not recommended for use in dynamic applications.

SBR

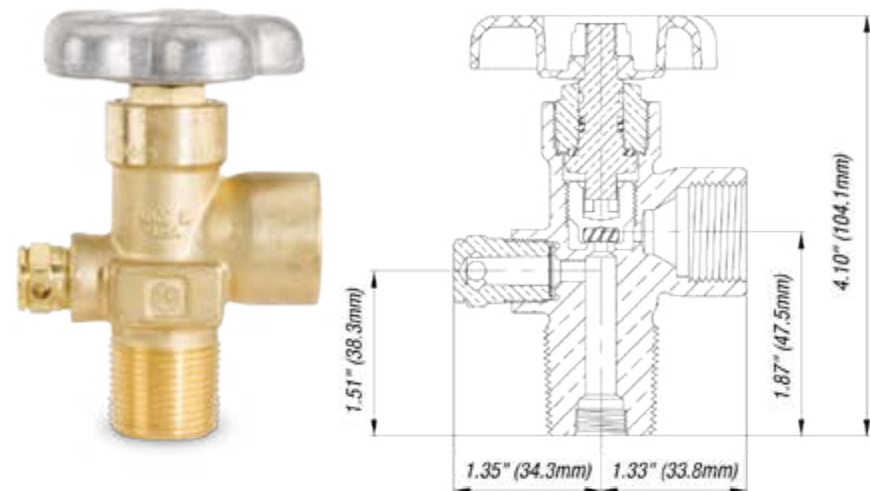
SBR, styrene butadiene, or Buna-S, was originally developed to replace natural rubber in tires. While sometimes used for automobile brake system seals, it has been replaced in most applications by Ethylene Propylene which offers superior heat and compression set resistance.

PTFE

PTFE is an outstanding O-Ring material not affected by most chemicals. PTFE O-Rings are best for chemical and heat resistance up to 500oF because they are shiny smooth without chips or marks which could cause leakage. It also conforms to MS28774.



GV & GVHM Series Global Industrial Gas Valves

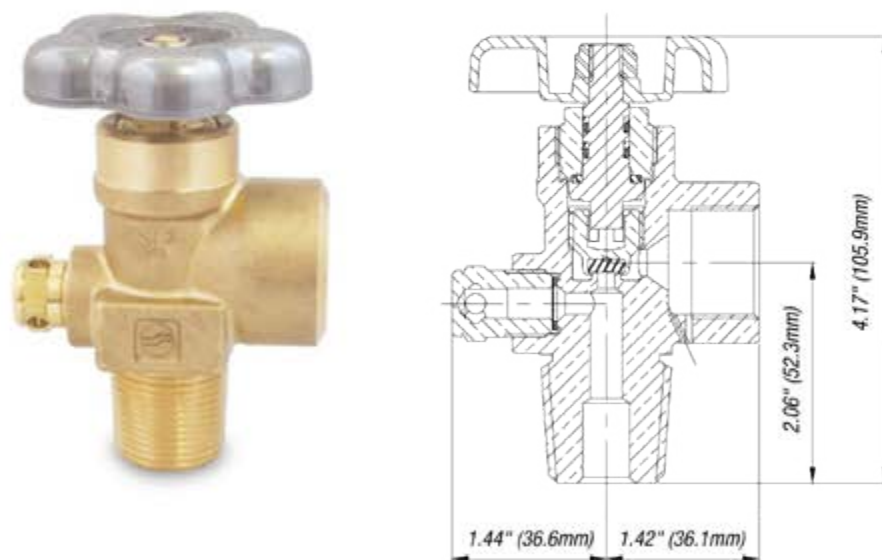


GV Series
Up to 3000 PSI Working Pressure

Designed for use in every country around the world. For use in cylinders containing oxygen, argon, carbon dioxide, nitrogen, helium and hydrogen, as well as welding gas mixtures.

Key Features & Benefits

- Automated assembly and testing processes ensure exceptional quality
- 100% helium leak tested
- Heavy-duty forged brass body for durability and high pressure
- Precisely machined internal components meet the most stringent international valve performance standards
- Pressure Relief Device (PRD) is a unitized plug design that provides excellent flow characteristics, ensures proper assembly and tamper resistance
- Metal-to-metal seal below bonnet threads prevents pressure in the threads at top of valve body
- Direct-drive stem design with optimized O-ring (GV) or double O-ring (GVHM) seal reduces friction and operates at exceptionally low torque levels
- Inlet and outlet thread configurations are available for a broad spectrum of customer, country and code specifications
- Tapped for dip tube as required



GVHM Series
3000 PSI and Above Working Pressure

GV & GVHM Series Global Industrial Gas Valves

Design Specifications		
	English	Metric
Maximum Working Pressure	GV: 3500 PSI GVHM: 6000 PSI	GV: 241 Bar GVHM: 413 Bar
Burst Pressure	GV: 10,000 PSI GVHM: 13,500 PSI	GV: 689 Bar GVHM: 931 Bar
Operating Temperature Range	-50° F → +149° F	-45° C → +65° C
Storage Temperature Range	-65° F → +155° F	-54° C → +68° C
Leak Rate Internal/External	GV: 1x10 ⁻³ atm cc/sec. GVHM: 1x10 ⁻⁴ atm cc/sec.	GV: 1x10 ⁻³ Bar mL/sec. GVHM: 1x10 ⁻⁴ Bar mL/sec.
Minimum Cycle Life	2000 Cycles	
Cv Flow Factor	Standard: .690 CO ₂ /Manifold: 1.23	
Closing Torque	20-30 in.-lbs.	2.2-3.3 N-m
Operating Torque	10-20 in.-lbs.	1.1-2.2 N-m
Bonnet Installation Torque	GV: 50-60 ft.-lbs. GVHM: 60-70 ft.-lbs.	GV: 68-81 N-m GVHM: 81-95 N-m
Handwheel Nut Installation Torque	15-35 in.-lbs.	1.7-3.9 N-m
PRD Installation Torque	GV: 25-35 ft.-lbs. GVHM: 40-50 ft.-lbs.	GV: 34-47 N-m GVHM: 54-68 N-m
PRD Flow Capacity	60 cfm @ 100 PSI	1700 L/min. @ 6.9 Bar

Materials of Construction		
Sherwood Part Number	Part Description	Materials of Construction
GV & GVHM Series Industrial and Chrome-Plated Valves		
N/A	Body	Forged Brass C37700; Chrome Plating When Applicable
N/A	Bonnet	Brass C36000; Chrome Plating When Applicable
1919A	Handwheel	Aluminum A380
1251-6	Handwheel Nut	Steel Class 8, Zinc Plating
N/A	Lower Plug	Brass C48500
N/A	Lower Plug Seat	Nylon Zytel 101
See Chart	PRD	Plug: Brass C36000; Chrome Plating When Applicable Rupture Disc: Nickel Alloy 201; Copper C22000 Webbed Seal Gasket: Copper Dead Soft C11000
N/A	Stem	Brass C36000
G011EP	O-Ring	Ethylene Propylene (EPDM)
N/A	Back-up O-Ring	Ethylene Propylene (EPDM)
N/A	Thrust Washer	Delriñ 500 AF

NOTE: GV & GVHM Series valves are not for use with CNG applications. For CNG Service, see NGV and NGVHM Series. No mechanical addition of force is to be used with handwheel-style valves without the use of controlled torque.

Standards Conformance	
CGA V-9	Standard for Gas Cylinder Valves
CGA S1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Specifications
ISO 10297	International Standard for Cylinder Valves Design Specifications
ISO 11363-1	25E Inlet Thread Specifications
AS2473	Australian Standard for Compressed Gas Cylinder Valves
A-A-59860	U.S. General Services Administration Standards for Gas Cylinder Valves

Inlet O-Ring for Straight Threaded GV Valves		
Sherwood Part Number	Size	Material
G907A	.625 UNF	Buna-N
G210A-9	.750 UNF	Buna-N
G216B	1.125 UNF	Buna-N
G016T	.625 UNF	PTFE
G210T	.750 UNF	PTFE
P1100X15-20T	1.125 UNF	PTFE

Lubricants	
Christo-Lube	Used in Valves for All Industrial Gas Applications
Turmoxygen	Used in GVHM Valves for Oxygen Service

GV & GVHM Series Global Industrial Gas Valves

For further ordering information, refer to the Selection of Pressure Relief Devices, the Pressure Relief Device Numbering Matrix, the Product Markings Reference and the Valve Part Numbering Matrix.

Ordering Information				
Sherwood Part Number	Gas Service @ 70° F	CGA Outlet	Outlet Thread Size	Inlet Thread Size
Carbon Dioxide				
GV32041-XX	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	1/2"-14 NGT
GV32061-XX	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	3/4"-14 NGT
GV32081-XX	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	1"-11 1/2 NGT
GV32025E1-XX	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	25E ISO
GV32051-XX-75	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	.750-16 UNF
GV32051-XX	0 PSI-3000 PSI	320	.825-14 NGO RH Ext.	1.125-12 UNF
Nitrous Oxide				
GV32641-XX	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	1/2"-14 NGT
GV32661-XX	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	3/4"-14 NGT
GV32681-XX	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	1"-11 1/2 NGT
GV32625E1-XX	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	25E ISO
GV32651-XX-75	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	.750-16 UNF
GV32651-XX	0 PSI-3000 PSI	326	.825-14 NGO RH Ext.	1.125-12 UNF
Air				
GV34641-XX	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	1/2"-14 NGT
GV34661-XX	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	3/4"-14 NGT
GV34681-XX	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	1"-11 1/2 NGT
GV34625E1-XX	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	25E ISO
GV34651-XX-75	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	.750-16 UNF
GV34651-XX	0 PSI-3000 PSI	346	.825-14 NGO RH Ext.	1.125-12 UNF
GVHM34761-XX	3001 PSI-4700 PSI	347	.825-14 NGO RH Ext.	3/4"-14 NGT
GVHM70261-XX	4701 PSI-6400 PSI	702	1.125-14 NGO RH Int.	3/4"-14 NGT
Carbon Monoxide and Hydrogen				
GV35045-XX	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	1/2"-14 NGT
GV35065-XX	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	3/4"-14 NGT
GV35085-XX	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	1"-11 1/2 NGT
GV35025E5-XX	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	25E ISO
GV35055-XX-75	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	.750-16 UNF
GV35055-XX	0 PSI-3000 PSI	350	.825-14 NGO LH Ext.	1.125-12 UNF
GVHM69565-XX	3001 PSI-4700 PSI	695	1.045-14 NGO LH Int.	3/4"-14 NGT
GVHM70365-XX	4701 PSI-6400 PSI	703	1.125-14 NGO LH Int.	3/4"-14 NGT
Oxygen				
GV54041-XX	0 PSI-3000 PSI	540	.903-14 NGO RH Ext.	1/2"-14 NGT
GV54061-XX	0 PSI-3000 PSI	540	.903-14 NGO RH Ext.	3/4"-14 NGT
GV54081-XX	0 PSI-3000 PSI	540	.903-14 NGO RH Ext.	1"-11 1/2 NGT
GV54051-XX-75	0 PSI-3000 PSI	540	.903-14 NGO RH Ext.	.750-16 UNF
GV54051-XX	0 PSI-3000 PSI	540	.903-14 NGO RH Ext.	1.125-12 UNF
GVHM57761-XX	3001 PSI-3500 PSI	577	.960-14 NGO RH Ext.	3/4"-14 NGT
GVHM70161-XX	3501 PSI-4700 PSI	701	1.103-14 NGO RH Ext.	3/4"-14 NGT
Argon, Helium, Krypton, Neon, Nitrogen and Xenon				
GV58041-XX	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	1/2"-14 NGT
GV58061-XX	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	3/4"-14 NGT
GV58081-XX	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	1"-11 1/2 NGT
GV58025E1-XX	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	25E ISO
GV58051-XX-75	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	.750-16 UNF
GV58051-XX	0 PSI-3000 PSI	580	.965-14 NGO RH Int.	1.125-12 UNF
GVHM68061-XX	3001 PSI-4700 PSI	680	1.045-14 NGO RH Int.	3/4"-14 NGT
GVHM67761-XX	4701 PSI-6400 PSI	677	1.030-14 NGO LH Ext.	3/4"-14 NGT
Sulfur Hexafluoride				
GV59041-XX	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	1/2"-14 NGT
GV59061-XX	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	3/4"-14 NGT
GV59081-XX	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	1"-11 1/2 NGT
GV59025E1-XX	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	25E ISO
GV59051-XX-75	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	.750-16 UNF
GV59051-XX	0 PSI-3000 PSI	590	.965-14 NGO LH Int.	1.125-12 UNF

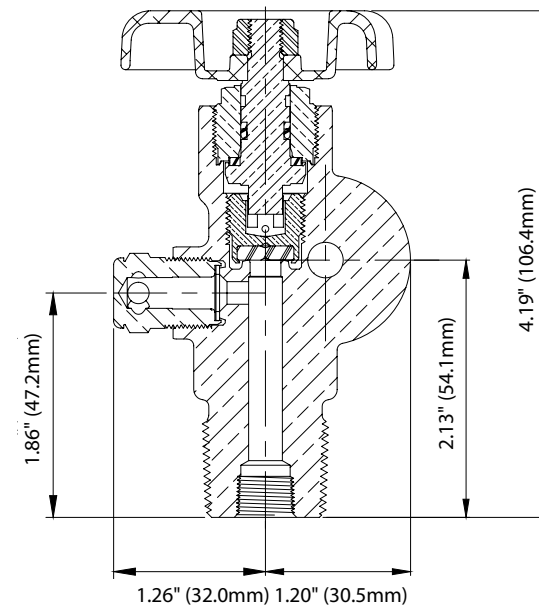
GRPV Series Residual Pressure Valves



Residual pressure valve designed to protect cylinder and contents.

Key Features & Benefits

- Prevents backflow of impurities and foreign substances
- Automated assembly and testing processes ensure exceptional quality
- 100% helium leak tested
- Durable forged brass body, precisely machined internal components and design elements meet the most stringent international valve performance standards
- Innovative design and quality construction offer protection of cylinder contents without the expense of a time-consuming purge-and-clean cycle
- Retains approximately 30 to 50 PSI pressure, maintaining the integrity of the cylinder contents against contaminants, even if the valve is left open
- Protects and extends life of cylinder by preventing ingress of moisture
- Pressure Relief Device (PRD) unitized plug design provides excellent flow characteristics
- Dynamic front piston seal design is not in direct contact with the flow passage during filling
- Inlet and outlet thread configurations are available for a broad spectrum of customer, country and code specifications
- Optical Character Recognition technology utilized to verify appropriate burst disc pressure rating
- Exclusive "webbed washer" design protects burst disc during handling and bulk shipment
- Maximizes optimum fill flow rate and provides high flow for delivery of product with Cv factor of .43



GRPV

Fill Adapters for GRPV Series



Ordering Information

Sherwood Part Number	Outlet
Adapters with Retractable Pin	
TLG580SLW*	CGA 580
TLG590SLW*	CGA 590

Retractable Pin Adapters provide maximum operating flexibility to fill or evacuate a cylinder with either a conventional valve or a GRPV. Engage the Pin Locking Tool (see below) and rotate the tool clockwise to depress the pin for use with a conventional valve. Or rotate the tool counterclockwise to release the pin for use with a GRPV valve. The adapters incorporate an O-ring seal for a hand-tight connection.

*Adapters can be used with TV RPV also.

TLG580, TLG580SLW Rebuild Kit

Sherwood Part Number	Description
TL580A-30-R	Each kit includes 25 Plunger & Pin Assemblies
TL580	Nose Bushing Torque Spanner sold separately



Ordering Information

Sherwood Part Number	Description
TL580B	Pin Locking Tool

Used with Retractable Pin Adapter.

Understanding Fill Adapter Part Numbers

TLG	Tool for Global Valve
L	Retractable Pin
S	Stainless Steel
W	Washer or O-Ring Seal
D	Matching CGA Outlet and Inlet

Ordering Information

Sherwood Part Number	Outlet
Fixed Pin Adapters Spring-Loaded, Adjustable	
TLG320W	CGA 320
TLG346S	CGA 346
TLG350S	CGA 350
TLG540S	CGA 540
TLG680S	CGA 680
TL580D*	CGA 580
TL590D*	CGA 590

Fixed Pin Adapters are for use on manifolds dedicated to filling cylinders with Sherwood GRPV valves.

*Adapters can be used with TV RPV also.



Ordering Information

Sherwood Part Number	Description
TL580C	Checking Rod

Gas cylinders can be checked for content integrity by simply inserting the Checking Rod and pushing against the resistance of the check valve. The sound of escaping gas indicates residual cylinder pressure.

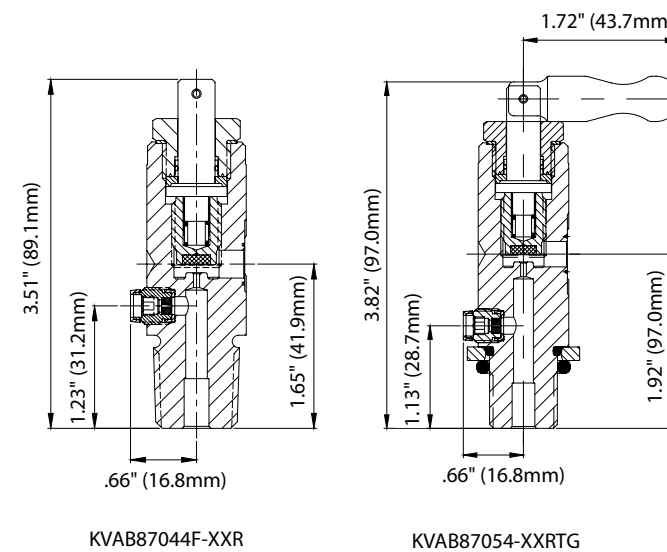
KVAB Series Post Medical Valves



Post-type medical valves for "F" and "D" type cylinders and used for all CGA-860 yokes.

