RATERMANN
MANUFACTURING, INC.

SHERWOOD
MASTER DISTRIBUTOR

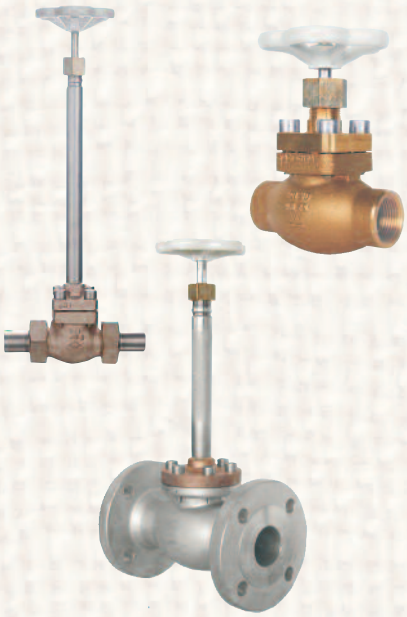
Sherwood Residual Pressure Valve
see page 34A 28-33

for Various Gases including Carbon Dioxide and Medical Oxygen

RATERMANN
MANUFACTURING, INC.

www.rmiorder.com
sales@rmimfg.com

Safety Relief Valves for Bulk Tanks
see page 30A 1-2



Globe Valves
see page 37D 2-34

INDEX

VALVES

VALVES HEROSE

VALVES HIGH PRESSURE

DEWAR ACCESSORIES

LOCKOUTS

MEDICAL OXYGEN CONNECTORS

Rev: 3/19/16

Cylinder Valving I.D. Disk | I.D. Collars

Put on I.D. Disk when valving cylinder

Custom imprints available

Part # CV-S1

Part # CV-DT

Part # CV-WG

Part # CV-CC

Cylinder Valving I.D. Disks

Part # for Pkg. of 50	Description	Part # for Pkg. of 10
CV-S1PK50	Siphon	(Pt # CV-S1PK10)
CV-DTPK50	Dip Tube	(Pt # CV-DTPK10)
CV-WGPK50	Welding Grade	(Pt # CV-WGPK10)
CV-CCPK50	Coca-Cola	(Pt # CV-CCPK10)

Customer Owned
Part # CYL-ZS-CUSTOWN

Zinc Plated Cylinder Sleeve

Part #	Description	
CYL-ZS	Zinc Plated Cylinder Sleeve	No lettering
CYL-ZS-CUSTOWN	Zinc Plated Cylinder Sleeve	"Customer Owned"
CYL-ZS-832	Sealant	

Custom Imprint Available see page 9A-13

Valving I.D. Collars

For 80 cu. ft. through 330 cu. ft. Cylinders

- Install at time of Valve Installation

Part # CV-

Standard Collar Colors Available

Semi Clear
Part Numbers
CV-C

White
Part Numbers
CV-W

Beige
Part Numbers
CV-BG

Yellow
Part Numbers
CV-Y

Dark Green
Part Numbers
CV-DG

Light Blue
Part Numbers
CV-LB

Blue
Part Numbers
CV-B

Dark Blue
Part Numbers
CV-DB

Orange
Part Numbers
CV-O

Red
Part Numbers
CV-R

Purple
Part Numbers
CV-P

Brown
Part Numbers
CV-BR

Gray
Part Numbers
CV-GR

Black
Part Numbers
CV-BL

Special Collar Colors Available

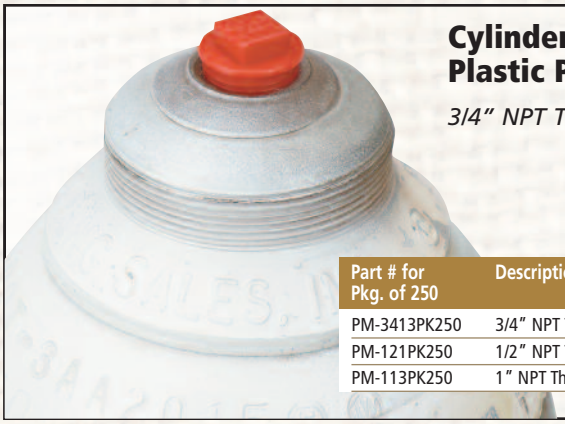
Lime Green
Part Numbers
CV-LG

Pink
Part Numbers
CV-PK

Note: *Fluorescent Orange and Hot Pink are susceptible to fading with prolonged exposure to UV light.*

Please Note: All colors shown are printed representations. Actual colors may vary.

Custom Imprinted Valving I.D. Collars are Available Call for Pricing



Cylinder-Threaded Plastic Plug

3/4" NPT Thread

Part # for Pkg. of 250	Description	Part # for Pkg. of 10
PM-3413PK250	3/4" NPT Thread	(Pt # PM-3413PK10)
PM-121PK250	1/2" NPT Thread	(Pt # PM-121PK10)
PM-113PK250	1" NPT Thread	(Pt # PM-113PK10)

CYLINDER I.D. COLLARS FOR RETESTING OF CYLINDER

Use these collars when putting cylinders into service or when re-hydro testing.

Easily see by what color collar you use when the cylinder needs to go out for hydro testing.

By using a different color you can quickly see the tanks that are coming up for a hydro test and the month that they are due which has the hole punched out for the month.

Each year has its own color for ease of identification.

Hydro ID™

Call Customer Service at 1-800-264-7793

Hydro Test I.D. Collars

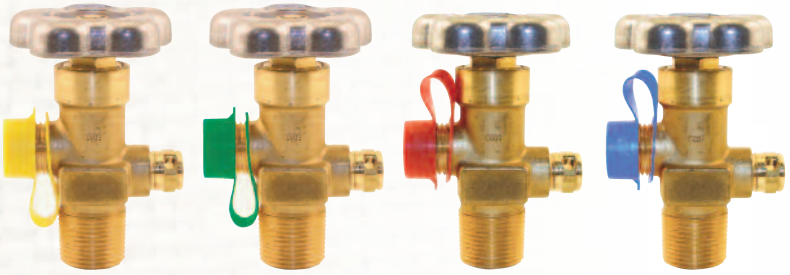
Part # Pack of 10	Part # Pack of 50	Description
CHD-2016-PK10	CHD-2016-PK50	2016 Hydro Date
CHD-2017-PK10	CHD-2017-PK50	2017 Hydro Date
CHD-2018-PK10	CHD-2018-PK50	2018 Hydro Date
CHD-2019-PK10	CHD-2019-PK50	2019 Hydro Date
CHD-2020-PK10	CHD-2020-PK50	2020 Hydro Date

CGA Dust Covers | Thread Protectors

CGA Plugs are available in Packs of 1,000 (PK1000) **and Packs of 100** (PK100)

CGA 320 Valve Plugs | Carbon Dioxide

Dust Cap with Strap



CGA 320
Dust Cap – Yellow
Pt # PM-C12-YPK1000
Pt # PM-C12-YPK100

CGA 320
Dust Cap – Green
Pt # PM-C12-GRPK1000
Pt # PM-C12-GRPK100

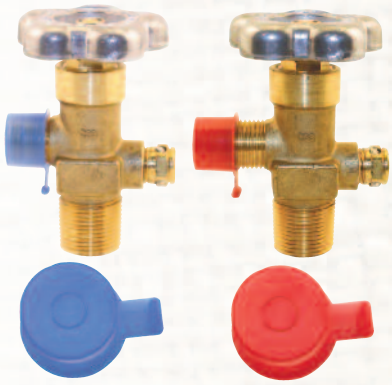
CGA 320
Dust Cap – Red
Pt # PM-C12-RPK1000
Pt # PM-C12-RPK100