Key Features & Benefits

- Inert PTFE packing provides leak-free stem seal, long cycle life and resistance to corrosion
- Secondary O-ring helps to provide a secure seal under vacuum purging and low-pressure operation
- Strong, durable body is made from extruded brass rod and coated with a protective chrome finish
- Chamber design protects threads and stem from damage
- Exceptional machining finishes for low-torque sealing and long packing life
- Durable lower plug is made of tough naval brass and coated with PTFE for lubricity
- Copper sealing gasket provides permanent, leak-resistant bonnet seal
- Pressure Relief Device is an integrated assembly to ensure proper assembly and to resist tampering
- Designed for use with all yokes made to CGA 860 drawing specifications
- Available in wrench or toggle type
- Nominal stroke is 1.5 turns, full flow at 1/3 turn
- Cleaned for oxygen service and oil free per CGA G-4.1



Design Specifications

	English	Metric
Maximum Working Pressure	3000 PSI	207 Bar
Burst Pressure	12,000 PSI	827 Bar
Operating Temperature Range	-50° F +149° F	-45° C +65° C
Storage Temperature Range	-65° F +155° F	-54° C +68° C
Leak Rate Internal/External	1x10 ³ cc/sec.	1x10 ³ Bar mL/sec.
Cv Flow Factor	Standard: .102	
Minimum Cycle Life	5000 Cycles	
Opening Torque	8-10 in.-lbs	1-1.1 N-m
Closing Torque	8-10 in.-lbs	1-1.1 N-m
Operating Torque	10-30 in.-lbs	1.1-3.4 N-m
Bonnet Torque	25-30 ft.-lbs.	33.9-40.6 N-m
PRD Torque	50-65 in.-lbs.	5.6-7.3 N-m

Standards Conformance

CGA V-9	Standard for Compressed Gas Cylinder Valves
CGA S1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Specifications
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

KVAB Series Post Medical Valves

Ordering Information					
Sherwood Part Number	Gas Service	Safety	CGA Outlet	Pin Indexing Hole Numbers	Inlet Thread Size
KVAB87044F-XX KVAB87054-XX	Oxygen	CG-4	870	Pins #2 and #5	½"-14 NGT .750-16 UNF-2A
KVAB88044F-XX KVAB88054-XX	Oxygen and Carbon Dioxide Mixtures	CG-4	880	Pins #2 and #6	½"-14 NGT .750-16 UNF-2A
KVAB89044F-XX KVAB89054-XX	Oxygen and Helium Mixtures	CG-4	890	Pins #2 and #4	½"-14 NGT .750-16 UNF-2A
KVAB91041-XX KVAB91051-XX	Nitrous Oxide	CG-1	910	Pins #3 and #5	½"-14 NGT .750-16 UNF-2A
KVAB93044F-XX KVAB93054-XX	Helium	CG-4	930	Pins #4 and #6	½"-14 NGT .750-16 UNF-2A
KVAB94041-XX KVAB94051-XX	Carbon Dioxide	CG-1	940	Pins #1 and #6	½"-14 NGT .750-16 UNF-2A
KVAB95044F-XX KVAB95054-XX	Air	CG-4	950	Pins #1 and #5	½"-14 NGT .750-16 UNF-2A
KVAB96044F-XX KVAB96054-XX	Nitrogen	CG-4	960	Pins #1 and #4	½"-14 NGT .750-16 UNF-2A
KVAB96541-XX KVAB96554-XX	Nitrous Oxide and Oxygen Mixtures	CG-1 CG-4	965	Pin #7	½"-14 NGT .750-16 UNF-2A
KVAB97344-XX KVAB97354-XX	Medical Gas Mixtures	CG-4	973	Pins #11 and #24	½"-14 NGT .750-16 UNF-2A

OPTIONS

- All valves are supplied with rupture discs rated for 2015 PSI Working Pressure cylinders. Rupture discs rated for other Working Pressures available on request.
- To order ⅛"-27 NPT modified gauge port, add "G" to end of Part Number (e.g. KVAB87054-32G).
- To order rugged diecast aluminum toggle lever, add "TG" to end of Part Number (e.g. KVAB87054-32 becomes KVAB87054-32TG).
- To order PTFE inlet O-ring, add "R" to end of Part Number (e.g. KVAB87054-32 becomes KVAB87054-32R). THIS OPTION ONLY AVAILABLE ON .750-16 UNF-2A INLET VALVES. XX = PRD Safety

Key Replacement Parts

Pressure Relief Device Sherwood Part Number		-XX	Cylinder Working Pressure	Color-Coded Ring to Designate Pressure (6513 MFX only)	Disc Rupture Range PSI @ 160° F	
CG-1 No Fuse Metal	CG-4 165° F Fuse Metal				Min.	Max.
Pressure Relief Devices*						
9-4000-60-28	6513MFA-28	-28	1800 PSI	Orange	2700	3000
9-4000-60-32	6513MFB-32	-32	2015 PSI	None	3025	3360
9-4000-60-48	6513MFA-48	-48	3000 PSI	Black	4500	5000

* Available in Pressure Relief Device Kits (see below).

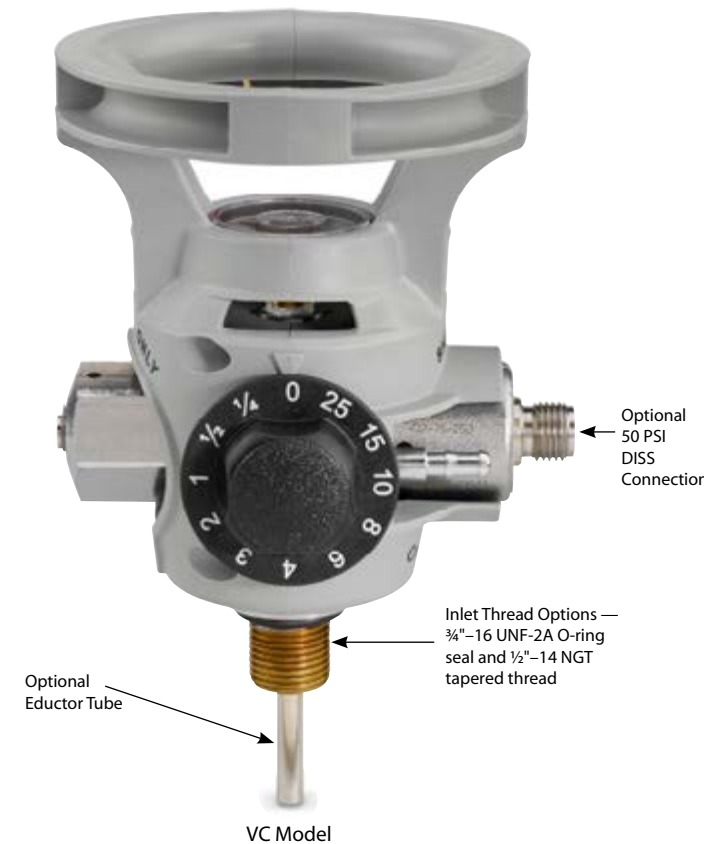
Pressure Relief Device Kits

Sherwood Part Number	Description
6513MFA-28KIT	25 PRD Assemblies
6513MFB-32KIT	25 PRD Assemblies
6513MFA-48KIT	25 PRD Assemblies



TL-KTS-C
Tool for Insertion/Crimping to replace
KVAB toggle 1-KTS-1C and toggle pin J33-093085S

OxyGen I Series Oxygen Valves with Integrated Pressure Regulators



Key Features & Benefits

Compact, Easy-to-Use Design

- Designed for ambulatory service applications, combines on/off with reduced pressure for direct patient care
- A 35% lower profile than comparable models provides more efficient racking and storage capabilities
- 15 to 25% lighter weight than comparable models
- Ergonomically designed shroud with carrying handles improves mobility and reduces user fatigue
- Shroud circumference is sized to fit within the footprint diameter of standard Medical-E cylinders
- Pressure gauge located at the top of the unit is clearly visible and protected by the shroud handle

Reliable, Quality Product

- Tested and meets all known tests for MRI-compatible components used in conjunction with a magnetic resonance imager for Level 3 Tesla requirements
- Flow rate accuracy within ±10% of dial setting
- Regulator adjustment knob with positive flow detents guards against inadvertent flow setting changes
- Inspection windows in the shroud permit convenient leak inspection
- All units are 100% helium leak tested
- Each unit is assigned a unique serial number for positive identification and tracking
- Fill and evacuation rates are equivalent to standard post medical valves and deliver substantial time and money savings on the fill line
- Shroud is made of a durable, high-performance nylon ABS polymer blend and exhibits excellent chemical and UV resistance
- Cleaned for oxygen service and oil free per ASTM G-93

Variety of Configurations

- Available in both Check Valve and Shut-Off Valve configurations
- DISS outlet connections are available in all configurations
- Available in Standard Flow for hospital and pediatric applications, and High Flow for EMS/EMR applications

Design Specifications

	English	Metric
Fill Connection	CGA 540	
Outlet Connection	Barbed Fitting for ¼" I.D. Hose	
PRD Torque	50-65 in.-lbs.	5.6-7.3 N-m
Barbed Fitting Torque	15-20 in.-lbs.	1.7-2.2 N-m
Bonnet Torque	13-15 ft.-lbs.	17.6-20.3 N-m
Orifice Assembly Torque	25-35 in.-lbs.	2.8-4 N-m

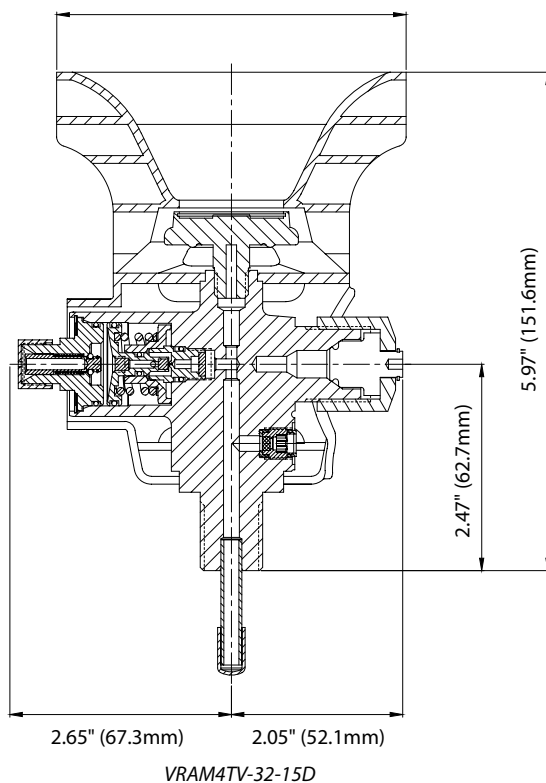
Flow Ranges

Model	Flow Range	Flow Adjustments	Applications
Standard Flow	0-15 LPM	0, ¼, ½, 1, 2, 3, 4, 6, 8, 10, 12, 15 LPM	Hospital/Pediatrics
High Flow	0-25 LPM	0, ¼, ½, 1, 2, 3, 4, 6, 8, 10, 15, 25 LPM	EMS/EMR

OxyGen I Series Oxygen Valves with Integrated Pressure Regulators — Model V (Fill Shut-Off Valves)



V Model



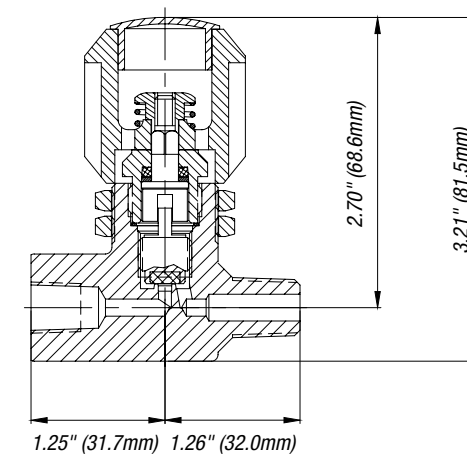
Key Features & Benefits

- Flow control knob also acts as the principal shut-off device
- Single-control operational design is easy to use and therapist friendly
- Standard CGA 540 fill connection

Ordering Information Model V Version

Sherwood Part Number	DISS Connection	Flow Setting	Fill Connection	Inlet Connection
OxyGen I Series Model V Fill Shut-Off Valves Unplated without Tube				
VRM5V-32-75-15	—	0–15 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRM5V-32-75-15D	✓	0–15 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRM5V-32-75-25	—	0–25 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRM5V-32-75-25D	✓	0–25 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
OxyGen I Series Model V Fill Shut-Off Valves Plated with Tube				
VRAM5TV-32-75-15	—	0–15 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRAM5TV-32-75-15D	✓	0–15 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRAM5TV-32-75-25	—	0–25 LPM	CGA 540	³ / ₄ "–16 UNF-2A Aluminum Cylinder
VRAM4TV-32-15	—	0–15 LPM	CGA 540	¹ / ₂ " NGT Steel Cylinder
VRAM4TV-32-15D	✓	0–15 LPM	CGA 540	¹ / ₂ " NGT Steel Cylinder
VRAM4TV-32-25	—	0–25 LPM	CGA 540	¹ / ₂ " NGT Steel Cylinder

YVA Series High-Pressure Line Valves



Designed for Compressed Gas Storage & Cascade Fill Systems meeting the demands of SCUBA & SCBA professionals internationally. The most state-of-the-art and efficient valve in the industry.

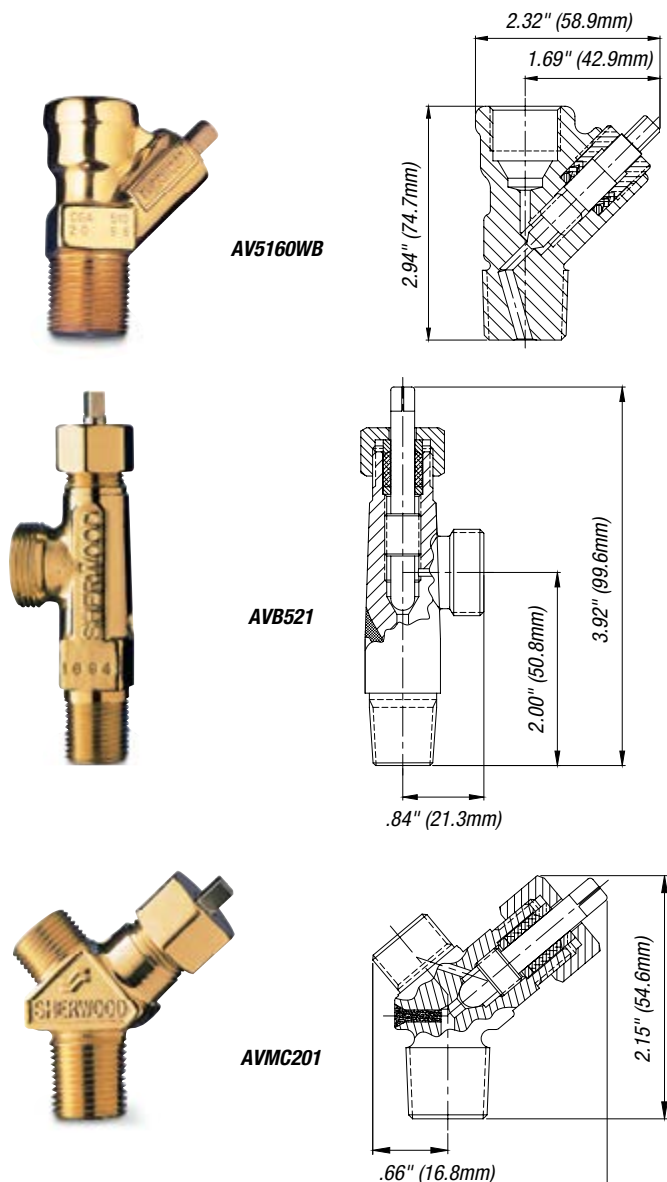
Key Features & Benefits

- Strong, durable forged brass body manufactured by Sherwood to specifications stricter than most commercial forging specifications
- Compact design especially suited for use on compressor or cascade panels
- Chamber specially designed for low-torque operation
- Aluminum Silicon Bronze stem design for dependable service and long life
- Proprietary dual packing chamber design provides dependable seal characteristics, long service life and easy operation
- Durable lower plug made of tough naval brass to resist wear
- Lower plug is PTFE coated to add lubricity, which minimizes seizing and galling especially under high-pressure operation
- Internal protected bonnet gasket seal provides positive, damage-resistant chamber seal
- Compact molded Lexan® polycarbonate handwheel is easy to use
- Safe, dependable and easily rebuilt and maintained

Design Specifications	English	Metric
	Maximum Working Pressure	6000 PSI
Storage Temperature Range	-65° F → +155° F	-54° C → +68° C
Operating Temperature Range	-50° F → +120° F	-45° C → +49° C
Minimum Cycle Life	5000 Cycles	5000 Cycles
Operating Torque	10–15 in.-lbs.	1.1–2.2 N-m
Closing Torque	10–15 in.-lbs.	1.1–2.2 N-m
Bonnet Installation Torque	25–30 ft.-lbs.	2.8–3.4 N-m
Stem Nut Installation Torque	Nut Flush with Top of Stem	

AV Series

Small Cylinder Acetylene Wrench-Operated Valves



Key Features & Benefits

AV5160WB

- Use with 390 cu. ft. capacity (WB style) cylinders
- Enables easy access and operation within the cylinder collar

AVB521

- Use with 40 cu. ft. capacity (B style) cylinders
- Provides rugged durability in construction and field servicing applications
- Enables positive shut-off

AVB521S

- Use in manifold applications
- Clearly labeled "Manifold" with red bonnet nut
- Designed without fuse metal (no internal PRD)

AVB521 SM

- Use in manifold applications in corrosive environments
- Features stainless steel stem
- Clearly labeled "Manifold" with red bonnet nut
- Designed without fuse metal (no internal PRD)

AVMC201

- Use with 10 cu. ft. capacity (MC style) cylinders
- Ideal for brazing and cutting applications
- Enables positive shut-off

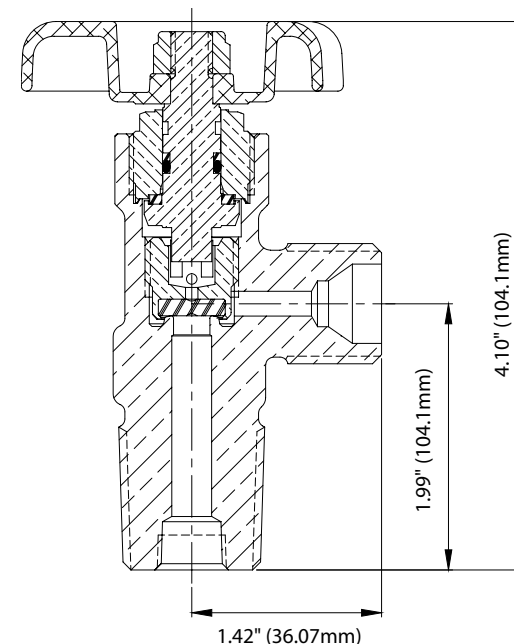
Design Specifications			
		English	Metric
AV Series	Operating Torque	4–6 in.-lbs.	.4–.7 N-m
AVB and AVMC Valves	Closing Torque	6–10 in.-lbs.	.7–1.1 N-m
AVB and AVMC Valves	Bonnet Nut	105–115 in.-lbs.	11.8–13 N-m
AV5160WB Only	Closing Torque	14–16 in.-lbs.	1.6–1.8 N-m
AV5160WB Only	Packing Nut	120–180 in.-lbs.	13.5–20.3 N-m

GV Acetylene Series

Large Cylinder Acetylene Valves



GV51060



GV51060

Key Features & Benefits

- Durable forged brass body, precisely machined internal components and design elements meet the most stringent international valve performance standards
- High-temperature aluminum alloy handwheel with large drainage holes
- 100% helium leak tested
- Designed with low-torque operation for easy hand use
- Durable lower plug made of tough naval brass resists wear
- Precise quality machining results in exceptional finishes for low-torque sealing
- Metal-to-metal seal below bonnet threads prevents pressure accumulation at top of valve body
- High durometer back-up ring prevents extrusion of O-ring in extreme applications
- Peroxide curing of elastomeric seals enhances valve longevity
- Direct drive stem design with optimized single O-ring seal reduces friction and operates at exceptionally low torque levels

Ordering Information			
Sherwood Part Number	CGA Outlet Number	Outlet Thread Size	Inlet Thread Size
GV30040	300	.825"–14 NGO RH Ext. (Commercial)	1/2"–14 NGT
GV30060	300	.825"–14 NGO RH Ext. (Commercial)	3/4"–14 NGT
GV30080	300	.825"–14 NGO RH Ext. (Commercial)	1"–11 1/2 NGT
GV41060	410	.850"–14 NGO LH Ext. (Canadian Std.)	3/4"–14 NGT
GV51040	510	.885"–14 NGO LH Int. (POL)	1/2"–14 NGT
GV51060	510	.885"–14 NGO LH Int. (POL)	3/4"–14 NGT
GV51080	510	.885"–14 NGO LH Int. (POL)	1"–11 1/2 NGT

CBA series

Brass High Pressure Cylinder Valve for Industrial Gases
O-Ring seal type



List Features

- O-Ring technology provides superior leak integrity
- Easy operation under high pressure
- 100% leak test to 1.2 times cylinder service pressure
- All markings are located on the valve neck to protect them from damage
- Large Orifice Ø: provides faster vacuum and filling rates
- Available bursting discs for all DOT cylinders
- Durable forged brass body manufactured by Cavagna Group
- Passes stringent oxygen adiabatic compression test
- Unique seat holder design
- Available configurations include:
 - Inlet threads (NGT, UNF, DIN477, BS, EN, EN ISO)
 - All CGA outlets available
- Available with inlet threaded for DT
- Unitized "plug style" pressure relief device

List Technical data

Pressure	
Maximum Service Pressure	4,000 PSI
Temperature - Storage	-60° F ÷ 149° F
Temperature - Operating	-50° F ÷ 149° F
Life Cycle	2,000 minimum
Torque Values for PBA Acetylene valves	
Max Operating torque @ 0 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 240 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 2900 PSIG inlet pressure	17.7 lbs / inch
Max Overtorque	221 lbs / inch
Flow Capacity CV / Full open	0.47
Orifice Ø:	.160 inch

Material components

Valve Body	Forged Brass EN12165 alloy
Bursting disc	Nickel alloy or Stainless Steel
Bursting disc body	Brass (also available with 212°F fusible metal)
Back up Ring	Nylon or PTFE
Bonnet	Brass
Handwheel	Aluminium
Seat	Polyamide
O-rings	EPDM
Antifriction	Delrin
Stem	Brass according to EN 12164 alloy

Conforms to all requirements of:

CGA V 9	Standard for Gas Cylinder Valves
CGA S-1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Connections
ISO 10297	International Standard
ISO 14246	International Standard



CBA series

Brass High Pressure Cylinder Valve for Industrial Gases
O-Ring seal type

Ordering Information

Part Number	Gas Service	CGA Outlet	Outlet Thread Size	Inlet Thread Size
CBA 8 350 6 xxxx CBA 1 350 6 xxxx CBA 6 350 6 xxxx CBA 3 350 6 xxxx CBA 9 350 6 xxxx CBA 1 695 6 xxxx CBA 1 703 6 xxxx	Hydrogen 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	350 695 703	.825-14 NGO LH Ext. 1.045-14 NGO RH Int. 1.125-14 NGO LH Int.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 580 1 xxxx CBA 1 580 1 xxxx CBA 6 580 1 xxxx CBA 3 580 1 xxxx CBG 9 580 1 xxxx CBA 1 680 1 xxxx CBA 1 677 1 xxxx	Krypton 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	580 680 677	.965-14 NGO RH Int. 1.045-14 NGO RH Int. 1.030-14 NGO LH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 350 6 xxxx CBA 1 350 6 xxxx CBA 6 350 6 xxxx CBA 3 350 6 xxxx CBA 9 350 6 xxxx CBA 1 695 6 xxxx CBA 1 703 6 xxxx	Methane (R50) 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	350 695 703	.825-14 NGO LH Ext. 1.045-14 NGO RH Int. 1.125-14 NGO LH Int.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 350 6 xxxx CBA 1 350 6 xxxx CBA 6 350 6 xxxx CBA 3 350 6 xxxx CBA 9 350 6 xxxx CBA 1 695 6 xxxx CBA 1 703 6 xxxx	Natural Gas 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	350 695 703	.825-14 NGO LH Ext. 1.045-14 NGO RH Int. 1.125-14 NGO LH Int.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 580 1 xxxx CBA 1 580 1 xxxx CBA 6 580 1 xxxx CBA 3 580 1 xxxx CBA 9 580 1 xxxx CBA 1 680 1 xxxx CBA 1 677 1 xxxx	Neon 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	580 680 677	.965-14 NGO RH Int. 1.045-14 NGO RH Int. 1.030-14 NGO LH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 580 1 xxxx CBA 1 580 1 xxxx CBA 6 580 1 xxxx CBA 3 580 1 xxxx CBA 9 580 1 xxxx CBA 1 680 1 xxxx CBA 1 677 1 xxxx	Nitrogen 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	580 680 677	.965-14 NGO RH Int. 1.045-14 NGO RH Int. 1.030-14 NGO LH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 346 1 xxxx CBA 1 346 1 xxxx CBA 6 346 1 xxxx CBA 3 346 1 xxxx CBA 9 346 1 xxxx CBA 1 347 1 xxxx CBA 1 702 1 xxxx	Air (R729) 0 psi to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	346 347 702	.825"- 14 NGO RH Ext. .825-14 NGO RH Ext. 1.125"-14 NGO RH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 580 1 xxxx CBA 1 580 1 xxxx CBA 6 580 1 xxxx CBA 3 580 1 xxxx CBA 9 580 1 xxxx CBA 1 680 1 xxxx CBA 1 677 1 xxxx	Argon 0 to 3,000 psi 3,000 to 5,500 psi 5,500 to 7,500 psi	580 680 677	.965-14 NGO RH Int. 1.045-14 NGO RH Int. 1.030-14 NGO LH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF 3/4"-14 NGT 3/4"-14 NGT
CBA 8 555 1 xxxx CBA 1 555 1 xxxx CBA 6 555 1 xxxx CBA 3 555 1 xxxx CBA 9 555 1 xxxx	Butane/Propane Liquid Withdrawal	555	.903-14 NGO LH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF
CBA 8 320 1 xxxx CBA 1 320 1 xxxx CBA 6 320 1 xxxx CBA 3 320 1 xxxx CBG 9 320 1 xxxx	Carbon Dioxide (R744)	320	.825-14 NGO RH Ext.	1/2"-14 NGT 3/4"-14 NGT 1-11 1/2 NGT .750"-16 UNF 1.125"-12 UNF

PDE series
Post Medical Cylinder Valves Pin Index System
 O-Ring seal type



List Features

- O-Ring technology provides superior leak integrity
- Easy operation under high pressure
- High quality Nickel Chromium plating protects against harmful chemicals
- 100% leak test to full cylinder service pressure
- Body made from extruded brass rod - Fits all CGA specified yokes
- Passes stringent oxygen adiabatic compression test
- Unique stem design meets CGA performance criteria, designed shear point allows stem to break above the spindle nut if over torqued or shocked due to careless handling
- Aluminum cylinder valve supplied with Teflon O-Ring for fast and easy installation
- Oxygen cleaned to meet CGA G4.1 specifications
- Clean room assembly

List Technical data

Pressure	
Maximum Service Pressure	3,336 PSI
Test	4,000 PSI
Temperature range - Storage	-60° F ÷ 149° F
Temperature range - Operating	-50° F ÷ 149° F
Life Cycle	2,000 minimum

Torque Values for PDE series valve

Wrench operated A	
Operating torque @ 0 PSIG inlet pressure	3 lbs/inch
Closing torque @ 3000 PSIG inlet pressure	8 - 12 lbs/inch
Toggle B	
Operating torque @ 0 PSIG inlet pressure	2 lbs/inch
Closing torque @ 2000 PSIG inlet pressure	8 - 10 lbs/inch

Material components

Valve Body	Chromium plated Brass
Bursting disc	Nickel alloy 201
Handwheel	Aluminium
Seat	Polyamide
O-Rings	EPDM
Anti Friction Ring	PEEK
Stem	Chromium plated Brass
Inlet O-ring	PTFE
Back up ring	Nylon
Toggle	Chromium Plated Brass

Conforms to all requirements of:

CGA V 9	Standard for Gas Cylinder Valves
CGA S-1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Connections
ISO 10297	International Standard
ISO 14246	International Standard



PDE series
Post Medical Cylinder Valves Pin Index System
 O-Ring seal type

Ordering Information

Part Number	Gas Service	CGA Outlet	Outlet Thread Size	Inlet Thread Size
PDE 8 950 5 3360 PDE 3 950 5 3360	Air	950	Pins #1 and #5	1/2-14 NGT .750-16 UNF-2A
PDE 8 940 1 3360 PDE 3 940 1 3360	Carbon Dioxide	940	Pins #1 and #6	1/2-14 NGT .750-16 UNF-2A
PDE 8 920 1 3360 PDE 3 920 1 3360	Cyclopropane	920	Pins #3 and #6	1/2-14 NGT .750-16 UNF-2A
PDE 8 900 5 3360 PDE 3 900 5 3360	Ethylene	900	Pins #1 and #3	1/2-14 NGT .750-16 UNF-2A
PDE 8 930 5 3360 PDE 3 930 5 3360	Helium	930	Pins #4 and #6	1/2-14 NGT .750-16 UNF-2A
PDE 8 973 5 3360 PDE 3 973 5 3360	Medical Gas Mixtures	973	Pins #11 and #24	1/2-14 NGT .750-16 UNF-2A
PDE 8 960 5 3360 PDE 3 960 5 3360	Nitrogen	960	Pins #1 and #4	1/2-14 NGT .750-16 UNF-2A
PDE 8 910 1 3360 PDE 3 910 1 3360	Nitrous Oxide	910	Pins #3 and #5	1/2-14 NGT .750-16 UNF-2A
PDE 8 965 5 3360 PDE 3 965 5 3360	Nitrous Oxide & Oxygen Mixtures	965	Pin #7	1/2-14 NGT .750-16 UNF-2A
PDE 8 870 5 3360 PDE 3 870 5 3360	Oxygen	870	Pins #2 and #5	1/2-14 NGT .750-16 UNF-2A
PDE 8 880 5 3360 PDE 3 880 5 3360	Oxygen & Carbon Dioxide Mixtures	880	Pins #2 and #6	1/2-14 NGT .750-16 UNF-2A
PDE 8 890 5 3360 PDE 3 890 5 3360	Oxygen & Helium Mixtures	890	Pins #2 and #4	1/2-14 NGT .750-16 UNF-2A

All valves are supplied with safety relief devices as specified by the Compressed Gas Association Standard S1.1. Safety relief devices are flush style CG-4 devices backed by 165 F fuse metal, except valves specified for Carbon Dioxide (CGA 940), Cyclopropane (CGA 920) and Nitrous Oxide (CGA 940), where a CG-1 hex style pressure relief device without fuse metal is required. All valves are supplied with rupture discs rated for cylinders with a service pressure of 2,015 psig. Rupture discs rated for other cylinder service pressures are available upon request.

Optional Features:

Handwheel - example: PDE 8 890 5 3360 changes to PDU 8 890 5 3360
 Chromium Plated Toggle- example: PDE 8 890 5 3360 changes to PDF 8 890 5 3360
 1/8"-27 NPT gauge port - example: PDE 8 890 5 3360 changes to PDP 8 890 5 3360 (only available with toggle)

CBA series

Commercial and POL Style Acetylene Cylinder Valves

O-Ring seal type



List Features

- O-Ring technology provides superior leak integrity
- Easy operation and long service life
- 100% leak test to 1.2 times service pressure
- All markings are located on the valve neck to protect them from damage
- Large orifice size provides faster vacuum and filling rates
- Durable forged brass body manufactured by Cavagna Group
- Unique seat holder design
- Available configurations include: Inlet threads (NGT, DIN477, BS, EN, EN ISO)

List Technical data

Pressure	
Maximum Service Pressure	500 PSI
Test Pressure	885 PSI
Temperature - Storage	-60° F ÷ 149° F
Temperature - Operating	-50° F ÷ 149° F
Life Cycle	2,000 minimum
Torque Values for PBA Acetylene valves	
Max Operating torque @ 0 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 240 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 2,900 PSIG inlet pressure	17.7 lbs / inch
Max Overtorque	221 lbs / inch
Flow Capacity (CV)	0.47
Orifice Ø:	0.137 inch

Material components

Valve Body	Forged Brass EN12165 alloy
Back up ring	PTFE
Handwheel	Aluminium
Seat	PA 612-Zytel
O-rings	EPDM
Antifriction ring	Delrin
Bonnet	Brass alloy conforming EN12164

Conforms to all requirements of:

CGA V 9	Standard for Gas Cylinder Valves
CGA S-1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Connections
ISO 10297	International Standard
ISO 14246	International Standard

Ordering Information

Part Number	Type	CGA Outlet	Outlet Thread Size	Inlet Thread Size
CBA 8 300 0	Commercial	300	.825"-14 NGO RH Ext.	1/2" NGT
CBA 1 300 0	Commercial	300	.825"-14 NGO RH Ext.	3/4"-14 NGT
CBA 6 300 0	Commercial	300	.825"-14 NGO RH Ext.	1"-11 1/2 NGT
CBA 1 410 0	Canadian Style	410	.850"-14 NGO LH Int.	3/4"-14 NGT
CBA 8 510 0	P.O.L.	510	.885"-14 NGO LH Int.	1/2" NGT
CBA 1 510 0	P.O.L.	510	.885"-14 NGO LH Int.	3/4"-14 NGT
CBA 6 510 0	P.O.L.	510	.885"-14 NGO LH Int.	1"-11 1/2 NGT



CBO series

Vertical Outlet Acetylene Valve with Handwheel

For Collar Style Cylinders



List Features

- Rugged brass forged body manufactured by Cavagna Group
- O-Ring design provides industries best leak tightness and easy operation
- Compact Handwheel provides better access to the valve Handwheel and eliminates interference with cylinder collar
- Inlet screen prevents filler mass or felts from entering the valve
- Easy to read valve markings are roll stamped on the valve neck - not on the wrench flats
- Soft seat design provides positive shut off

List Technical data

Pressure	
Maximum Service Pressure	500 PSI
Test Pressure	885 PSI
Temperature - Storage	-60° F ÷ 149° F
Temperature - Operating	-50° F ÷ 149° F
Life Cycle	2,000 minimum
Torque Values for PBA Acetylene valves	
Max Operating torque @ 0 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 240 PSIG inlet pressure	8.8 lbs / inch
Max Operating torque @ 2,900 PSIG inlet pressure	17.7 lbs / inch
Max Overtorque	221 lbs / inch
Flow Capacity (CV)	n/a
Orifice Ø:	0.137 inch

Material components

Valve Body	Forged Brass EN121645
Handwheel	Aluminium
Bonnet	Brass EN12164
Seat	PA 612 Zytel 158
O-Rings	EPDM
Back up Ring	PTFE
Antifriction ring	Delrin
Filter	Stainless Steel

Conforms to all requirements of:

CGA V 9	Standard for Gas Cylinder Valves
CGA S-1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Connections
ISO 10297	International Standard
ISO 14246	International Standard

Ordering Information

Part Number	Type	CGA Outlet	Outlet Thread Size	Inlet Thread Size
CBO 1 510 0	P.O.L.	510	.885"-14 NGO LH Int.	3/4" NGT
CBO 1 300 0	Commercial	300	.825"-14 NGO RH Ext.	3/4" NGT



CBB/CBC series

Wrench Operated Acetylene Valves



List Features

- Valve body made of rugged forged brass produced by Cavagna Group
- Fusible metal pressure relief device
- Large wrench flats for easy installation
- Teflon packing and anti extrusion rings prevent packing leakage
- Plated steel stem resists damage from wrenches and corrosion

List Technical data

Pressure Proof Test	1,465 PSI min 885 PSI
Temperature - Storage	-60° F ÷ 149° F
Temperature - Operating	-50° F ÷ 149° F
Life Cycle	2,000 minimum

Torque Values for PBB/PBC Acetylene valves:
See Ordering information below.

Material components

Valve Body	Forged Brass EN12165 alloy
Pressure Relief	212° F Integral Fusible Metal
Packing Nut	Brass EN12164
Packing	Teflon (PTFE)
Packing Gland	Brass EN12164 alloy
Packing Washer	Brass EN12165 alloy
Stem	Steel UNI4838
Strainer	AISI 304 100 mesh

Conforms to all requirements of:

CGA V 9	Standard for Gas Cylinder Valves
CGA S-1.1	Standard for Pressure Relief Devices
CGA V-1	Compressed Gas Cylinder Valve Outlet and Inlet Connections



Ordering Information

Part Number	Gas Service	CGA Outlet	Outlet Thread Size	Inlet Thread Size
CBB 5 520 3	Acetylene	520	.895-18 NGO RH Ext.	3/8-18 NGT
CBC 5 200 3	Acetylene	200	.625-20 NGO RH Ext.	3/8-18 NGT

Torque Values

Description	Torque
Operating Torque @ 0 psig Inlet Pressure	6 - 10 in lbs
Closing Torque @ 500 psig Inlet Pressure	6 - 10 in lbs
Packing Nut Installation Torque	80 - 100 in lbs
Stem Installation Torque	45 ± 5 in lbs

Flow Data

CGA Outlet Number	200	520
Orifice Ø: Diameter (inches)	.133	.133
Flow Constant: Cv - Full Open	n/a	n/a
Flow CFM @ 240 PSIG Inlet	n/a	n/a



Single Phase Diaphragm valve for inert Refrigerant Gas

Key Features:

- Brass cylinder valve for refrigerant and cooling applications using halocarbons
- Permanent gas tight seal
- Spring Loaded PRV
- Tube quick connection
- Inlet thread dry sealant

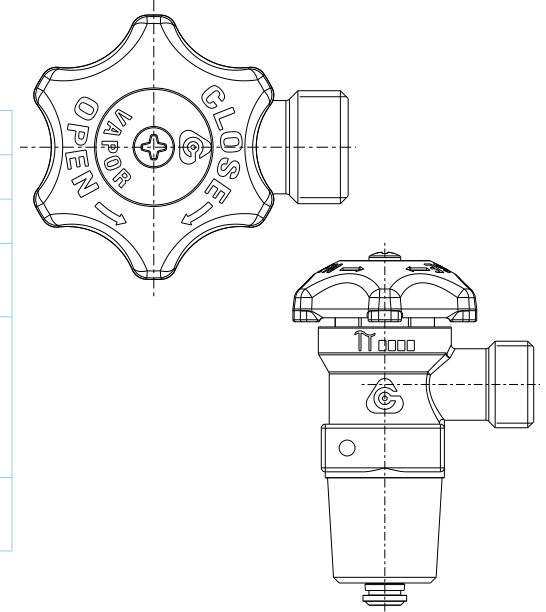
Options:

- Liquid withdrawal tubes quick connection
- Anti-Filling – Rubber or Metal seal:
 - Removable
 - Unremovable
 - Breakable
- Colored plastic handwheel: red, blue
- Plastic inlet/outlet thread protection
- PRV plastic red cap
- Cartridge Spring Loaded PRV



Specifications:

Test pressure	800 psi
Service temperatures	-40°F up to + 149°F
Seat orifice size	5/16"
Helium leak rate at Pmax	internal 4.3 10 ⁻³ atm.cc/s external 4.3 10 ⁻³ atm.cc/s
Material	Body: brass Handwheel: plastic Seat Pad: PA66 Diaphragm : stainless steel Withdrawal tube: PA
Inlet and outlet connections	Conforms to all requirements of : CGA V9 / CGA S - 1.1 / CGA V-1 / ISO 10297



Example product details*:

Valves	Inlet	Outlet	Colored Plastic Handwheel	Quick Tube Connection
7601900454	3/4"-14 NGT	CGA 660	Blue Vapor	Yes
7601900455	3/4"-14 NGT	CGA660	Red Liquid	Yes

Double Port Diaphragm valve for inert Refrigerant Gas



Key Features:

- Brass cylinder valve for refrigerant and cooling applications using halocarbons
- Permanent gas tight seal
- Listed according UL 1769
- Spring Loaded PRV
- Single or Double outlet
- Tube quick connection
- Inlet thread dry sealant

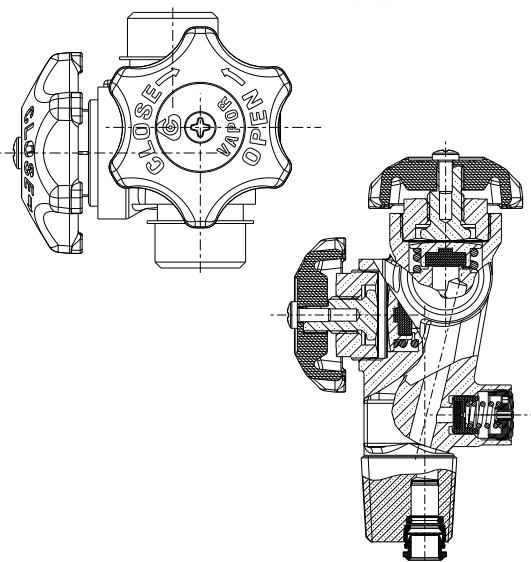
Options:

- Liquid withdrawal tubes quick connection
- Anti-Filling – Rubber or Metal seal:
 - Removable
 - Unremovable
 - Breakable
- Colored plastic handwheel: red, blue
- Plastic inlet/outlet thread protection
- PRV plastic red cap
- Cartridge Spring Loaded PRV



Specifications:

Test pressure	800 psi
Service temperatures	-4°F up to +149°F
Seat orifice size	5/16"
Helium leak rate at Pmax	internal 4.3 10 ⁻³ atm.cc/s external 4.3 10 ⁻³ atm.cc/s
Material	Body: brass Handwheel: plastic Seat Pad: PA66 Diaphragm : stainless steel Withdrawal tube: PA
Inlet and outlet connections	Conforms to all requirements of : CGA V9 / CGA S - 1.1 / CGA V-1 / ISO 10297



Example product details*:

Valves	Inlet	Outlet 1	Outlet 2	Safety Devices	Colored Plastic Handwheel	Quick Tube Connection	Homologation
7601900169	3/4-14 NGT	CGA 660	CGA 660	PRV 600 PSI	Blue Vapor - Red Liquid	Yes	π
7601900240	3/4"-14 NGT	CGA 660	CGA 660	PRV 600 PSI		Yes	
7601900242	3/4"-14 NGT	CGA 660	CGA 660	PRV 600 PSI		Yes	
7601900453	3/4"-14 NGT 7 Oversize	CGA 660	CGA 660	PRV 600 PSI		Yes	

Valve for inert Refrigerant Gas



Key Features:

- Brass cylinder valve for refrigerant and cooling applications using halocarbons
- Permanent gas tight seal
- Listed according UL 1769
- Cartridge Spring Loaded PRV
- Single outlet
- Tube quick connection
- Pneumatic activated Anti-Filling rubber seal

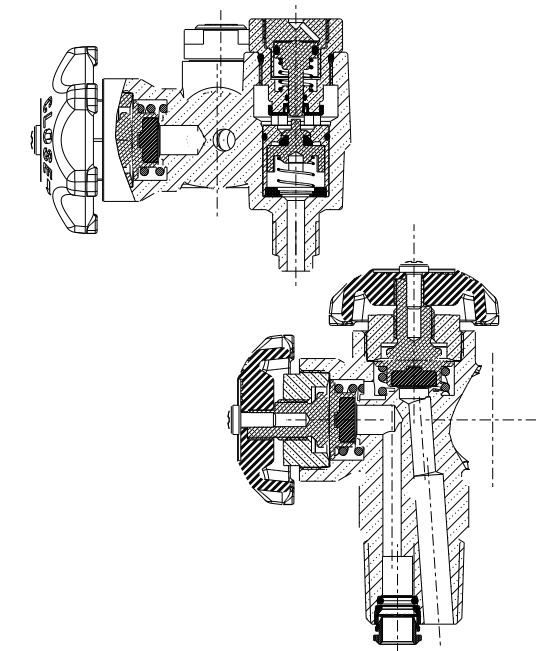
Options:

- Cap nuts
- Liquid withdrawal tubes quick connection
- Colored plastic handwheel: red, blue
- Plastic inlet/outlet thread protection
- PRV plastic red cap
- Inlet thread dry sealant
- Inlet thread PTFE tape
- 7601900469 has CGA 165 outlet and for applications using HFO 1234YF



Specifications:

Test pressure	800 psi
Service temperatures	-40°F up to +149°F
Seat orifice size	5/16"
Helium leak rate at Pmax	internal 4.3 10 ⁻³ atm.cc/s external 4.3 10 ⁻³ atm.cc/s
Material	Body: brass Handwheel: plastic Seat Pad: PA66 Diaphragm : stainless steel Withdrawal tube: PA
Inlet and outlet connections	Conforms to all requirements of : CGA V9 / CGA S - 1.1 / CGA V-1 / ISO 10297
Flow Capacity (CV)	0.54



Example product details*:

Valves	Inlet	Outlet	Safety Devices	Colored Plastic Handwheel	Quick Tube Connection	Homologation
7601900469	¾ - 14 NGT	CGA 165	PRV 600 PSI	Blue Liquid - Red Vapor	Yes	and π
7601900470	¾ - 14 NGT	CGA 166	PRV 600 PSI	Blue Liquid - Red Vapor	Yes	and π
7601900480	¾ - 14 NGT	CGA 167	PRV 600 PSI	Blue Liquid - Red Vapor	Yes	and π



Multi-Service Valve



67.0720
67.0.490.0720

Application

Multi-service valve suitable for ASME tanks where a vapor service valve is required. This valve incorporates in the same body a service valve, a vapor withdrawal valve and a fixed level gauge.

Features

Improved Stem Seal - Two seals - a back seat and an O-ring protect against stem leakage in the service valve portion. When the service valve is fully open, the O-ring is not under pressure, increasing the service life of the O-ring.

Redesigned Body Configuration - Installation of the 67.0720 can be performed with a standard 1" socket wrench using the large center wrenching hex. The extremely low body silhouette (approximately 2-3/4") allows the use of small, economical hoods.

Convenient Level Gauge - Top mounting of the fixed liquid level gauge gives easy access.

Gauge Connection - The 1/4" F.NPT gauge connection can be plugged or left unplugged for installation of a pressure gauge.

Fixed level gauge - Please specify DT length when ordering.

Sealant - Pre-applied on the inlet thread.

Various DT lengths upon request.

Ordering Information							
Part Number	Tank Connection	Vapor Service Connection	Vapor Line Connection	Gauge Boss	Fixed Liquid Level Gauge	Fixed Level Gauge DT Length	Wrench Hex Flat
67.0720	3/4" M NPT	Female POL CGA 510	1-1/4" M.ACME	1/4" F.NPT	Yes	Customizable Upon Request	1"

Filler Valves



PV2080
66.1122
66.0.290.1122



66.1232
66.0.290.1232

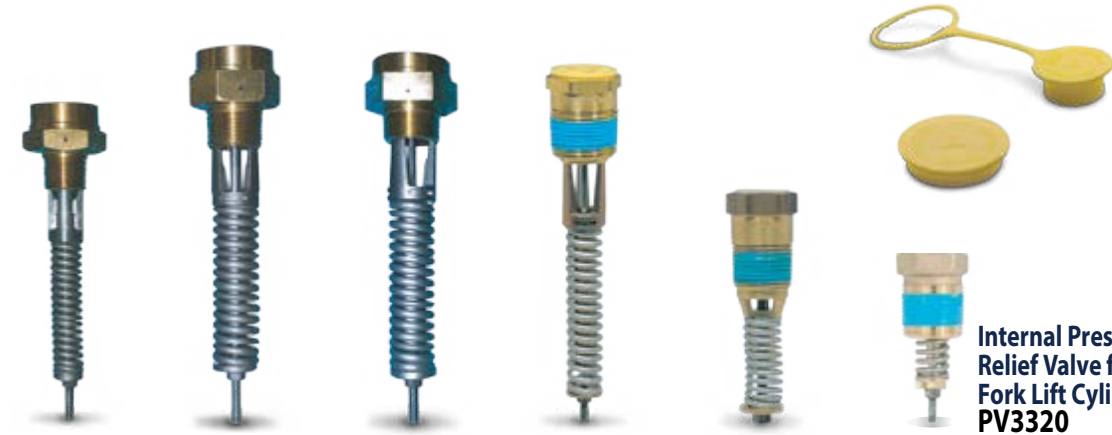


Pre-applied sealant on the inlet thread.

Ordering Information										
Part Number	Container Connection	Line Connection	Wrench Hex Flat	Propane liquid capacity at various differential pressure (GPM)						
				10 PSIG	20 PSIG	25 PSIG	30 PSIG	40 PSIG	50 PSIG	75 PSIG
66.1122	3/4" M NPT	1-3/4" M.ACME	1-3/4"	17	23	-	28	33	37	-
66.1232	1-1/4" M NPT	1-3/4" M.ACME	1-3/4"	58	-	98	-	-	146	186
66.1134 TWO PIECE BODY	1-1/4" M NPT	1-3/4" M.ACME	1-3/4"	54	-	100	-	-	148	190

Internal Pressure Relief Valves for ASME And DOT Containers

Designed specifically for use as a primary pressure relief device on ASME containers up to 2000 gallon water capacity. Furnished with a rain cap for protection against contamination. See ordering information for part numbers. These valves have a pre-applied sealant on the container connection. These valves are ASME approved.



Type	Part number
66.1128	10.0.950.0203
66.1129	10.0.950.0204
66.1130	10.0.950.0205
66.1135	10.0.110.5032
66.0248	30.0.110.0278
66.1242	30.0.110.0277

Rain Caps for Internal Pressure Relief Valves

Internal Pressure Relief Valve for DOT Fork Lift Cylinders PV3320



66.1128 66.0.290.1128 66.1129 66.0.290.1129 66.1130 66.0.290.1130 66.1135 66.0.290.1135 66.1162 66.0.290.1162 66.0248 66.0.290.0248

Ordering Information					
Part Number	Container Connection	Start to Discharge Setting PSIG	UL (at 120% of set pressure) Flow capacity SCFM/AIR	ASME (at 120% of set pressure) Flow capacity SCFM/AIR	Wrench Hex Flat
66.1127	1" NPT	375	1491	n/a	1-5/16"
66.1128	3/4" NPT	250	2007	1807	1-9/16"
66.1129	1" NPT	250	2757	2493	1-3/4"
66.1130	1-1/4" NPT	250	4312	3913	2-1/4"
66.1242	1" NPT	312	1109	979	1-5/16"
66.1135	1" NPT	250	864	786	1-5/16"
66.1162	3/4"-NPT	312	690	690	1-1/16"

External Pressure Relief Devices

66.1139
Pressure relief valve for small containers and on-line pipe installations. Setting point: 250 PSIG.

66.1140
Pressure relief valve for small containers and on-line pipe installations. Setting point: 375 PSIG.

66.1311
Hydrostatic Pressure relief valve provides pressure relief at or in excess of the stated pressure setting, protecting against line or plumbing system failures.

Part Number	Bottom Male Connection	Wrench grip hexagon	Thread type		Configuration suitable for a tank with a max surface area of:	PRV - Start to Discharge Setting (PSIG)	PRV-OVERPRESSURE 20%		Approval	PRV Orifice
			taper	parallel			CAPACITY SCFM-AIR			
66.1139 - PRV	1/4-18 NPT	14/16"	X		-	250	296-262	UL/ASME	7/8"	
66.1140 - PRV	1/4-18 NPT	14/16"	X		-	375	486	UL CGA 51.1	7/8"	
70.0073 - EU19	3/4-14 NPT	1 13/16"	X		73 sq.ft. Aboveground 316 sq.ft. Underground	250	1918-1808	UL/ASME	1-13/16"	
66.1311	1/4-18 NPT	9/16"	X		-	440	-	UL	9/16"	

70.0073 (EU19)
External pressure relief valve ASME containers. Setting point: 250 PSIG.



Service Valves for DOT Fork Lift and ASME Motor Fuel Containers



80.2062
80.0.380.2062

80.2063
80.0.390.2063

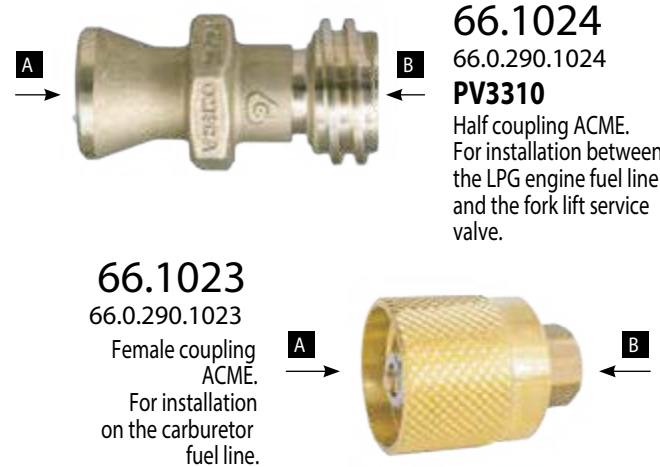
80.2064
80.0.390.2064
PV3300

80.2146
80.0.390.2146



Fork Lift Connectors

These brass connectors are designed to join the carburetor fuel line to the service valve.



66.1024
66.0.290.1024
PV3310

Half coupling ACME. For installation between the LPG engine fuel line and the fork lift service valve.

66.1023
66.0.290.1023

Female coupling ACME. For installation on the carburetor fuel line.

Application

These valves are designed for vapor or liquid withdrawal service on DOT fork lift containers (80-2064) and ASME containers. These valves are equipped with an excess flow limiter with different settings. Because these valves do not have an integrated pressure relief valve, they may only be used as an accessory valve on containers that have an independent PRV suitable for that containers capacity (such as 66.0248, 66.1057 or 66.1058 – see pressure relief valves).

Features

- Double O-ring Stem Seal - Two O-rings form the stem seal for improved resistance to leakage caused by dirt or extreme temperatures.
- Tamperproof Design - A travel stop keeps the handwheel from being removed which helps to prevent tampering. It also prevents removal of the stem and provides an additional seal against gas leakage.
- Sturdy Quality Brass Handwheel - Large, sturdy brass handwheel and stem threads less likely to break, even with rough handling.
- Static Seat Disc - In the 73.0001 Valve the seat disc does not rotate, abrasive wear on the disc is eliminated, improving service life.
- Recessed Excess Flow Valve - The recessed excess flow valve helps reduce the possibility of mechanical damage or fouling from excess pipe compound.

Ordering Information

Part Number	Container Connection	Outlet Connection	Normal Application	Excess Flow Closing
80.2063	3/4" M.NGT	3/8" SAE Flare (70)	ASME Motor Fuel	3.3 GPM
80.2062		3/8" SAE Flare (90)	ASME Motor Fuel	3.3 GPM
80.2146		POL (CGA 510)	ASME Motor Fuel	1.5 GPM
80.2064		3/8" 18 NPT	DOT Fork Lift	2.6 GPM
73.0001	3/4" - 14 NPT	5/8" UNF	RV - Automotive	1.4 GPM

Fixed Liquid Level Gauges



66.1072
66.0.290.1072

Special DT length available. An optional instruction plate may be ordered for use with these valves. These valves incorporate a No. 54 drill size orifice. Captive screw.



66.1161
66.0.290.1161

Remote outgauge. Captive screw.



Ordering Information

Part Number	Container Connection	Outlet Connection	DT Length
66.1072	1/4" M NPT	-	12"
66.1116	1/4" M NPT	-	5.4"
66.1117	1/4" M NPT	-	6.6"
66.1118	1/4" M NPT	-	3.8"
66.1119	1/4" M NPT	-	4.1"
66.1120	1/4" M NPT	-	5.6"
66.1121	1/4" M NPT	-	6.9"
66.1204	1/4" M NPT	-	Without
66.1125	1/4" M NPT	-	5.2"
66.1161	1/4" NPTF	1/4" SAE Flare	Without

Service Valves for ASME and DOT Containers or Fuel Line Application



80.3135
80.0.490.3135

Designed specially for vapor withdrawal service on ASME and DOT containers. Because this valve has no integral pressure relief valve, it may only be used as an accessory valve on containers that have an independent pressure relief valve sufficient for that container's capacity. This valve can also be used as a service valve on a 420 lb vertical tank or a 300 liter horizontal tank. This valve also incorporates a fixed liquid level gauge. Specify DT length when ordering.

Features

- Double O-ring Stem Seal - Two O-rings from the stem seal for improved resistance to leakage due to dirt or temperature extremes.
- Sturdy Quality Brass Handwheel - New large sturdy brass handwheel and stem threads are less likely to break, even with rough handling.
- Repairable design based upon request.
- Static Seat Disc - Because the seat disc does not rotate, abrasive wear on the disc is eliminated, improving service life.

Ordering Information

Part Number	Tank Connection	Vapor Service Connection	Fixed Liquid Level Gauge	Fixed Level Gauge DT Length
80.3135	3/4" NGT	POL CGA 510	Not captive	11.1"
80.3144	3/4" NGT	POL CGA 510	Not captive	5.8"
80.1199	3/4" NGT	POL CGA 510	N/A	N/A
80.3149	3/4" NGT	POL CGA 510	Not captive	11.0"
80.3190	3/4" NGT	POL CGA 510	Not captive	10.0"
80.3191	3/4" NGT	POL CGA 510	Not captive	10.63"



80.1199
80.0.290.1199

Open-close valve with POL outlet. Designed for vapor withdrawal only.

Service Valves for DOT Cylinders



80.5016
80.0.690.5016

PV1001

DOT cylinder valve for vapor withdrawal up to 100 lb LPG capacity. Specify dip-tube length when ordering.



80.6032
80.0.790.6032

Heavy duty POL valve with pressure relief valve for 200 lb propane cylinders. Different DT lengths available.

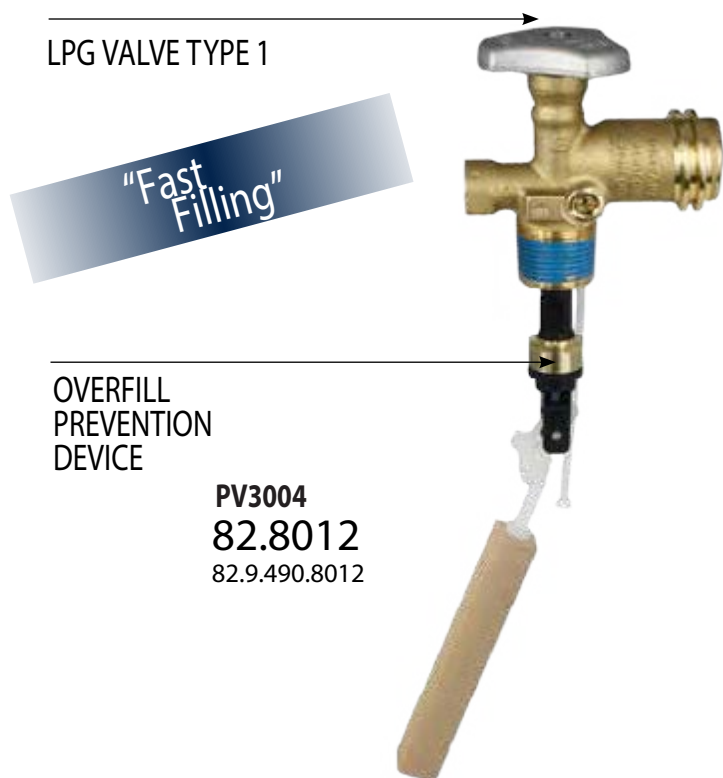


Ordering Information

Part Number	Cylinder Connection	Outlet Connection	Normal Application	Liquid Level Gauge	DT Length	Relief Setting	UL rated discharge flow capacity (SCFM)
80.6032	3/4" NGT	Female POL (CGA 510)	DOT cylinder up to 100 lbs	Yes	10.2"	375	765
80.5016			Service valve on DOT cylinder	Yes	10.6"		366
80.5064			DOT cylinder up to 100 lbs	No	-		366

Type 1 ACME Cylinder Valve with Overfill Prevention Device (OPD)

These Type 1 ACME valves (CGA791) are intended for DOT cylinders up to 40 pounds LPG capacity (96 pounds water capacity). This valve has a vapor service outlet, relief valve, captive fixed liquid level gauge, and an overfill prevention device (OPD).



PV3004
82.8012
82.9.490.8012

Features

- Rapid purging and filling with over one million BTU withdrawal capacity.
- Tri-lobular one-piece forged alluminum handwheel.
- Double "O-ring" stem seal for improved leak resistance.
- Pre-applied sealant.
- Quality "O-ring" check valve seat, opens only with positive seal.
- Brass safety cage surrounding critical welds provides additional protection to components for long-term operational performance.

Ordering Information

Part Number	Cylinder Capacity	Container Connection	Outlet Connection	Relief Setting	Dip Tube
82.8014 / PV2004	20 lbs	3/4" 14 NGT	Type 1 ACME and POL	375 PSIG	4.0"
82.8012 / PV3004	30 lbs	3/4" 14 NGT	Type 1 ACME and POL	375 PSIG	4.7"
82.8013 / PV4004	40 lbs	3/4" 14 NGT	Type 1 ACME and POL	375 PSIG	6.4"



S6000 HP Medium Duty REGULATOR

APPLICATION

- » Our S6000 HP is designed for most medium duty industrial cutting and welding applications.

PRODUCT FEATURES

- » **Body:** Forged Brass.
- » **Gauges:** 2" dual scale UL252 and ISO 5171 approved.
- » **EV Technology:** Encapsulated valve, assembled in clean room, incorporating sintered filter, guarantees maximum performance and long life in service.
- » **Flow Control:** CGA color-coded non detachable knob. Maximum achievable outlet pressure locked in production to guarantee the highest performance and safe working.
- » **Bonnet:** Powder painted corrosion resistant.
- » **Certifications:** CGA E-4 and UL252
- » **Application Field:** Industrial cutting and welding

All regulators are cleaned for oxygen service 100% tested at maximum inlet pressure.