CGA 320
Dust Cap – Blue
Pt # PM-C12-BPK1000
Pt # PM-C12-BPK100

Flexible Thread Protector for CO^2
- Male Thread Valves

CGA 320 Dust Cap – Red
Pt # PM-2PK1000
Pt # PM-2PK100

Ridgid Plastic with Pull Tab for Carbon Dioxide

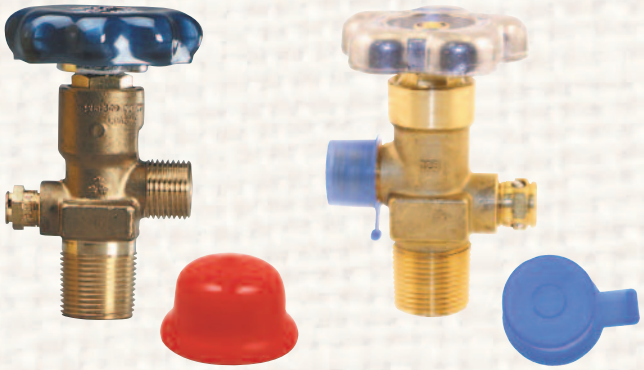


CGA 320
Male Cover – Blue
Pt # PF-HB1PK1000
Pt # PF-HB1PK100

CGA 320
Male Cover – Red
Pt # PF-HR1PK1000
Pt # PF-HR1PK100

CGA 346 Valve Plugs | Compressed Air

Male Thread Valves



CGA 346
Male Dust Cover – Red
Pt # PM-2PK1000
Pt # PM-2PK100

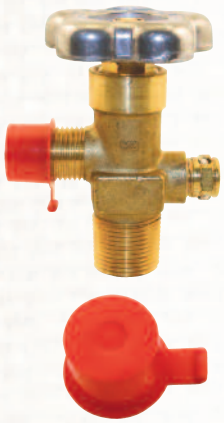
CGA 346
Male Dust Cover – Blue
Pt # PM-HR1BPK1000
Pt # PM-HR1BPK100

Use CGA Dust COVERS & Thread PROTECTORS

Use CGA Dust Cover and Thread Protectors in your procedures – to keep dust and dirt out of the valves along with using valve shrink wrap for a package delivered that customer knows the product has not been used or tampered with.

CGA 350 Valve Plugs | Hydrogen

Hydrogen Dust Cap
- Rigid plastic with pull tab



CGA 350 Dust Cover – Red
Pt # PM-HR1PK1000
Pt # PM-HR1PK100

Hydrogen Dust Cap
- Rigid plastic with pull tab

CGA 350 Dust Cover – Blue
Pt # PM-HR1BPK1000
Pt # PM-HR1BPK100

Flexible Thread Protector for Hydrogen
- Male Thread Valves

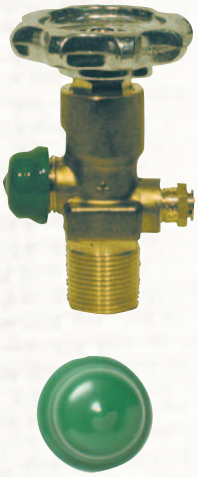
CGA 350 Dust Cap – Red
Pt # PM-2PK1000
Pt # PM-2PK100

Rev: 6/3/14

Note: All colors shown are printed representations. Actual colors may vary.

CGA 540 Valve Plugs | Oxygen

Oxygen Dust Cap
• Soft flexible plastic



CGA 540 Dust Cover – Green
Pt # PM-1PK1000
Pt # PM-1PK100

Clear Dust Cover for CGA 540 Valve
• Soft flexible plastic

CGA 540 Dust Cover – Clear
Pt # CDC-540PK1000
Pt # CDC-540PK100

Clear Green Dust Cover for CGA 540 Valve
• Soft flexible plastic

CGA 540 Dust Cover – Green
Pt # CDC-540GR-PK1000
Pt # CDC-540GR-PK100

Oxygen Tamper Evident Dust Cap
• Rigid plastic with pull tab

CGA 540 Dust Cover – Green
Pt # PM-H3PK1000
Pt # PM-H3PK100

CGA 580 Valve Plugs | Inert Gases Argon Helium Nitrogen

Inert Soft Dust Covers
• Female Thread Valves

Flexible Vinyl Plugs to Keep Particles Out of Valves

CGA 580 Plug – Red
Pt # PF-1PK1000
Pt # PF-1PK100

Inert Soft Dust Covers
• Soft Flexible Plastic

CGA 580 Plug – Green
Pt # PF-G1PK1000
Pt # PF-G1PK100

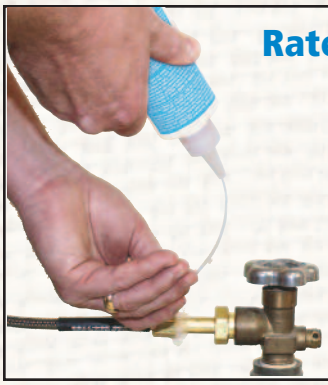
Inert Tamper Evident Dust Cover
• Rigid Plastic with blow hole

CGA 580 Plug – Red
Pt # PF-H1PK1000
Pt # PF-H1PK100

Inert Tamper Evident Dust Cover
• Rigid Plastic with blow hole

CGA 580 Plug – Blue
Pt # PF-HB1PK1000
Pt # PF-HB1PK100

Note: All colors shown are printed representations. Actual colors may vary.