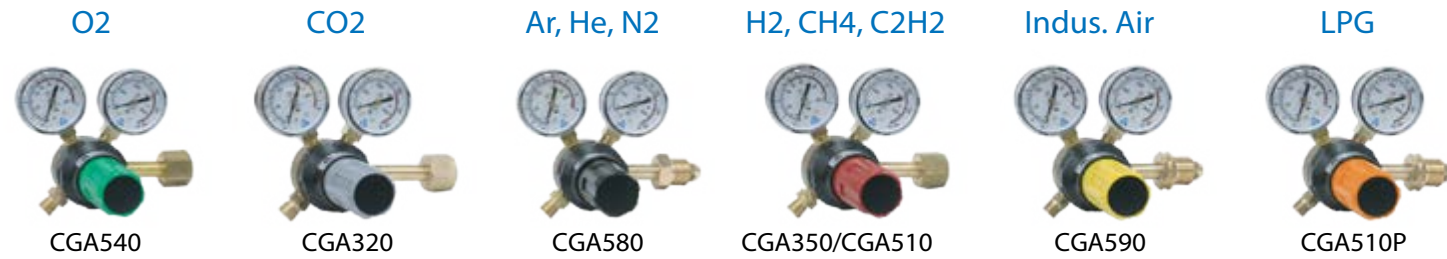
OTHER MATERIAL

- » **EV sintered filter:** CuNi
- » **EV Seat:** PTFE TFM 1700
- » **EV Spring:** Monel® 500



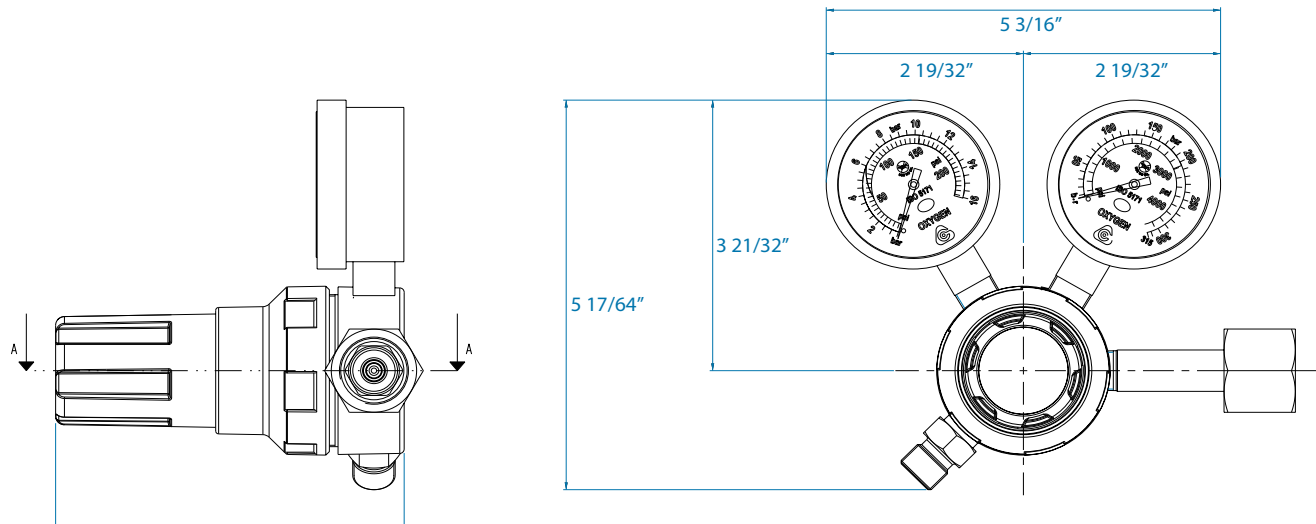
Label and catalog model no.	Service Gas*	Max inlet PSIG	Delivery pressure range PSIG	Inlet connection	Outlet connection	Hand wheel color
60H1900011	ACETYLENE	500	0-15	CGA300	9/16" - 18LH	red
60H3900010	CO2	3000	0-150	CGA320	6/8" - 18 (RH)	grey
60H4900001	H2, Methane	3000	0-50	CGA350	9/16" - 18LH	red
60H1900007	ACETYLENE	500	0-15	CGA510	9/16" - 18LH	red
600050510P	LPG	500	0-50	CGA510P	9/16" - 18LH	orange
600015510P	LPG	500	0-15	CGA510P	9/16" - 18LH	orange
60H0900007	O2	3000	0-50	CGA540	9/16" - 18LH	green
60H0900002	O2	3000	0-150	CGA540	9/16" - 18RH	green
60H3900011	Ar, He, N2	3000	0-150	CGA580	9/16" - 18RH	black
6000200580	Ar, He, N2	3000	0-200	CGA580	9/16" - 18RH	black
60H6900001	Indus. Air	3000	0-150	CGA590	1/4" - MNPT	yellow

*Our regulators are only intended for exclusive use with the indicated service gas.



ADDITIONAL TECHNICAL INFORMATION

» Regulator weight: 2.6 lbs



Cryogenic Gas Relief Valves, Non-ASME 9400 Series

Application

9400 series relief valves are specifically designed for vapor line safety relief applications and cryogenic liquid containers.

Features

- Cleaned and packaged for oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors
- Repeatable performance
- 100% factory tested
- Temperature Range (Teflon Seat) -320° to +165° F (-196°C to +74°C)
(Fluorosilicone Seat) -60° to +165° F (-51°C to +74°C)
- Rated for gas service only
- In liquid service be sure to use with a candy cane riser (Sold Separately)
- Setpoint tolerance ± 3%

Materials SS Style

Body	Stainless Steel
Spring	Stainless Steel
Seat Retainer	Stainless Steel
Pipe-Away Adapter	Stainless Steel

Materials PRV and B-Style

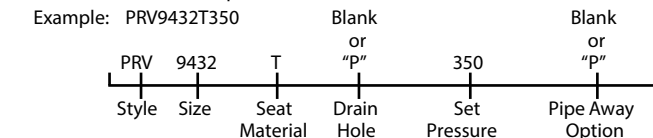
Body	Brass
Spring	Stainless Steel
Seat Retainer	Brass
Pipe-Away Adapter	Brass

Flow Performance

- For set pressures 90 - 600 psig capacity is 0.783 SCFM of air per psig of flow pressure. For set pressures 15 - 89 psig capacity is 0.750 SCFM of air per psig of flow pressure.
- B-9425N flow of 6.7 SCFM Air/psig at 120% of set pressure.
- B-9426N flow of 11.0 SCFM Air/psig at 120% of set pressure

Ordering Information

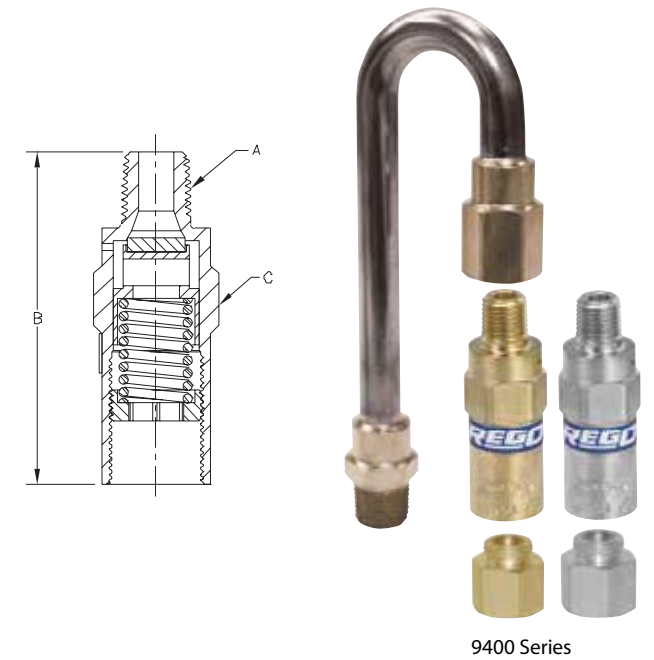
Fill in the blanks with options below.



This example part number indicates a 1/4" M.NPT PRV style brass relief valve with PTFE seat, set at 350 psig with drain hole and no pipe away adapter.

Ordering Information

Style	Size	Body and Valves Material	Pressure Setting Range psig (barg)	Inlet MNPT A Inches (mm)	Height B Inches (mm)	Wrenching Hex C Inches (mm)	Kd value	Orifice Size In2 (mm2)	Pipe-Away Adapter P/N	Pipe-Away Outlet FNPT Inches (mm)
PRV	9432	Brass	10-600 (0.68-41.36)	1/4" (6.35)	2.6" (66.04)	3/8" (22.35)	0.686	.062 (40)	B-9412-2	3/8" (9.65)
SS		Stainless Steel		SS9412-4					1/2" (6.35)	
PRV	9433	Brass		3/8" (9.65)	2.8" (71.12)				B-9412-2	3/8" (9.65)
SS		Stainless Steel		SS9412-4					1/2" (6.35)	
PRV	9434	Brass		1/2" (12.70)	2.8" (71.12)				B-9412-4	1/2" (6.35)
SS		Stainless Steel		SS9412-4					1/2" (6.35)	
B-	9425	Brass	20-300 (1.37-20.68)	3/4" (19.05)	3.4" (86.36)	3.4" (86.36)	0.894	.42 (271)	B-3131-10	1" (25.4)
	9426		60-300 (4.13-20.68)	1" (25.4)	5.3" (134.62)	5.3" (134.62)	0.986	.62 (400)	B-3132-10	1 1/4" (31.75)



Seat Material Option

F for Fluorosilicone for PRV and SS styles for 16-139 psig (1.10 - 9.58 barg)
T for PTFE for PRV and SS styles for 140-600 psig (9.65 - 41.36 barg)
N for B-9425 and B-9426, Fluorosilicone seat, all set pressures.

Drain Hole Option

Relief valves without pipeaway typically provided with drain holes, leave blank. P - for relief valves without drain hole, for example PRV9432TP350
Drain hole can not be used with pipeaway.

Pipe Away Option

P Pipeaway included and attached, No drain hole in relief valve.
For example PRV9432TP350 P
Leave blank for relief valve without pipe-away attached.
For example PRV9432TP350.

Set Pressure

Specify set pressure within range specified for style and size. The B-9425 & B-9426N are available in select settings only. Special order.

For easy identification, the following standard settings have color coded labels for all PRV and SS Style sizes and settings marked in psig and barg:

WARNING : Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

Cryogenic Gas Relief Valves, ASME PRV19430 & PRV29430 Series

Application

The 19430 and 29430 relief valves are designed for oxygen and other industrial gases and for cryogenic service in the vapor space. Apply on piping systems, liquid cylinders or mini-bulk cryogenic containers where an ASME relief valve is required.

Features

- A.S.M.E. rated, National Board Certified
- Bubble tight at 95% of set pressure
- Full flow at 110% at set pressure
- Repeatable performance
- 100% factory tested
- Temperatures Range (Teflon Seat) -320° to +165° F (-196°C to +74°C)
(Fluorosilicone Seat) -60° to +165° F (-51°C to +74°C)
- Cleaned and packaged for oxygen service per CGA G-4.1
- Rated for gas service only
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- In liquid service be sure to use with a candy cane riser (Sold Separately)

Materials SS Style

Body	Stainless Steel
Spring	Stainless Steel
Seat Retainer	Stainless Steel
Pipe-Away Adapter	Stainless Steel

Materials BRV and B-Style

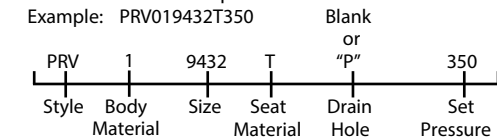
Body	Brass
Spring	Stainless Steel
Seat Retainer	Brass
Pipe-Away Adapter	Brass

Flow Performance

For set pressures 90 - 600 capacity is 0.692 SCFM of air per psig of flow pressure. For set pressures 15 - 89 capacity is 0.750 SCFM of air per PSIA of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 psig (0.2 barg), whichever is greater.

Ordering Information

Fill in the blanks with options below.



Body Material Option

- 1 ASME approved valve made of brass
- 2 ASME approved valve made of stainless steel

Seat Material Option

- F for Fluorosilicone for 15 to 139 psig (6.2 - 9.5 barg) set points.
- T for PTFE for 140-600 psig (9.6 - 41.4 barg) set points.

Drain Hole Option

Leave blank for relief with drain hole. Insert P if no drain hole.

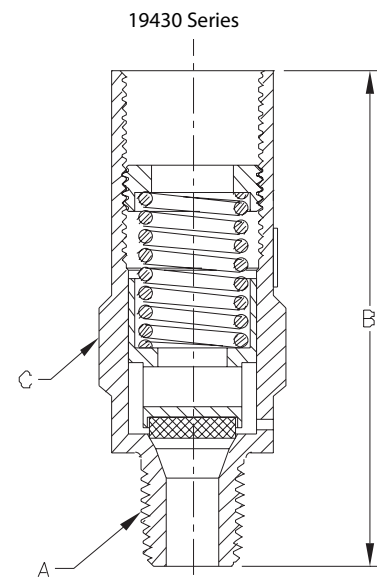
Set Pressure

Enter number for set pressure in psig (6.2 - 41.4 barg) from 15 to 600.

Ordering Information

Part Number	Body and Valves Material	Pressure Setting Range psig (barg)	Inlet MNPT A Inches (mm)	Height B Inches (mm)	Wrenching Hex C Inches (mm)	Kd value	Orifice Size In2 (mm2)
PRV19432	Brass	15-600 (1.03-41.36)	¼" (6.35)	2.6" (66.04)	⅞" (22.35)	0.686	.062 (40)
PRV29432	Stainless Steel		¾" (9.65)				
PRV19433	Brass		½" (12.70)	2.8" (71.12)			
PRV29433	Stainless Steel						
PRV19434	Brass						
PRV29434	Stainless Steel						

Pipe-away adapter options available (sold separately)
Drain hole can not be used with pipe-away



The use of a candy cane riser is recommended for liquid phase installation of these PRVs.

Setpoint tolerance is ± 3% of the set pressure or ± 2 psig whichever is greater.

WARNING : Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

Extended Bonnet Cryogenic Globe Valves BK and BKA Series Valves

Application

The BK and BKA Series valves are designed exclusively for the handling of cryogenic liquids on bulk storage tanks, transports, and pipelines. These globe valves provide positive shutoff and offer a long, low-maintenance service life. The valves are available with a variety of inlet and outlet connections and stem lengths. Certain BK valves are offered with brazed-in schedule 5 and schedule 10 Stainless Steel Pipe Stubs.

Features

- PCTFE seat disc and swivel seat design offer positive shutoff, minimal seat wear, and a long service life
- Unique spring-loaded upper packing provides extended service life without constant packing adjustment
- One piece slip-on seat assembly for easy replacement
- Each valve is cleaned and packaged for oxygen service per CGA G-4.1
- Maximum working pressure is 600 psig (41.37 barg) MAWP (-196°C)
- Working temperature range is -320°F to +165°F (196°C to +79°C)
- 100% Factory Tested

Materials

Body	ASTM B61
Upper Bonnet	ASTM B16
Lower Bonnet	Brass ASTM B16 for up to 1" Valve Size
.....	BRASS ASTM B283 For Larger Sizes
Seat Disc	PCTFE
Seat Retainer Assembly	Brass ASTM B16
Stem and Bonnet Extension Tube	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM AB13
Jam Ring and Pressure Seal Rings	PTFE
Handwheel	Aluminum for up to 1" valve size, Coated Malleable Iron for larger size

Bonnet Design

Union Bonnet for ½", ¾", 1" valve sizes and on both the 1" model BKA8408S and 1½" model BKA8412S angle valves. Bolted Bonnet design is used on the BK9416 (2") models.



BK8408T



BK9412S



BK9408AA



BKA8412S

High Pressure Gas Master Valves HP9560 Series

Application

The HP9560 Series high pressure brass valves are used on cylinder filling panels, tube trailers, and high pressure manifolds and piping systems. The HP9560 Series exhibits a very low operating torque under pressure for ease of manual operation.

Features

- 5600 psig (386 barg) maximum working pressure
- Non-rising stem design with O-Ring Seal for durable service
- Large brass handwheel for easy low torque operation under pressure
- All valves cleaned for use in oxygen per CGA G-4.1
- Temperature range -40°F to +165°F (-40°C to +74°C)
- 100% Factory Tested

Materials

Body, bonnet, stem, and seat retainer, stem seal retaining rings and washer Brass
Stem O-ring Viton
Thrust bearing PCTFE

Soft Seat Option

The soft seat valves use a PCTFE seat disc in the seat retainer to create a "bubble-tight" seal against a machined seat surface on the brass body. Valve Cv is 2.6. The soft seat option is especially useful for small molecule gases like hydrogen and helium, but can be used for a variety of non-corrosive industrial gases including argon, nitrogen, carbon dioxide, nitrous oxide, and acetylene.

Metal Seat Option:

A copper seat disc is used in the seat retainer to create a seal against a Monel body seat, which is installed into the body and can be replaced. Valve Cv is 2.3. The metal seat option minimizes the possibility of seat decomposition or ignition in oxygen service under adiabatic compression. The metal seat option is recommended for oxygen, and can also be used for other non-corrosive industrial gases. The metal seat option is not to be used for acetylene due to the copper seat. Not to be applied in hydrogen or helium service or where a "bubble-tight" seal is essential. (Note: C in part number)

Nylon seat option: available also (ex. HP9560NB).

Bonnet Versions

- Standard Bonnet for low profile.
- Panel Mount Bonnet for ease of panel installation. Includes threaded bonnet and nickel plated brass mounting nut. Metal Seat Option 1.625" diameter panel hole required for mounting. (Note: P in part number)

Ordering Information

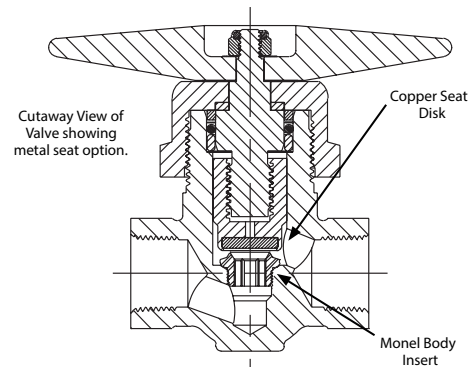
Part Number	Size Inches	Size DN	"Check Valve And Bleed Valve Material"	Dimensions						Cv (Kd)		
				A Inches	A mm	B Inches	B mm	C Inches	C mm	Right Side	Left Side	Both Sides
CSB2D	1	25	Brass	10.3	260	10.6	269	7.5	190.5	14.0 (12.1)	14.0 (12.1)	25.2 (21.8)
CSB4D	1 1/2	40						15	381	21.0 (18.2)	21.0 (18.2)	34.5 (29.8)
CSM2D	1	25	Stainless Steel					7.5	190.5	14.0 (12.1)	14.0 (12.1)	25.2 (21.8)
CSM4D	1 1/2	40						15	381	21.0 (18.2)	21.0 (18.2)	34.5 (29.8)



STANDARD BONNET VALVE



PANEL MOUNT VALVE



CGA-870 Oxygen		CGA-940 CO2/Oxygen Mixture w/ CO2 Over 7%	
Inlet	Part No.	Inlet	Part No.
Yoke w/HT grip x CGA 540 male	MFY-870-1H	Yoke w/HT grip x 1/4" NPT male	MFY-940-4H
Yoke w/T-handle x CGA 540 male	MFY-870-1	Yoke w/T-handle x 1/4" NPT male	MFY-940-4
Yoke w/HT grip x 1/4" NPT male	MFY-870-4H	Yoke w/HT grip x 1/2" NPT male	MFY-940-8H
Yoke w/T-handle x 1/4" NPT male	MFY-870-4	Yoke w/T-handle x 1/2" NPT male	MFY-940-8
Yoke w/HT grip x 1/2" NPT male	MFY-870-8H		
Yoke w/T-handle x 1/2" NPT male	MFY-870-8		
Yoke w/S.S. HT grip x 1/4" NPT male	MFY-870-4H-M		
Yoke w/S.S. HT grip x 1/2" NPT male	MFY-870-8H-M		

CGA-880 CO2/Oxygen Mixture w/ CO2 Not Over 7%		CGA-950 Medical Air	
Inlet	Part No.	Inlet	Part No.
Yoke w/HT grip x 1/4" NPT male	MFY-880-4H	Yoke w/HT grip x 1/4" NPT male	MFY-950-4H
Yoke w/T-handle x 1/4" NPT male	MFY-880-4	Yoke w/T-handle x 1/4" NPT male	MFY-950-4
Yoke w/HT grip x 1/2" NPT male	MFY-880-8H	Yoke w/HT grip x 1/2" NPT male	MFY-950-8H
Yoke w/T-handle x 1/2" NPT male	MFY-880-8	Yoke w/T-handle x 1/2" NPT male	MFY-950-8

CGA-890 Helium/Oxygen Mixture w/ He Not Over 80%		CGA-960 Nitrogen	
Inlet	Part No.	Inlet	Part No.
Yoke w/HT grip x 1/4" NPT male	MFY-890-4H	Yoke w/HT grip x 1/4" NPT male	MFY-960-4H
Yoke w/T-handle x 1/4" NPT male	MFY-890-4	Yoke w/T-handle x 1/4" NPT male	MFY-960-4
Yoke w/HT grip x 1/2" NPT male	MFY-890-8H	Yoke w/HT grip x 1/2" NPT male	MFY-960-8H
Yoke w/T-handle x 1/2" NPT male	MFY-890-8	Yoke w/T-handle x 1/2" NPT male	MFY-960-8

CGA-910 Nitrous Oxide		CGA-973 Medical Gas Mixtures	
Inlet	Part No.	Inlet	Part No.
Yoke w/HT grip x 1/4" NPT male	MFY-910-4H	Yoke w/HT grip x 1/4" NPT male	MFY-973-4H
Yoke w/T-handle x 1/4" NPT male	MFY-910-4	Yoke w/T-handle x 1/4" NPT male	MFY-973-4
Yoke w/HT grip x 1/2" NPT male	MFY-910-8H	Yoke w/HT grip x 1/2" NPT male	MFY-973-8H
Yoke w/T-handle x 1/2" NPT male	MFY-910-8	Yoke w/T-handle x 1/2" NPT male	MFY-973-8

CGA-930 Helium/Oxygen Mixture w/ He Over 80%		Replacement Parts for all Yokes	
Inlet	Part No.		Part No.
Yoke w/HT grip x 1/4" NPT male	MFY-930-4H	T-handle	MYP-001
Yoke w/T-handle x 1/4" NPT male	MFY-930-4	Handtight handle	MYP-002
Yoke w/HT grip x 1/2" NPT male	MFY-930-8H	Inlet bushing 1/4" NPT male	MYP-004
Yoke w/T-handle x 1/2" NPT male	MFY-930-8	Inlet bushing 1/2" NPT male	MYP-008
		ETFE washer	MYP-010
		Nylon washer	MYP-011
		FKM washer	MYP-012
		Sintered inlet filter	MYP-015
		Stainless steel pin	MYP-020
		Bushing CGA 540 outlet male w/filter	MYP-540
		S.S. Replacement Hand tight handle	MYP-002Z

New WEH® Yoke Quick Connector for medical oxygen

The new light brass WEH® Yoke Quick Connector is designed to meet the CGA 870 standard and is available with 1/4" NTP male media connection. The patented WEH® Quick Connector type TW42 for Pin-Index systems has been developed especially for fast filling of medical oxygen. Weighing only 700g (24.7 oz), the brass and stainless steel construction of type TW42 offers maximum safety and durability.

Engineered to satisfy the most stringent requirements of the gas industry, type TW42 is easy to operate. Just place the yoke connector over the cylinder valve, align it with the index pins and move the lever to engage the connector. The pressure-tight connection is made. No hand-tightening or repetitive twisting. A pressure-assisted piston prevents disconnection under pressure.

Safe operating time and increase your productivity using this unique Pin-Index Connector. Type TW42 is rated for 3,600 psi and BAM and TÜV certified. The connectors are cleaned for oxygen and free of oil and grease. TW42 is also available for cylinder valves with RPV. US Patent No. 5,582,223.

WEH® has been developing technically advanced quick connectors since 1983. About 100,000 connectors are used by major gas companies world-wide and attest to quality and experience. Today WEH® offers a complete range of quick connectors for filling gas cylinders with a large variety of valve configurations. All connectors are subjected to extensive pressure and durability tests and manufactured according to ISO 9001.



WEH® Quick Connector TW42

CGA	Description	Part # "C"	
CGA540 Bail TW57	540 IND CONNECTOR, Gas Flow path in Monel Steel with several bail size options	C1-134003	Bail #1 small
		C1-134003-4	Bail #4 small
CGA540 Sleeve TW152	540 Sleeve Type Stainless steel with 90 deg female 1/4" or male 1/4"		
	540 SLEEVE type MONEL w/90 Deg female 1/4"	C1-146922	
	540 SLEEVE type MONEL male 1/4"	C1-146372	
CGA580 Bail TW54	580 RPV CONNECTOR with several bail size options	C1-117540	Bail #2
		C1-117540-4	Bail #4 large
	580 (no RPV) CONNECTOR with several bail size options	C1-117539	Bail #1 small
		C1-117539-4	Bail #4 large
CGA580 Sleeve TW151	580 Sleeve type axial 1/4" NPT male	C1-143268	
	580 RPV Sleeve type axial 1/4" NPT male	C1-123992	
CGA870 TW42	TW42 Brass Pin Index 1/4" NPT Male	C1-117833	
	with 1/2" NPT male fitting	C1-117833-8	

CGA-320 Carbon Dioxide

3,000 PSI

Hex Nuts	Part	Description	Material	Part No.
	Nut	.830"-14NGO-RH-INT	Brass	N-61
	Nut	.830"-14NGO-RH-INT	SS	N-61SS
	Nut	.830"-14NGO-RH-INT	CP Brass	MN-061
Handtight Nuts	Nut-HT	.830"-14NGO-RH-INT	Brass	HTN-61
	Nut-HT	.830"-14NGO-RH-INT	Brass, Plastic Grip	HTN-61P
	Nut-HT	.830"-14NGO-RH-INT	CP Brass, Plastic Grip	MHN-061P
Nipple-Threaded Inlets	Nipple*	1/4" NPT, 2" Long	Brass	NP-147
	Nipple*	1/4" NPT, 2" Long	Brass	NP-147SS
	Nipple*	1/4" NPT, 2" Long	CP Brass	MNP-147
	Nipple*	1/4" NPT, 2.5" Long	Brass	NP-150
	Nipple*	1/4" NPT, 2.5" Long	SS	NP-150SS
	Nipple*	1/4" NPT, 2.5" Long	CP Brass	MNP-150
	Nipple*	1/4" NPT, 3" Long	Brass	NP-151
	Nipple*	1/4"-NPT, 3" Long	CP Brass	MNP-151
	Nipple*	1/4" NPT, 3.5" Long	SS	NP-154SS
	Nipple*	1/2" 27UNS, 2.5" Long	Brass	NP-152
Nipple-Handtight	Nipple-HT**	1/4" NPT, 2.5" Long	Brass	NP-150T3
	Nipple-HT**	For 1/4" Tube	Brass	NP-147T3C2
	Nipple-HT**	For 5/16" Tube	Brass	NP-147T3C3
Nipple-Countersunk	Nipple-CS*	For 1/4" Tube	Brass	NP-147C2
	Nipple-CS*	For 5/16" Tube	Brass	NP-147C3
	Nipple-CS*	For 1/4" Tube	SS	NP-147C2SS
Nipple-Check Valve	Nipple-CV*	1/4"NPT, 2.5" Long	Brass	NP-150CV
	Nipple-CV*	1/4"NPT, 2.5" Long	CP Brass	MNP-150CV
	Nipple-CV*	1/4"NPT, 2.5" Long	SS	NP-150SSCV
Nipples for use with Residual Pressure Valves	Nipple-RPV*	1/4"NPT, 3" long	Brass	NP-151-PIN-SS
	Nipple-RPV-washer*	1/4"NPT, 3.5" long with Retractable Pin & Washer	Brass	NP-154W-RPV
Replacement Items	Washer	For Nipple	Fiber	W-6
	Washer	For Nipple	PTFE	W-8
	Washer	For HT-Nipples	PTFE	W-10
	Washer	For Nipple	Nylon	MYP-011
	Pin	For RPV Nipple	SS	PIN-NP-SS

*Includes Washer

**Replace washer with W-10 only

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters

CGA-326 Nitrous Oxide





3,000 PSI

	Part	Description	Material	Part No.
Hex Nuts 	Nut	.830"-14NGO-RH-INT	Brass	N-82
	Nut	.830"-14NGO-RH-INT	SS	N-82SS
	Nut	.830"-14NGO-RH-INT	CP Brass	MN-082
Handtight Nuts 	Nut-HT	.830"-14NGO-RH-INT	Brass	HTN-82
	Nut-HT	.830"-14NGO-RH-INT	Brass, Plastic Grip	HTN-82P
	Nut-HT	.830"-14NGO-RH-INT	CP Brass, Plastic Grip	MHN-082P
Nipple-Threaded Inlets 	Nipple	1/4" NPT, 2.125" Long	Brass	NP-732
	Nipple	1/4" NPT, 2.5" Long	Brass	NP-733
	Nipple	1/4" NPT, 2.5" Long	SS	NP-733SS
	Nipple	1/4" NPT, 2.5" Long	CP Brass	MNP-733
	Nipple	1/4" NPT, 3" Long	Brass	NP-734
Nipple-Handtight 	Nipple-HT	1/4" NPT, 2.5" Long	Brass, PCTFE	NP-733T1
	Nipple-HT-CS	For 1/4" Tube	Brass, PCTFE	NP-732T1C3
Nipple-Countersunk 	Nipple-CS	For 1/4" Tube	SS	NP-732C2SS
	Nipple-CS	For 5/16" Tube	Brass	NP-732C3
	Nipple-CS	For 3/8" Tube	Brass	NP-732C4
Nipple-Check Valve 	Nipple-CV	1/4" NPT, 2.5" Long	Brass	NP-733CV
	Nipple-CV	1/4" NPT, 2.5" Long	SS	NP-733SSCV
	Nipple-CV	1/4" NPT, 2.5" Long	CP Brass	MNP-733CV
Nipples for use with Residual Pressure Valves 	Nipple-RPV-O-Ring	1/4" NPT, 3.5" Long with Retractable Pin & O-Ring	Brass, EPDM	NP-735W-RPV
Replacement Items 	Soft Tip	For HT-Nipple	PCTFE	T733-1
	O-ring	For NP-735W-RPV	EPDM	OR-326

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters








CGA-346 Air Continued

3,000 PSI

	Part	Description	Material	Part No.
Nipple-Handtight 	Nipple-HT	1/4" NPT, 2.5" Long	Brass, PCTFE	NP-753T1
	Nipple-HT-CS	For 1/4" Tube	Brass, PCTFE	NP-753T1C2
	Nipple-HT-CS	For 5/16" Tube	Brass, PCTFE	NP-753T1C3
Nipple-Countersunk 	Nipple-CS	For 1/4" Tube	Brass	NP-752C2
	Nipple-CS	For 1/4" Tube	SS	NP-752C2SS
	Nipple-CS	For 5/16" Tube	Brass	NP-752C3
	Nipple-CS	For 3/8" Tube	Brass	NP-752C4
Nipple-Check Valve 	Nipple-CV	1/4" NPT, 2.5" Long	Brass	NP-753CV
	Nipple-CV	1/4" NPT, 2.5" Long	SS	NP-753SSCV
	Nipple-CV	1/4" NPT, 2.5" Long	CP Brass	MNP-753CV
Replacement Items 	Soft Tip	For HT-Nipple	PCTFE	T753-1
	O-Ring	For Quicknut Nipple	Polyurethane	OR-346

CGA-347 Air

3,001 - 4,700 PSI

	Part	Description	Material	Part No.
Hex Nuts 	Nut	.830"-14NGO-RH-INT	Brass	N-85
	Nut	.830"-14NGO-RH-INT	SS	N-85SS
	Nut	.830"-14NGO-RH-INT	CP Brass	MN-085
Handtight Nuts 	Nut-HT	.830"-14NGO-RH-INT	Brass	HTN-85
	Nut-HT	.830"-14NGO-RH-INT	Brass, Plastic Grip	HTN-85P
	Nut-HT	.830"-14NGO-RH-INT	SS, Alum. Grip	HTN-85SS
Nipple-Threaded Inlets 	Nipple	1/4" NPT, 3" Long	Brass	NP-765
	Nipple	1/4" NPT, 3" Long	SS	NP-765SS
	Nipple	1/4" NPT, 3" Long	CP Brass	MNP-765
Nipple-Handtight 	Nipple-HT	1/4" NPT, 3" Long w/ O-Ring	SS, Polyurethane	NP-765SSW
	Nipple-HT	1/4" NPT, 3" Long w/ O-Ring	Brass, Polyurethane	NP-765W
Nipple-Countersunk 	Nipple-CS	For 1/4" Tube	Brass	NP-765C2
	Nipple-CS	For 1/4" Tube	SS	NP-765C2SS
Nipple-Check Valve 	Nipple-CV	1/4" NPT, 3" Long	SS	NP-765SSCV
Replacement Items 	O-Ring	For HT- Nipple	Polyurethane	OR-347

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters

CGA-350 Hydrogen/Methane/Natural Gas

3,000 PSI

Hex Nuts	Part	Description	Material	Part No.
	Nut	.830"-14NGO-LH-INT	Brass	N-64
	Nut	.830"-14NGO-LH-INT	SS	N-64SS
	Nut	.830"-14NGO-LH-INT	CP Brass	MN-064
Handtight Nuts				
	Nut-HT	.830"-14NGO-LH-INT	Brass	HTN-64
	Nut-HT	.830"-14NGO-LH-INT	Brass, Plastic Grip	HTN-64P
Nipple-Threaded Inlets				
	Nipple	1/4" NPT, 2.125" Long	Brass	NP-167
	Nipple	1/4" NPT, 2.5" Long	Brass	NP-168
	Nipple	1/4" NPT, 2.5" Long	SS	NP-168SS
	Nipple	1/4" NPT, 2.5" Long	CP Brass	MNP-168
	Nipple	1/4" NPT, 3" Long	Brass	NP-169
	Nipple	1/4" NPT, 3" Long	CP Brass	MNP-169
	Nipple	1/4" NPT, 3.5" Long	Brass	NP-170
	Nipple	1/4" NPT, 3.5" Long	SS	NP-170SS
	Nipple	1/4" NPT, 3.5" Long	CP Brass	MNP-170
Nipple-Handtight				
	Nipple-HT	1/4" NPT, 2.5" Long	Brass, PTFE	NP-168T3
	Nipple-HT-CS	For 1/4" Tube	Brass, PTFE	NP-168T3C2
	Nipple-HT-CS	For 5/16" Tube	Brass, PTFE	NP-168T3C3
Nipple-Countersunk				
	Nipple-CS	For 1/4" Tube	Brass	NP-168C2
	Nipple-CS	For 1/4" Tube	SS	NP-168C2SS
	Nipple-CS	For 5/16" Tube	Brass	NP-168C3
	Nipple-CS	For 3/8" Tube	Brass	NP-168C4
Nipple-Check Valve				
	Nipple-CV	1/4" NPT, 2.5" Long	Brass	NP-168CV
	Nipple-CV	1/4" NPT, 2.5" Long	SS	NP-168SSCV
	Nipple-CV	1/4" NPT, 2.5" Long	CP Brass	MNP-168CV
Nipples for use with Residual Pressure Valves				
	Nipple-RPV	1/4" NPT, 2.5" Long	Brass, SS Pin	NP-168-PIN-SS
	Nipple-RPV	1/4" NPT, 2.5" Long	Brass, Monel Pin	NP-168-PIN-M
	Nipple-RPV	1/4" NPT, 3.5" Long	Brass, Retractable SS Pin	NP-170-RPV
Replacement Items				
	Soft Tip	For HT-Nipple	PTFE	T168-3
	Pin	SS Pin for NP-168-PIN-SS	SS	PIN-NP-SS
	Pin	Monel Pin for NP-168-PIN-M	Monel	PIN-NP-M

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters

CGA-540 Oxygen

3,000 PSI

Hex Nuts	Part	Description	Material	Part No.
	Nut	.908"-14NGO-RH-INT.	Brass	N-71
	Nut	.908"-14NGO-RH-INT.	SS	N-71SS
	Nut	.908"-14NGO-RH-INT	CP Brass	MN-071
Handtight Nuts				
	Nut-HT	.908"-14NGO-RH-INT	Brass	HTN-71
	Nut-HT	.908"-14NGO-RH-INT	Brass, Plastic Grip	HTN-71P
	Nut-HT	.908"-14NGO-RH-INT	CP Brass, Plastic Grip	MHN-071P
Nipples - Threaded Inlets				
	Nipple	1/4" NPT, 2.06" Long	Brass	NP-210
	Nipple	1/4" NPT, 2.06" Long	CP Brass	MNP-210
	Nipple	1/4" NPT, 2.5" Long	Brass	NP-211
	Nipple	1/4" NPT, 2.5" Long	CP Brass	MNP-211
	Nipple	1/4" NPT, 2.5" Long	SS	NP-211SS
	Nipple	1/4" NPT, 3" Long	Brass	NP-212
	Nipple	1/4" NPT, 3" Long	CP Brass	MNP-212
	Nipple	1/4" NPT, 3.5" Long	Brass	NP-213
Nipples - Handtight				
	Nipple-HT	1/4" NPT, 2.5" Long w/ O-Ring	Brass/Viton	NP-211W
	Nipple-HT	1/4" NPT, 2.5" Long w/ O-Ring	CP Brass/Viton	MNP-211W
	Nipple-HT	1/4" NPT, 2.5" Long	Brass/PCTFE	NP-211T1
	Nipple-HT	For 1/4" Tube	Brass/PCTFE	NP-210T1C2
	Nipple-HT	For 5/16" Tube	Brass /PCTFE	NP-210T1C3
Nipples - Countersunk				
	Nipple-CS	For 1/4" Tube	Brass	NP-210C2
	Nipple-CS	For 1/4" Tube	SS	NP-210C2SS
	Nipple-CS	For 5/16" Tube	Brass	NP-210C3
	Nipple-CS	For 3/8" Tube	Brass	NP-210C4
Nipple - Check Valve				
	Nipple-CV	1/4"NPT, 2.125" Long	Brass	NP-210CV
	Nipple-CV	1/4"NPT, 2.125" Long	CP Brass	MNP-210CV
	Nipple-CV	1/4"NPT, 2.5" Long	SS	NP-211SSCV
Nipples - Residual Pressure Valve				
	Nipple-RPV	1/4" NPT, 2.5" Long	Brass (Monel Pin)	NP-211-PIN-M
	Nipple-RPV	1/4" NPT, 2.5" Long	Brass (SS Pin)	NP-211-PIN-SS
	Nipple-RPV	1/4" NPT, 2.5" Long w/ O-Ring	Brass (Monel Pin)	NP-211W-PIN-M
	Nipple-RPV	1/4" NPT, 3.5" Long w/ O-Ring	Brass (Retractable SS Pin)	NP-213W-RPV
Replacement Items				
	Soft Tip	For HT-Nipple	PCTFE	T211-1
	O-Ring	For O-Ring Nipple	Viton	OR-011V7
	Pin	For RPV Nipple	SS	PIN-NP-SS
	Pin	For RPV Nipple	Monel	PIN-NP-M