Ratermann's Oxygen Safe Valve Leak Check

Find your Leaks Fast and Easily
with the Extending Tube
to Get in the Hard to Reach Areas.

Used For
• Hose Fittings
• Valves

Part #	Description	Size
LC-8OZ	Leak Check Squeeze Bottle	8 oz.
LC-1GAL	Leak Check – 4 to a case	1 Gallon

CGA 510 Valve Plugs | Acetylene

Valve Plugs
for Mc Acetylene and B Acetylene

Part # PP-MC

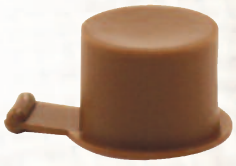
Part # PP-B

Tamper-Evident Pull Tab Style

Mc Acetylene
CGA 200

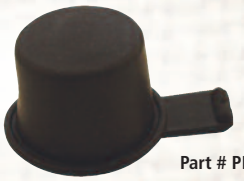
B Acetylene
CGA 520

CGA 500 Valve Plug



Part # PM-BR

CGA 200 Valve Plug

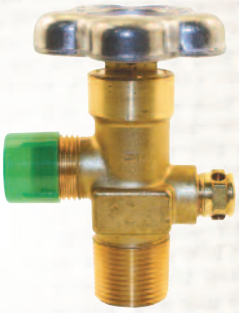


Part # PM-BL

CGA 540 | Oxygen Medical Gas

RMI® ***Parts for*** **Oxygen Bottles**

- CGA 540 push on for Walkabout Oxygen bottles.
- Easy Removal



CGA 540 Dust Cover – Clear
Pt # CDC-540PK1000
Pt # CDC-540PK100

CGA 540 Dust Cover – Green
Pt # CDC-540PK1000
Pt # CDC-540PK100

Medical Cylinder Plugs & Seals

Barb Nipple Cap

- Smooth sides

Part # PP-BARB

Ribbed Nipple Cap

- Ribbed sides

Part # PP-BARB-RS

Easy Oxygen Push on Cap

- Economy Push On Seal

Red Cap
Pt # PM-14RD

Green Cap
Pt # PM-14

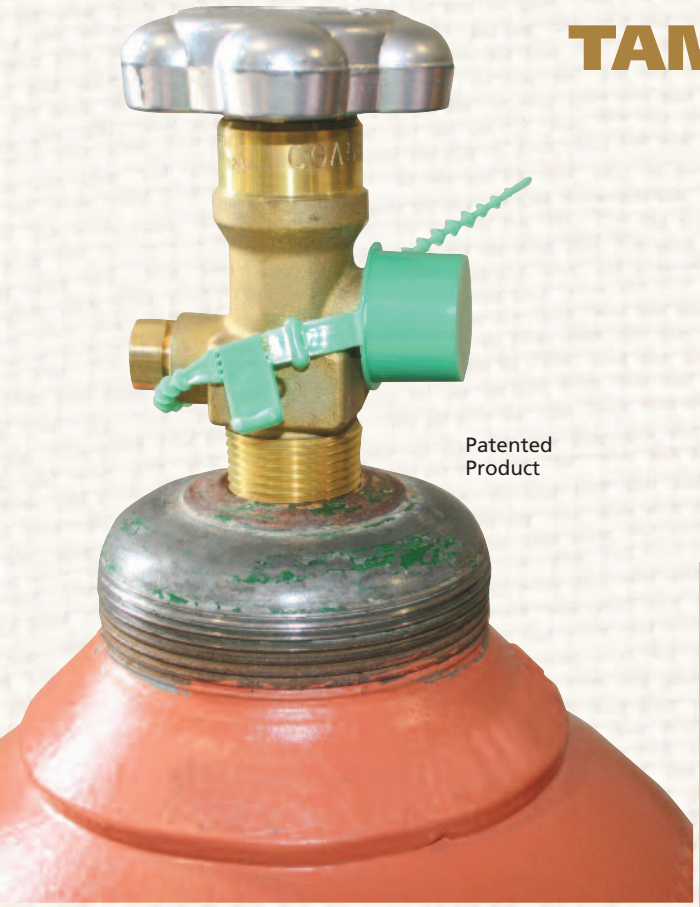
Thread on Dust Cover Cap

Red Cap
Pt # PP-MEDPLRD

Green Cap
Pt # PP-MEDPL

Note: All colors shown are printed representations. Actual colors may vary.