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters

CGA-580 Argon, Helium, Nitrogen

3,000 PSI

Hex Nuts	Part	Description	Material	Part No.
	Nut	.960"-14NGO-RH-EXT	Brass	N-73
	Nut	.960"-14NGO-RH-EXT	SS	N-73SS
	Nut	.960"-14NGO-RH-EXT	CP Brass	MN-073
Handtight Nuts 	Nut, HT	.960"-14NGO-RH-EXT	Brass	HTN-73
	Nut, HT	.960"-14NGO-RH-EXT	CP Brass, Plastic Grip	MHN-073P
	Nut, HT	.960"-14NGO-RH-EXT	Brass, Plastic Grip	HTN-73P
Nipple-Threaded Inlets 	Nipple	1/4" NPT, 2.5" Long	Brass	NP-188
	Nipple	1/4" NPT, 2.5" Long	SS	NP-188SS
	Nipple	1/4" NPT, 2.5" Long	CP Brass	MNP-188
	Nipple	1/4" NPT, 3" Long	Brass	NP-189
	Nipple	1/4" NPT, 3" Long	SS	NP-189SS
	Nipple	1/4" NPT, 3" Long	CP Brass	MNP-189
	Nipple	1/4" NPT, 3.5" Long	Brass	NP-190
	Nipple	1/4" NPT, 3.5" Long	SS	NP-190SS
	Nipple	1/4" NPT, 3.5" Long	CP Brass	MNP-190
	Nipple	1/4" NPT, 4.5" Long	Brass	NP-191
	Nipple-Handtight 	Nipple-HT	1/4" NPT, 3" Long	Brass, PTFE
Nipple-HT		1/4" NPT, 3.5" Long	Brass, PTFE	NP-190T3
Nipple-HT		1/4" NPT, 3.5" Long, w/ o' ring	Brass, Nitrile	NP-190W
Nipple-HT-CS		For 1/4" Tube	Brass, PTFE	NP-188T3C2
Nipple-HT-CS		For 5/16" Tube	Brass, PTFE	NP-188T3C3
Nipple-Countersunk 	Nipple-CS	For 1/4" Tube	Brass	NP-188C2
	Nipple-CS	For 1/4" Tube	SS	NP-188C2SS
	Nipple-CS	For 5/16" Tube	Brass	NP-188C3
	Nipple-CS	For 5/16" Tube	SS	NP-188C3SS
	Nipple-CS	For 3/8" Tube	Brass	NP-188C4
Nipple-Check Valve 	Nipple-CV	1/4" NPT, 2.5" Long	Brass	NP-188CV
	Nipple-CV	1/4" NPT, 2.5" Long	SS	NP-188SSCV
	Nipple-CV	1/4" NPT, 2.5" Long	CP Brass	MNP-188CV
	Nipple-CV	1/4" NPT, 3" Long	Brass	NP-189CV
	Nipple-CV	1/4" NPT, 3" Long	SS	NP-189SSCV
Nipples - Residual Pressure Valve 	Nipple-RPV	1/4" NPT, 3.5" Long	Brass, SS PIN	NP-190-PIN-SS
	Nipple-RPV	1/4" NPT, 3.5" Long	Brass, Monel PIN	NP-190-PIN-M
	Nipple-RPV-O-Ring	1/4" NPT, 3.5" Long	Brass, Retractable Pin	NP-190W-RPV
Replacement Parts 	Soft Tip	For Soft Tip-Nipple	PTFE	T189-3
	O-Ring	For O-Ring-Nipple	Nitrile	OR-580
	Pin	For RPV Nipple	SS	PIN-NP-SS
	Pin	For RPV Nipple	Monel	PIN-NP-M

Add "RF" to end of nipple part numbers listed under the CGA numbers for Installed Filters

CGA 440 Oxygen Cryogenic Transfer Hose	CGA 295 Nitrogen Cryogenic Transfer Hose
(B)=Brass Ends (S)=Stainless Steel Ends - Insert type of material. 500 PSI	(B)=Brass Ends (S)=Stainless Steel Ends 500 PSI
	
STAINLESS STEEL CHS-440-440-72	STAINLESS STEEL CHS-295-295-72
CGA 440 female both ends 48" long CH()-440-440-48	CGA 295 female both ends 48" long CH()-295-295-48
CGA 440 female both ends 60" long CH()-440-440-60	CGA 295 female both ends 60" long CH()-295-295-60
CGA 440 female both ends 72" long CH()-440-440-72	CGA 295 female both ends 72" long CH()-295-295-72
CGA 440 female both ends 120" long CH()-440-440-120	CGA 295 female both ends 120" long CH()-295-295-120
CGA 440 female both ends 144" long CH()-440-440-144	CGA 295 female both ends 144" long CH()-295-295-144
*Other lengths available. Call for part number.	Example - CHS-295-295-72 = CGA Stainless Steel ends 72" long
Quick Connect Handwheel 500 PSI	Quick Connect Tee Handle 500 PSI
	
STAINLESS STEEL	STAINLESS STEEL
Oxygen CGA 440 Handwheel HTC-440	Oxygen CGA 440 Tee Handle CHTE-440
Nitrogen/Inert CGA 295 Handwheel HTC-295	Nitrogen/Inert CGA 295 Tee Handle CHTE-295
Cryogenic Phase Separator 500 PSI	Fill Elbow 500 PSI
	
STAINLESS STEEL	STAINLESS STEEL
3/8" female NPT CPS-001	Oxygen CGA 440 CEL-440
	Nitrogen/Inert CGA 295 CEL-295

min. length=6"
max length=600"

flexible hose types

PTFE/STAINLESS BRAIDED HOSE 3000 PSI WORKING PRESSURE

EXAMPLE	PTF	-	580H	-	580	-	24
	Hose Type		Inlet		Outlet		Length

Superior PTF Series PTFE Lined Stainless Braided Pigtails are designed for 3000 PSI working pressure for a broad range of applications. Comes standard with stainless steel ferrules for longer service life. Available with Armor Guard or spring guard.

- Specifications:
- 1/4" Nominal I.D.
 - Braid is Type 304 stainless steel
 - Temperature rating -65° F to 450° F
 - Burst pressure is 12,000 PSI at room temperature
 - Minimum bend radius of 3 inches for maximum safety & life
- Not recommended for lighter than air gases based on effusion



EXAMPLE:
PTF-580H-580-24

ETFE/STAINLESS BRAIDED HOSE 3000 PSI WORKING PRESSURE

EXAMPLE	PTFT	-	34I	-	34I	-	24
	Hose Type		Inlet		Outlet		Length

For use in Helium and Hydrogen gas service to reduce effusion of lighter than air gases. ETFE Hose is also good for high purity applications where off gassing of hydrocarbons and low diffusion rate is a concern. Please note ETFE has a lower diffusion rate than PTFE, although it does not provide zero effusion. For zero effusion, use rigid copper, brass or stainless steel. Available with Armor Guard or spring guard.

- Specifications:
- 1/4" Nominal I.D.
 - Braid is Type 304 stainless steel, lining is ETFE
 - Temperature rating -65° F to 450° F
 - Burst pressure is 12,000 PSI at room temperature
 - Minimum bend radius of 3 inches for maximum safety & life



EXAMPLE:
PTFT-34I-34I-24

NYLON SYNTHETIC BRAIDED HOSE 3000 PSI WORKING PRESSURE

EXAMPLE	PTFN	-	N 34I	-	N34I	-	24
	Hose Type		Inlet		Outlet		Length

For use in Helium and Hydrogen gas service to reduce effusion of lighter than air gases. Please note synthetic nylon tube has a lower diffusion rate than PTFE, although it does not provide zero effusion. For zero effusion, use rigid copper, brass or stainless steel. Available with Armor Guard or spring guard.

- Specifications:
- 1/4" Nominal I.D.
 - Braid is synthetic fiber, lining is extruded nylon, polyurethane cover
 - Temperature rating -40° F to 212° F
 - Burst pressure is 12,000 PSI at room temperature
 - Minimum bend radius of 3 inches for maximum safety & life
- Not for oxygen service



EXAMPLE:
PTFN-N34I-N34I-24

PTFE/STAINLESS DOUBLE BRAIDED HOSE 6000 PSI WORKING PRESSURE

EXAMPLE	PTF6	-	680	-	641SS	-	24
	Hose Type		Inlet		Outlet		Length

For newer high pressure CGA's. PTFE lined, stainless braided hose for 6000 PSI working pressure. (NOT available with Armor Guard.)

- Specifications:
- 1/4" Nominal I.D.
 - Braid is Type 304 stainless steel
 - Temperature rating -65° F to 450° F
 - Burst pressure is 24,000 PSI at room temperature
 - Minimum bend radius of 3 inches for maximum safety & life



EXAMPLE:
PTF6-680-641SS-24

POST SINTERED, DOUBLE BRAIDED, PTFE HOSE 3600 PSI WORKING PRESSURE

EXAMPLE	PTF36	-	34I	-	34I	-	24
	Hose Type		Inlet		Outlet		Length

For newer high pressure CGA's. PTFE lined, stainless braided hose is available with or without Armor Guard for 3,600 PSI working pressure.

- Specifications:
- 1/4" Nominal I.D.
 - Braid is Type 304 stainless steel
 - Temperature rating -65° F to 450° F
 - Burst pressure is 14,400 PSI at room temperature
 - Minimum bend radius of 3 inches for maximum safety & life



EXAMPLE:
PTF36-34I-34I-24

ALUMINUM MEDICAL CYLINDERS



For home oxygen therapy, emergency medical services (EMS), pre-hospital care and hospitals, nursing homes and other medical institutions.

Features:

- Small and intermediate model contain thread size .750-16 UNF-2B
- Large models (M33, M60, M90 and M122) contain 1.125-12 UNF-2B
- Includes standard medical valve
- Lightweight, high strength 6061-T6 alloy helps increase patient mobility
- Corrosion-resistant interior and exterior
- Wide color range available, including fully brushed and polished
- Custom TMI labeling available

Manufactured to DOT and TC requirements

- U.S. Department of Transportation (DOT) 3AL
- Transport Canada (TC) 3ALM
- Every cylinder inspected and tested by DOT- and TC-authorized independent agency
- Cycle-tested in excess of 10,000 cycles at test pressure
- Minimum burst pressure tested to 2.5 times service pressure without failure

Specifications

Standard:

MODEL	M2	ML2	M4	ML4	M6	ML6	M7	MC	MC12	MD	ME	M22	M33	M42	M60	M90	M122
SERVICE PRESSURE (psi)	2216	2216	2216	2015	2216	2015	2015	2015	2015	2015	2015	2216	2216	2216	2216	2216	2216
OUTER DIAMETER (in)	2.53	3.19	3.19	4.38	3.19	4.38	4.38	4.38	4.38	4.38	4.38	5.25	6.89	5.25	7.25	7.25	8.00
FINISHED LENGTH (in)	5.9	5.3	8.4	5.8	11.8	7.6	9.2	10.8	14.0	16.2	25.6	16.5	15.0	28.9	22.9	32.6	36.5
CYLINDER WEIGHT (lbs)	0.7	1.1	1.6	2.3	2.3	2.8	3.2	3.6	4.9	5.1	7.5	8.3	13.4	13.6	21.9	29.8	40.7
INTERNAL VOLUME (in ³)	17.7	21.5	40	43	61	68	86	101	141	169	281	235	353	449	642	963	1307
O ₂ CAPACITY (cu. ft)	1.7	2.0	3.7	3.6	5.7	5.8	7.3	8.6	12.0	14.3	23.9	22.0	33.0	42.0	60.0	90.0	122.0

Metric:

MODEL	M2	ML2	M4	ML4	M6	ML6	M7	MC	MC12	MD	ME	M22	M33	M42	M60	M90	M122
SERVICE PRESSURE (bar)	153	153	153	139	153	139	139	139	139	139	139	153	153	153	153	153	153
OUTER DIAMETER (mm)	64.3	80.9	80.9	111.1	80.9	111.1	111.1	111.1	111.1	111.1	111.1	133.4	175.0	133.4	184.2	184.2	203.2
FINISHED LENGTH (mm)	149	135	213	147	298	193	233	273	357	411	650	418	381	733	582	827	927
CYLINDER WEIGHT (kg)	0.3	0.5	0.7	1.1	1.0	1.3	1.4	1.6	2.2	2.3	3.4	3.8	6.1	6.2	9.9	13.5	18.5
INTERNAL VOLUME (L)	0.3	0.4	0.7	0.7	1.0	1.1	1.4	1.7	2.3	2.8	4.6	3.9	5.8	7.4	10.5	15.8	21.4
O ₂ CAPACITY (L)	47	57	106	102	161	164	206	244	340	406	676	623	935	1189	1699	2549	3455

ALUMINUM CARBON DIOXIDE CYLINDERS

Clean, corrosion-resistant, lightweight cylinders are ideal for dispensing carbonated soft drinks, beers, lagers and other beverages.



Features:

- Lightweight, high strength 6061-T6 aluminum alloy improves cylinder system portability while reducing the rigors of material handling.
- Corrosion-resistant interior and exterior
- Brushed exterior provides a durable, low-maintenance finish for years of dependable service.
- Optional carrying handle offers superior valve protection.

Manufactured to DOT and TC requirements

- U.S. Department of Transportation (DOT) 3AL
- Transport Canada (TC) 3ALM
- Every cylinder inspected and tested by DOT- and TC-authorized independent agency
- Minimum burst pressure tested to 2.5 times service pressure without failure

Specifications

PART NO.	SERVICE PRESSURE		CO ₂ CAPACITY MAX. CAP		N ₂ CAPACITY		OUTSIDE DIAMETER		OVERALL LENGTH		EMPTY WEIGHT		MIN. WATER WEIGHT		THREAD SIZE
	PSI	BAR	LBS	KG	CU.FT	LITERS	IN	MM	IN	MM	LBS	KGS	LBS	KG	
2 lb	1800	124	2.0	.90	5.8	164	4.18	111.2	8.95	227.30	2.87	1.30	2.96	1.34	.750-16 UNF-2B
2.5 lb	1800	124	2.5	1.13	7.2	204	4.18	111.2	10.43	264.80	3.24	1.47	3.68	1.67	.750-16 UNF-2B
5 lb	1800	124	5.0	2.30	14.5	411	5.25	133.4	14.20	360.68	5.95	2.70	7.40	3.36	1.125-12 UNF-2B
10 lb	1800	124	10.0	4.50	28.9	818	6.89	175.0	16.43	417.32	12.60	5.72	14.73	6.68	1.125-12 UNF-2B
15 lb	1800	124	15.0	6.80	43.3	1226	6.89	175.0	22.76	578.10	16.30	7.39	22.09	10.02	1.125-12 UNF-2B
20 lb	1800	124	20.0	9.07	58.0	1642	8.00	202.20	23.00	584.20	22.60	10.25	29.44	13.35	1.125-12 UNF-2B

Cylinders' CO2 and mixed-gas cylinders for beverage service.

SEE ALL OF OUR GREAT PRODUCTS ONLINE AT : COPPERTUBINGSALES.COM

Register for an Account

- Review your past orders.
- Check out with a PO.
- Ship using your own account number if desired.
- Order on "The Go" using your phone, tablet, or laptop.
- Ship to your job site.
- Fast & Convenient.



Huge Selection of Products.

We stock many hard to find sizes of copper tubing, copper and brass fittings.

Friendly Customer Service

Our dedicated staff wants to help you get what you need.

Fast Shipping

Most orders ship within 24 hours, with many shipping same-day.

coppertubingsales.com





Copper Tube - Plumbing



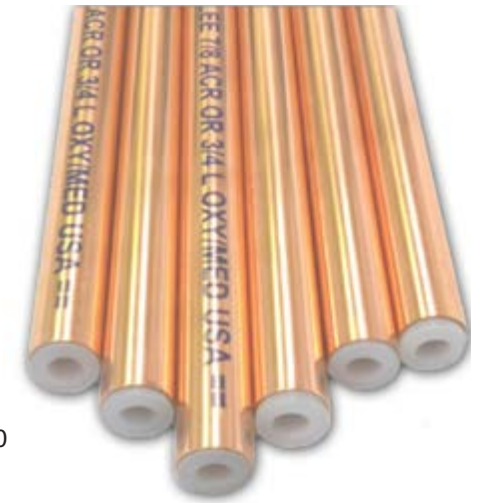
We carry a full line of copper tube products to support most all plumbing supply and DWV applications. We offer all common types including Type K, Type L, Type M, and DWV. All tubes and pipe are manufactured in accordance with applicable standards.

- Made to applicable ASTM standards B88, B306, B819
- Meets NSF 61G
- Made in the USA

Nom. Dia.	O.D. Dia.	TYPE K			TYPE L			TYPE M	DWV	MEDICAL GAS	
		Hard Lengths	Soft Coils	Soft Lengths	Hard Lengths	Soft Coils	Soft Lengths	Hard Lengths	Hard Lengths	Nitrogenized thru 3-1/8" only	
										Type K Hard Lengths	Type L Hard Lengths
1/4"	3/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	-	-	10 ft., 20 ft.	10 ft., 20 ft.
3/8"	1/2"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1/2"	5/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
5/8"	3/4"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
3/4"	7/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1"	1-1/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
1-1/4"	1-3/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
1-1/2"	1-5/8"	10 ft., 20 ft.	60 ft., 100 ft.	10 ft., 20 ft.	10 ft., 20 ft.	60 ft., 100 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
2"	2-1/8"	10 ft., 20 ft.	40 ft., 60 ft.	10 ft., 20 ft.	10 ft., 20 ft.	40 ft., 60 ft.	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
2-1/2"	2-5/8"	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.	-	10ft, 20ft	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
3"	3-1/8"	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.	-	10ft, 20ft	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
3-1/2"	3-5/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
4"	4-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
5"	5-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.	10 ft., 20 ft.
6"	6-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.
8"	8-1/8"	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	-	10 ft., 20 ft.	-	10 ft., 20 ft.	10 ft., 20 ft.

Copper Tube - HVACR

ICS provides a variety of solutions for Air Conditioning and Refrigeration needs.



Made to applicable ASTM standard B280



ACRTUBE Nitrogenized thru 3-1/8" only	
O.D. Dia.	Hard Lengths
3/8"	10 ft., 20 ft.
1/2"	10 ft., 20 ft.
5/8"	10 ft., 20 ft.
3/4"	10 ft., 20 ft.
7/8"	10 ft., 20 ft.
1-1/8"	10 ft., 20 ft.
1-3/8"	10 ft., 20 ft.
1-5/8"	10 ft., 20 ft.
2-1/8"	10 ft., 20 ft.
2-5/8"	10 ft., 20 ft.
3-1/8"	10 ft., 20 ft.
3-5/8"	10 ft., 20 ft.
4-1/8"	10 ft., 20 ft.
5-1/8"	10 ft., 20 ft.
6-1/8"	10 ft., 20 ft.
8-1/8"	10 ft., 20 ft.

REFRIGERATION SERVICE TUBE	
O.D. Dia.	Soft Coils
1/8"	50 ft., 100 ft.
3/16"	50 ft., 100 ft.
1/4"	50 ft., 100 ft.
5/16"	50 ft., 100 ft.
3/8"	50 ft., 100 ft.
1/2"	50 ft., 100 ft.
5/8"	50 ft., 100 ft.
3/4"	50 ft., 100 ft.
7/8"	50 ft., 100 ft.
1-1/8"	50 ft., 100 ft.
1-3/8"	50 ft., 100 ft.
1-5/8"	50 ft., 100 ft.

ACR Tube: Liquid line and suction line can be field constructed and insulated using our superior cleaned and plugged ACR tube.

This is typically for applications where a rigid straight tube provides the best solution for installation, such as commercial refrigeration applications.

CopperTube - LevelWound



- Seamless tube alloy made to C12200 DHP
- Copper material made to ASTM standard B743
- Custom O.D. wall and or tempers can be quoted as required
- Bulk packaging and spool packaging available

O.D. Dia.	Wall	Sizes (lbs.)	Coil Width	Coils per Skid	Approx. Feet / Coil
0.250	0.028	180	7"	6	2377
0.250	0.030	180	7"	6	2239
0.313	0.032	180	7"	6	1643
0.375	0.028	180	7"	6	1521
0.375	0.030	180	7"	6	1428
0.375	0.035	180	7"	6	1242
0.500	0.028	180	7"	6	1118
0.500	0.032	180	7"	6	987
0.500	0.035	180	7"	6	908
0.625	0.032	180	9"	5	779
0.625	0.035	180	9"	5	716
0.625	0.040	180	9"	5	632
0.750	0.035	180	9"	5	591
0.875	0.038	180	9"	5	465
0.875	0.045	180	9"	5	396
1.125	0.050	180	9"	5	275

* Level Wound Copper Tube is available in Light Annealed, Soft Annealed and Hard Temper.

Bulk Packaging Information
 Skids (43" X 43") | Coil ID = 26"
 Stacked in with cardboard disk as separators
 Plastic stretch wrapped on to a skid
 Coils per skid are dependent on coil width

Spool Packaging Information Skids (43" X 43")
 Spools Diameter 42" O.D. | Hub Hole 5.25" I.D.
 Stacked with cardboard reels and hubs mounted
 Plastic stretch wrapped on to a skid
 Coils per skid are dependent on coil width

Temper
 050 = Light Annealed
 060 = Soft Annealed
 H58 = Hard



COPPER SPECIFICATIONS

*Represents maximum deviation at a point

Copper Size/Type	Outside Diameter	Wall Thickness	ASTM Specification	Outside Diameter +/- Tolerance*	Wall Thickness +/-Tolerance*	Tolerance Specification	Polyethylene Min. Thickness	Polyethylene Tolerance*	Outside Diameter Including Poly	Standard Lengths
1/4" L	.375"	.030"	B88/B837	.0020"	.003"	B88	.022"	+ .005"	.419" -.0020 +.0070	60' 100' 250'
3/8" L	.500"	.035"	B88/B837	.0025"	.004"	B88	.022"	+ .005"	.544" -.0025 +.0075	60' 100' 250'
1/2" L	.625"	.040"	B88/B837	.0025"	.004"	B88	.022"	+ .005"	.669" -.0025 +.0075	60' 100' 250'
5/8" L	.750"	.042"	B88/B837	.0025"	.004"	B88	.025"	+ .005"	.800" -.0025 +.0075	60' 100'
3/4" L	.875"	.045"	B88/B837	.0030"	.004"	B88	.025"	+ .005"	.925" -.0030 +.0075	60' 100'
1" L	1.125"	.050"	B88	.0035"	.005"	B88	.025"	+ .005"	1.175" -.0035 +.0085"	60' 100'
3/8" REF	.375"	.032"	B68/B280	.0020"	.003"	B280	.022"	+ .005"	.419" -.0020 +.0070"	50' 100' 250'
1/2" REF	.500"	.032"	B68/B280	.0020"	.003"	B280	.022"	+ .005"	.544" -.0020 +.0070"	50' 100' 250'
5/8" REF	.625"	.035"	B68/B280	.0020"	.004"	B280	.022"	+ .005"	.669" -.0020 +.0070"	50' 100' 250'

POLYETHYLENE COATING

- Linear Low Density Polyethylene LLDPE Extrusion Resin
- Contains UV inhibitors

CODES

Recognized as acceptable piping material in:

ASTM B88/B837 GasTube

MADE IN USA

PLEASE NOTE - Use of this product is subject to the approval of the Authority Having Jurisdiction. This product must be installed in accordance with procedures approved by the Authority Having Jurisdiction.

JOINING

Joining methods are subject to approved joining methods of the Authority Having Jurisdiction. Generally accepted industry practice is to use forged brass flare fittings machined long nut flare fittings or brazed connections with capillary fittings.

PRE-INSULATED STANDARD AND MINI SPLIT ELASTOMERIC BLACK LINESETS

Elastomeric Thermal Black Insulated Linesets

Thermal Insulated With No Seams



- Meets ASTM B208 & C534 Specifications
- Flame Spread Index is rated at 25/50 Plenum rated to ASTM E84, UL723, NFPA 255
- Thermally effective from -40 degrees Fahrenheit to 200 degrees Fahrenheit
- Tough, Flexible Weather Resistant UV outer layer (ASTM G90) makes installation quick, efficient, and economical.

Available Sizes

Copper Sizes (OD)	Insulation Sizes	Lengths Available
1/4	3/8	10
5/16	1/2	15
3/8	3/4	20
1/2	1	25
5/8		30
3/4		35
3/8		40
1 1/8		45
		50
		60

Product Specifications

Linesets are copper tubing lines used to connect split systems air conditioners and heat pumps. Installation is quick, efficient and economical. Factory assembly of Linesets assures Quality & Consistency.

Additional Features:

- Water vapor permeability per ASTM E96
- Standard linesets available with plain end or 90 degree bends
- Mini-split linesets available with plain ends or single/double flared ends

PRE-INSULATED STANDARD AND MINI SPLIT POLYMERIC BLACK LINESETS

Tear Resistant Polymeric Insulation

Thermal Insulation With No Seams



This line of black UV flexible foam insulation linesets specifically designed for lineset, HVAC, mechanical and plumbing lines in commercial and residential buildings. It consists of an insulation core with a flexible, factory applied polymeric protective covering designed to prevent damage to the insulation from sunlight, installation and physical abuse. The material is a moisture-resistant and UV-resistant product with a durable flexible jacket specially designed for lineset applications. This tougher new coating can take the abuse of challenging installations and stands up to extreme elements like UV, heat and cold making it a great choice for outdoor installations.

- Meets ASTM 8280 specifications
- Flame spread Index is rated 25/50 Plenum rated to ASTM E84, UL723, CAN ULC S102.2
- Thermal Conductivity ASTM C 177 or C 518
- Water Vapor Permeability ASTM E 96
- Water Absorption ASTM C 1763
- UV Weather Resistance ASTM G154 tested to 5000 hours

Available Sizes

Copper Sizes (OD)	Insulation Sizes	Lengths Available
1/4	1/2	10
3/8	3/4	15
1/2		20
5/8		25
3/4		30
3/8		35
1 1/8		40
		45
		50

Product Specifications

Linesets are copper tubing lines used to connect split systems air conditioners and heat pumps. Installation is quick, efficient and economical. Factory assembly of Linesets assures Quality & Consistency.

Additional Features:

- Comes with additional 5-year limited warranty
- Protection against thermal losses, condensation and moisture ingress
- Durable outer jacket resists damage due to sunlight, line trimmers and other outdoor hazards
- Meets IECC code requirements for outdoor installation
- Meets code requirements for installation in plenums
- Meets California Building Energy Efficiency Standards Title 24

AP/Armaflex® Black LapSeal™

Tube Insulation with Reinforced Lap Seal



Fiber Free

The original flexible elastomeric pipe insulation with an exclusive elastic foam lap seal for greater seam security and increased protection against condensation, mold and energy loss

- Self-seal system is reinforced with an exclusive elastic foam lap seal to provide increased seam security
- Pre-slit tubes with self-adhesive system leads to greater labor savings
- Easy to install – an excellent choice for retro fit applications
- 1-1/2" and 2" wall sizes
- 25/50 rated for use in air plenums
- Fiber-free, formaldehyde-free, low VOC and nonparticulating formulation protects indoor air quality
- Microban® antimicrobial product protection provides exceptional mold resistance.

TECHNICAL DATA – AP ArmaFlex * BLACK LAPSEAL TUBE INSULATION

Description		
Black flexible closed-cell elastomeric thermal insulation in tubular form with a self-seal system reinforced with lap seal tape		
Applications		
Insulation for piping associated with HVAC, VRV and VRF systems, chillers, hot and cold water, refrigeration		
Specification Compliance		
ASTM C 534, Type I – Grade 1	UL 723	ASTM G21/C1338
ASTM E 84	NFPA 90A, 90B	ASTM G22
NFPA 255	UL 181	ASTM D 1056, 2C1
Approvals, Certifications, Compliances		
<ul style="list-style-type: none"> • 3rd party certified by FM Approvals through 1-1/2" wall thickness • GREENGUARD® Gold Certified. • Manufactured without CFCs, HFCs, HCFCs, PBDEs, or Formaldehyde. 	<ul style="list-style-type: none"> • Made with EPA registered Microban® antimicrobial product protection. • All Armacell facilities in North America are ISO 9001:2008 certified. • Plenum Rated 	

Typical Properties

Specifications	Values	Test Method
	3/8" through 1" Wall	1-1/2" and 2" Walls
Thermal Conductivity: Btu • in/h • ft² • °F (W/mK)		
75°F Mean Temperature (24°C)	0.245 (0.0353)	0.28 (0.040)
90°F Mean Temperature (32°C)	0.254 (0.0366)	0.286 (0.041)
Water Vapor Permeability: Perm-in. [Kg/(s • m • Pa)]	0.05 (0.725 x 10 ⁻¹³)	0.08 (1.16 x 10 ⁻¹³)
Flame Spread and Smoke Developed Index:	25/50 rated	25/50 rated
Water Absorption, % by Volume:	0.2 %	0.2 %
Mold Growth:	Passed	Passed
Fungi Resistance:		
Bacterial Resistance:		
Upper Use Limit:	220°F (105°C)	300°F (149°C)
Lower Use Limit: ①	-297°F (-183°C)②	-297°F (-183°C)②

Sizes

Wall Thickness (nominal) Form	1/2", 1", 1-1/2" (13, 25, 38 mm)
Inside Diameter, Tubular Form	3/8" ID to 6" ID (10 mm to 153 mm)
Length of Sections, Tubular Form	6' (1.8 m)

Outdoor Use Painting with WB Finish or other protective jacketing is required to prevent damage to the insulation in exterior applications and to comply with the insulation protection sections of the International Energy Conservation Code (IECC) and ASHRAE 90.1.

① At temperatures below -20°F (-29°C), elastomeric insulation starts to become less flexible. However, this characteristic does not affect thermal efficiency and resistance to water vapor permeability of ArmaFlex insulation.

② For applications of -40°F to -297°F (-40°C to -183°C), contact Armacell



Wrot Copper Fittings

Wrot fittings are made from commercially pure copper mill products per ASTM B75 Alloy C12200 and conform to material and workmanship per ASME B16.22 and MSS SP-104. Cast fittings are made per ASTM B584 Alloy C84400 and conform to material and workmanship per ASME B16.18 and B16.24 for flanges.

Lead-free*

Dezincification resistant
ASTM B75 Alloy C12200

Third-party certified to NSF/ANSI 61 and 372
Material and workmanship per ASME B16.22
Material, workmanship and dimensions per MSS SP-104
Material, workmanship and dimensions per MSS SP-109 (5" to 8")
NFPA 99 Health Care Facilities Gas and Vacuum Systems and the Compressed Gas Association, Pamphlet G4.1 (medical gas)
UL 207 Recognized to 700 PSI (select diameters)
Size ranges from 1/8" to 8"

ICS offers Wrot Copper fittings from both domestic manufactures and imported from quality manufactures. This gives our customers a wide range of manufactures and price points to choose from to fill their individual needs. Please contact us for a complete price list of all the many Wrot Copper fittings available.

Cleaned & Bagged Wrot Copper Fittings

For Medical Gas Applications

Cleaned and degreased wrot copper fittings for use in oxygen systems.

- ASME B16.22:2012 Wrot Copper and Copper Alloy Solder Joint Pressure Fittings
- NFPA 99:2012 Standard for Health Care Facilities
- CGA G4.1:2009 Cleaning Equipment for Oxygen Service
- Conforms to CGA G4.1 and NFPA 99C Medical Gas specification.
- Specification, part number UPC barcode and description printed on each bag.



Brass Compression Fittings



- Adapters, Connectors, & Couplings
- Brass Elbow Fittings
- Nut & Sleeve
- Plug, Insert & Cap
- Tee
- Union



Brass Flare Fittings



- Adapters, Connectors, & Couplings
- Cross
- Elbow
- Nut
- Plug, Cap, Gasket, Etc.
- Tee
- Union



Brass Pipe Fittings



- Adapters, Connectors, & Couplings
- Bushing
- Cap, Nut & Union
- Cross
- Elbow Barstock
- Elbow Forged
- Nipple
- Plug
- Tee



Brass Garden Hose Fittings



- Brass Garden Hose Fittings
- Brass Garden Hose Swivel Fittings
- Garden Hose



ICS offers some of our Garden Hose fittings in both leaded and Lead Free for all of our customers needs.

Lead Free Pipe Fitting Options

Lead Free Brass Compression Fittings



LEAD FREE

Meets the following Legislation for Potable Water Applications:

- Federal Government S.3874
- Federal Public Law 111-380
- California AB 1953
- Maryland HB-372
- Louisiana Act No. 362
- Vermont Statute
- Title 9, Chapter 63: 247h

Lead Free Cast Pipe Fittings



- Bronze fittings conform to AWWA C800
- Bronze castings conform to ASTM B584, UNS Alloy C89833
- Bronze fitting dimensions conform to ASME B16.15, Class 125
- NPT threads on all fittings conform to ASME B1.20.1
- Bronze unions conform to specification A-A-59617
- Manufacturing facilities are ISO 9001:2008
- Fittings are 100% air tested
- Certified to ANSI/NSF 372, SWDA and California AB 1953

CYCLEMASTER® Ball Valves



CYCLEMASTER® Ball Valve Features:

- Maximum working pressure (PS): 700 psig, 48 bar
- Working temperature range (TS): -40°F/300°F, -40°C/149°C
- Compatible with all CFC, HCFC and HFC refrigerants and oils
- Full port construction to match line size ID
- Internally equalized ball design
- Rupture-proof encapsulated stem
- MCMTM Seal Technology
- UL/cUL Listed, CE Certified

Multi Split Ball Valves



CYCLEMASTER® Multi-Split Ball Valve Features:

- Maximum working pressure (PS): 700 psig, 48 bar
- Working temperature range (TS): -40°F/300°F, -40°C/149°C
- Compatible with all CFC, HCFC and HFC refrigerants and oils
- Full port construction to match line size ID
- Engineered for multi-split A/C and heat pump units
- Rupture-proof encapsulated stem
- UL/cUL Listed, CE Certified

CYCLEMASTER® Ball Valves



CYCLEMASTER® Ball Valve Features:

- Maximum working pressure (PS): 700 psig, 48 bar
- Power Supply: 24 VAC
- Ambient Temperature: -22°F to 130°F, -30°C to 54°C
- Compatible with all CFC, HCFC and HFC refrigerants and oils
- Full shutoff capability
- Gradual open/close stops line hammer
- Remote operating capability
- Removable actuator for quick change replacement
- Manual override and valve positioning
- Electronic overload protection
- UL/cUL Listed, CE Certified

Component Parts



Retrofit Cap Features:

- Designed to replace existing caps on installed valves for the full range of CYCLEMASTER® Ball Valve sizes 1/4" to 3 1/8"
- Large nut secures cap assembly to valve neck allowing center post to easily turn for on/off operation and clear visual identification
- Dual o-ring stem seals and base seal to assure positive isolation



Worm Drive Hose Clamps- SAE Type "F"
ICS offers multiple grades and sizes of traditional worm drive hose clamps.

HFSS Series – All 300 Series Stainless Steel Clamps

- 300 series stainless steel band, housing and 5/16" slotted hex head screw
- All 300 series stainless steel construction provides better corrosion resistance than HSS Series
- Well suited for marine applications
- Ultimate Torque: 60in.lbs. min. (6.8Nm) Installation Torque: 35-45in.lbs. (4.0-5.1Nm)

We also offer the following clamp series:

HGSS Series – All 304 Series Stainless Steel Clamps

- 304 series stainless steel band, housing and screw
- Suitable for harsh environments and marine applications

HLSS Series – All 316 Series Stainless Steel Clamp

- 316 series stainless steel band, housing and screw
- Our most durable clamp for excellent performance in highly corrosive environments
- Suitable for plumbing, water well, municipal storm drains, irrigation, marine, transportation and Petrochemical applications

Clamp Series	"A" Diameter Range					
	SAE Size	Decimals		Inches		Millimeters
6	0.44	0.78	7/16	25/31	11	20
8	0.44	0.91	7/16	29/32	11	23
10	0.56	1.06	9/16	1 1/16	14	27
12	0.69	1.25	11/16	1 1/4	18	32
16	0.75	1.5	3/4	1 1/2	19	38
20	0.81	1.75	13/16	1 3/4	21	44
24	1.06	2	11/16	2	27	51
28	1.31	2.25	15/16	2 1/4	33	57
32	1.56	2.5	19/16	2 1/2	40	64
36	1.81	2.75	1 13/16	2 3/4	46	70
40	2.06	3	2 1/16	3	52	76
44	2.31	3.25	2 5/16	3 1/4	59	83
48	2.56	3.5	2 9/16	3 1/2	65	89
52	2.81	3.75	2 13/16	3 3/4	71	95
56	3.06	4	3 1/16	4	78	102
60	3.31	4.25	3 5/16	4 1/4	84	108
64	3.56	4.5	3 9/16	4 1/2	90	114
72	4.06	5	4 1/16	5	103	127
80*	4.56	5.5	5 1/16	5 1/2	116	140
88*	5.06	6	5 9/16	6	129	152
96	5.56	6.5	6 1/16	6 1/2	141	165
104	6.06	7	6 1/16	7	154	178
116	6.50	7.75	6 1/2	7 3/4	165	197
128	5.69	8.5	5 11/16	8-12	144	216

*items not stocked. special order only

Seamless Pinch and Ear Clamps



These "Tongue and Groove" clamps offer 360° seamless fastening. Due to their seamless design and uniform compression sealing, these clamps are often used in the beverage, automotive, marine, and motorcycle industries. They are manufactured using 304 Stainless Steel and are perfect for poly and braided tubing.

Black Swan® PTFE Thread Sealing Tape



Black Swan® PTFE Pipe Thread Sealant Tape is used on all types of threaded fittings for passage of water potable and non-potable, most chemicals, oxygen, gas, hydraulic and high-pressure lines.

PTFE Pipe Thread Tape withstands harsh temperatures (from -450F to +550F). Strong Chemical resistance. Stretches 50% without breaking.

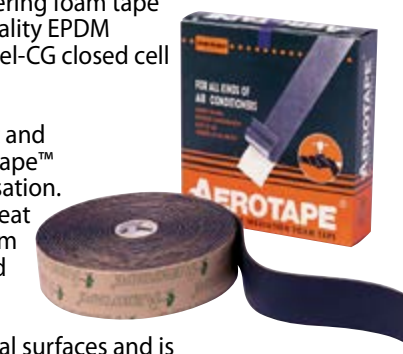
Meets MIL-spec T-27730A. Color is white. Rolls are 520" long.

High Quality Self-Adhesive Insulation Foam Tape

Aerotape™ is a flexible and self adhering foam tape and is made from the same high quality EPDM material that our Aerocel and Aerocel-CG closed cell insulation is made from.

Aerotape™ is ideal for wrapping hot and cold pipe, tubing and fittings. Aerotape™ is easy to use and prevents condensation. Aerotape™ is designed to prevent heat gain, heat loss and prevent frost from forming on chilled water tubing and refrigeration lines.

Aerotape™ adheres firmly to all metal surfaces and is coated with selected pressure sensitive adhesive providing long service life.



Gate Valves



Hose Bibs



Supply Stops



Lead Free Ball Valves



Boiler Drains



Gas Valves



Check Valves



Stop and Waste



Gas Cocks



Angle Valves

Copper Plated Hangers



Copper Plated Bell Hanger have a patented access hole through the top which allows the hanger to be mounted to most flat surfaces without disassembling the cap. We have added 4 additional mounting holes around the base of the bell for additional mounting flexibility. Our hanger is used as a standoff clamp in both vertical and horizontal applications and provides 3/4" standoff.



Copper Plated Split Ring Hangers are used to suspend copper tubing from joists, steel beams, wooden rafters or walls. They can be used in both horizontal and vertical applications.



Copper Plated A-Band Tubing Hangers are made out of 17 gage material. They are used to suspend copper tubing from joists, wooden rafters, and steel beams. Use in conjunction with threaded rod to achieve various heights.



Copper Plated Swivel Hangers are used for general piping purposes. Knurled swivel nut design permits hanger adjustment after installation. Spring tension on swivel nut holds it securely in hanger before installation. Swivel nut easily removed.



Copper Plated Tubing Clips are used to clamp copper tubing flush to surface in both vertical and horizontal applications. Our Copper Plated Tubing Clips are designed to snap onto the tubing for hands free nailing.

Hardware



Mini Beam Clamps



Threaded Rod



Power Bolt Anchors



Ceiling Flanges



Mechanical Anchors



Power Stud Anchors

NOTES



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