TAMPER EVIDENT CGA DUST PLUG



Patented Product

Tamper evident seal fits most male and female CGA cylinder valves. Patented Product.

1 Installing tamper evident dust cover

2 Tightening the strap down

3 Breaking tamper evident seal – removing dust cover

USED FOR

Medical Oxygen Tamper Evident Dust Cover

Customers can now ask their Q.C. processors how they know the bottle they go to use has the integrity needed in Medical Oxygen.

You can now be assured, at a glance, that the Tank of Medical Oxygen you need is full and has not been tampered with.

Specialty Gases

High end gases deliver a package that ensures the quality is not disrupted with the tamper evident seal that keeps dirt and dust out of the valve.

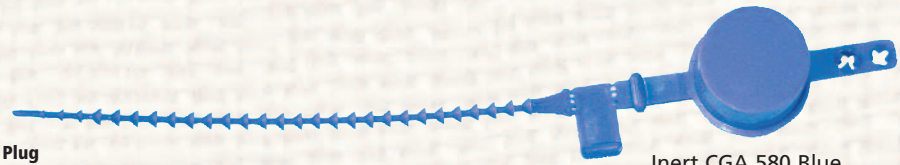
You can assure your customer that the high quality of your Specialty Gas mixes has not been disrupted, and that the valve is clean with our new Tamper Evident Device.

Balloon Helium Accounts

Shows whether cylinders have been used or not.

Ensures that Helium Cylinders are full, saving money on call back costs.

Oxygen CGA 540 Green
Part # HP-WQP540



Inert CGA 580 Blue
Part # HP-WQP580

Tamper Evident CGA Dust Plug

Part #	Description	Color
HP-WQP540	Oxygen CGA-540	Green
HP-WQP580	Inert Gas CGA-580	Blue

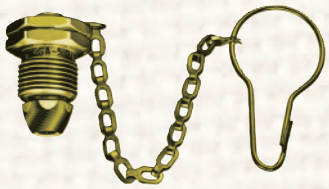
Gas Tight Brass Plug & Chain Assemblies

For Sealing Manifolds, Cylinders & Hose Connectors

Gas Tight Two-Piece Plug and Chain Assemblies

These two-piece nut and blind nipple assemblies made to CGA and IAA standards make a gas tight seal with a standard CGA connections. Also available with replaceable soft tips or "O" rings.

Part No. FIT-2PC-540

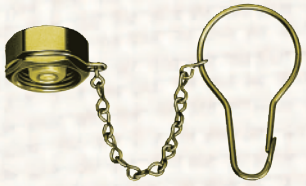


Part No. FIT-2PC-510

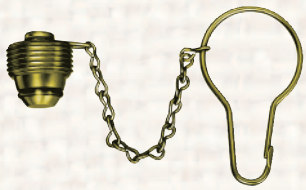
Ratermann Part No.	CGA No.	Description	Gas Tight Seal
FIT-2PC-021	021	Fuel Gas "A" Hose Size 3/8"-24-LH-Internal	200 P.S.I.G.
FIT-2PC-022	022	Oxygen Std. "B" Hose Size 9/16"-18-RH-Internal	200 P.S.I.G.
FIT-2PC-023	023	Fuel Gas Std. "B" Hose Size 9/16"-18-LH-Internal	200 P.S.I.G.
FIT-2PC-024	024	Oxygen "C" Hose Size 7/8"-14-RH-Internal	200 P.S.I.G.
FIT-2PC-025	025	Fuel Gas "C" Hose Size 7/8"-14-LH-Internal	200 P.S.I.G.
FIT-2PC-026	026	Oxygen "D" Hose Size 1-1/4"-12-RH-Internal	200 P.S.I.G.
FIT-2PC-027	027	Fuel Gas "D" Hose Size 1-1/4"-12-LH-Internal	200 P.S.I.G.
FIT-2PC-032EXT	032	Inert Gas "B" Hose Size 5/8"-18-RH-External	200 P.S.I.G.
FIT-2PC-033	033	Air-Water "B" Hose Size 5/8"-18-LH-External	200 P.S.I.G.
FIT-2PC-032INT	032	Inert Gas "B" Hose Size 5/8"-18-RH-Internal	200 P.S.I.G.
FIT-2PC-034	034	Inert Gas "C" Hose Size 7/8"-14-RH-External	200 P.S.I.G.
FIT-2PC-326	326	Nitrous Oxide-RH-Internal	3000 P.S.I.G.
FIT-2PC-346	346	Air-RH-Internal	3000 P.S.I.G.
FIT-2PC-347	347	Air-RH-Internal Type 316	3001-5500 P.S.I.G.
FIT-2PC-347SS	347	Air-RH-Internal Type 316 Stainless Steel	3001-5500 P.S.I.G.
FIT-2PC-350	350	Hydrogen, Methane-LH-Internal	3000 P.S.I.G.
FIT-2PC-510	510	Acetylene-LH-External Propane-LH-External	250 P.S.I.G. 500 P.S.I.G.
FIT-2PC-520	520	"B" Acetylene-RH-Internal	250 P.S.I.G.
FIT-2PC-540	540	Oxygen-RH-Internal	3000 P.S.I.G.
FIT-2PC-555	555	Propane (Liquid Withdrawal)-LH-Internal	3000 P.S.I.G.
FIT-2PC-580	580	Argon, Helium, Nitrogen-RH-External	3000 P.S.I.G.

Gas Tight One-Piece Plug and Chain Assemblies

These shorter one-piece plug and chains can be used where space is limited to seal-off cylinder valves and still be able to install the cylinder valve cap. These nipples have replaceable soft tips or "O" rings for a more positive seal using less force.



Oxygen
Part No. FIT-OPC-540



Argon, Helium, Nitrogen
Part No. FIT-OPC-580

Ratermann Part No.	CGA No.	Description	Gas Tight Seal
FIT-OPC-320	320	Carbon Dioxide-RH-Internal	3000 P.S.I.G.
FIT-OPC-326	326	Nitrous Oxide-RH-Internal	3000 P.S.I.G.
FIT-OPC-330	330	Non-Corrosive Gas-LH-Internal	3000 P.S.I.G.
FIT-OPC-346	346	Air-RH-Internal	3000 P.S.I.G.
FIT-OPC-350	350	Hydrogen, Methane-LH-Internal	3000 P.S.I.G.
FIT-OPC-510	510	Acetylene-LH-External Propane-LH-External	250 P.S.I.G. 500 P.S.I.G.
FIT-OPC-540	540	Oxygen-RH-Internal	3000 P.S.I.G.
FIT-OPC-555	555	Propane (Liquid Withdrawal)-LH-Internal	3000 P.S.I.G.
FIT-OPC-580	580	Argon, Helium, Nitrogen-RH-External	3000 P.S.I.G.
FIT-OPC-590	590	Industrial Air-LH-External	3000 P.S.I.G.

PTFE Paste and Tape | Valve Leak Check

PTFE Paste and Tape

Oxygen Safe, Chemically Inert, and Odor Free

FORMULA-8 is used by thousands of welding and general supply companies and equipment manufacturers worldwide.

IDEAL APPLICATIONS FOR PTFE PASTE

- Oxygen cylinders to eliminate leaks
- Fine instrument threads
- Oxygen systems below 125˚ C
- Valves on bottled gases

PTFE Paste

Part #	Description
OXY-PTFE-8	PTFE Paste

See page 27A-4 for Nitrile Latex-Free Gloves

Green Oxygen PTFE Threaded Seal Tape

Green PTFE Tape

Part #	Description
TAPE-2-GREEN	1/2" x 520" Green PTFE Tape
TAPE-34-GREEN	3/4" x 520" Green PTFE Tape

PTFE Tape

Part #	Description
TAPE-1	1/4" PTFE Tape
TAPE-2	1/2" PTFE Tape
TAPE-34	3/4" PTFE Tape
TAPE-3	1" PTFE Tape

Ratermann's Oxygen Safe Valve Leak Check

Find your Leaks Fast and Easily with the Extending Tube to Get in the Hard to Reach Areas.

Part # LC-8OZ

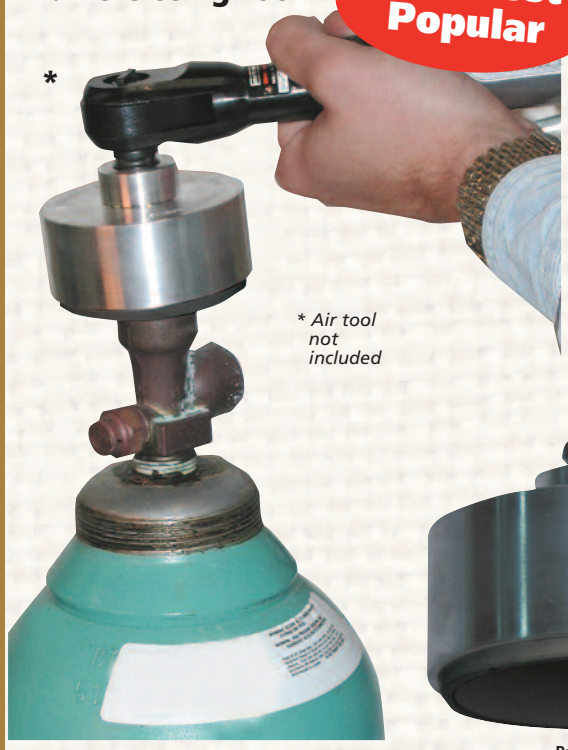
Part # LC-1GAL

Part #	Description	Size
LC-8OZ	Leak Check Squeeze Bottle	8 oz.
LC-1GAL	Leak Check – 4 to a case	1 Gallon

Power Tool Attachments for Valves

For Valves – Valve Closing Tool

Our Most Popular



* *Air tool not included*

Rubber insert gives cushion to valve handle when opening and closing.

Rubber insert slips when valve closes to reduce over tightening of valve.

Socket connection 3/8" hardened steel.

Part # CV-38RVT

Power Tool Attachment for Valves

Part #	Description
CV-38RVT	Complete Unit – 3/8" Drive Valve Tool – Holder Shell
CV-38SHELL	3/8" Drive Valve Tool – Holder Shell
CV-LGINSERT	Hard Replacement Insert for Valve Tool

Cap Remover

Fast Cap Tool

Speed up your filling operation with the Fast Cap Tool. The power tool attachment for cylinder caps.

VIDEO DEMO AVAILABLE

Part # CC-CR38

Fast Cap Tool

Part #	Description
CC-CR38	3/8" Drive Full Unit Cap Remover Tool

Valve Opening and Closing Socket & Cap Wrench

DESIGNED TO WORK ON MOST BRANDS OLD & NEW STYLE HANDWHEELS

Valve Opening Tool for All Brands of High Pressure Cylinder Valves

Updated Design of our

Universal Valve Open & Close Tool

for New & Old Style Valve Hand Wheels

- **Use with 3/8 Angle Air Wrench**

Part # CV-TL

Cap Wrench

For removing those "hard-to-open" caps.

Cap Wrench
Part # CW-CAP

Part #	Description
CW-CAP	Cap Wrench

High Pressure Cylinder Caps

Caps for High Pressure Cylinder 80 through 330 cu. ft.

Caps Painted Gray
6 1/2" – 3 1/8-11

Caps Painted White
6 1/2" – 3 1/8-11

Caps Painted Black
6 1/2" – 3 1/8-11

Caps Painted Green Medical
6 1/2" – 3 1/8-11

Caps Unpainted
6 1/2" – 3 1/8-11

INSIDE CAP CYLINDER THREADS

Fine Thread:
11 threads to an inch

Coarse Thread:
7 threads to an inch.
Cap I.D. is 3 1/4

Unpainted High Pressure Cylinder Caps

Part #	Description
8FRNP	Fine Thread
8CRNP	Coarse Thread

Painted – Fine Thread Most Common

Part #	Color
8FRNP-08	White
8FRNP-02	Black
8FRNP-06	Gray
8FRNP-MGR	Green Medical

Painted – Coarse Thread

Part #	Color
8CRNP-08	White
8CRNP-02	Black
8CRNP-06	Gray

Valve Cap Wrench

For removing those "hard-to-open" caps.

Cylinder Cap Wrench

Part #	Description
CW-CAP	Cap Wrench

Fast Cap Tool

Speed up your filling operation with the Fast Cap Tool.

The power tool attachment for cylinder caps.

Fast Cap Tool

Part #	Description
CC-CR38	3/8" Drive Full Unit Cap Remover Tool

High Pressure Cap
Pt # CAP-G4PK100

Acetylene Cap
Pt # CAP-ACT4PK100

Cap Netting

Keep wasps and hornets out of your cylinder caps.

Sizes available for both high pressure and acetylene caps.

Cap Netting

Part #	Description	Color
CAP-G4PK100	High Pressure Cap	Green
CAP-ACT4PK100	Acetylene Cap	Orange

Rev: 1/18/16, 7/1/13

Residual Pressure Valve Adapters

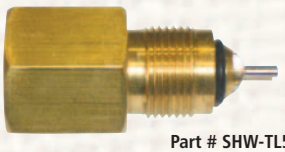
Sherwood® Style Residual Pressure Valves

Residual Valve

Part Number	Gas Service	CGA Outlet	NGT Inlet
SHW-GRPV32061-XX	Carbon Dioxide	320	3/4"
SHW-GRPV34661-XX	Breathing Air	346	3/4"
SHW-GRPV35065-XX	Hydrogen	350	3/4"
SHW-GRPV54061-XX	Oxygen	540	3/4"
SHW-GRPV58061-XX	Inert Gases	580	3/4"
SHW-GRPV58061-XX-7	Inert Gases	580	3/4" +7 OS
SHW-GRPV59061-XX	Air, Sulphur Hex.	590	3/4"
SHW-GRPV59061-XX-7	Air, Sulphur Hex.	590	3/4" +7 OS

For Pressure Settings

Replace "**XX**" in the part number with the corresponding code below for the PSI:
28 for 3000 PSI, **32** for 3360 PSI, **35** for 3775 PSI, **38** for 4000 PSI



Part # SHW-TL580D

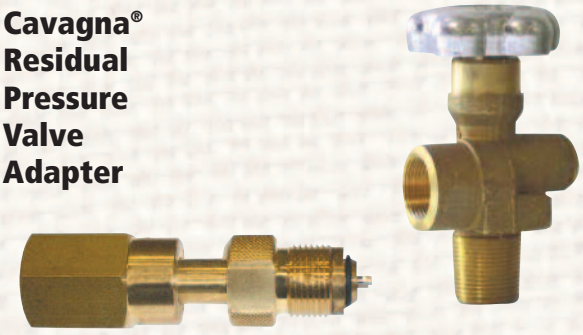
Nut & Nipple with Pin Index

Part Number	Description
SHW-TLG320W	Fill Adapter with Fixed Pin for CGA320
SHW-TLG346S	Fill Adapter with Fixed Pin for CGA346
SHW-TLG350S	Fill Adapter with Fixed Pin for CGA350
SHW-TLG540S	Fill Adapter with Fixed Pin for CGA540
SHW-TL580D	Fill Adapter with Fixed Pin for CGA580
SHW-TL590D	Fill Adapter with Fixed Pin for CGA590

RPV'S ARE POSITIVE FLOW VALVES

The concept of a RPV Cylinder Valve is to retain a small positive pressure of gas in a gas cylinder. (RPV's) sometimes called Positive Flow Valves, are typically of brass construction. RPV's are high pressure cylinder valves with a built in check valve that retains approximately 30-50 psig in the cylinder. This prevents backflow contamination when cylinder pressure gets below the customer's system pressure. RPV's also prevent atmospheric contamination if a customer leaves the valve open when the cylinder is empty.

Cavagna® Residual Pressure Valve Adapter

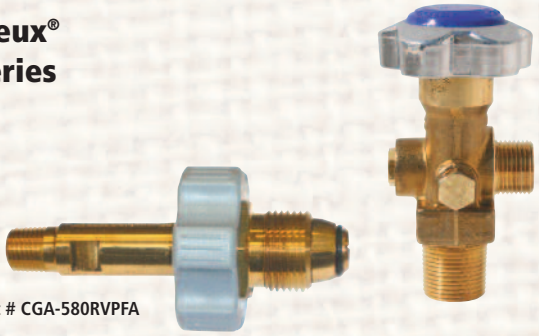


Part # PBX25800-4M

Cavagna® Filling Adapter Part Numbers

Part Number	Description
PBX23200-4M	Fill Adapter with Retractable Pin for CGA320
PBX03460-4M	Fill Adapter with Retractable Pin for CGA346
PBX23500-4M	Fill Adapter with Retractable Pin for CGA350
PBX05400-4M	Fill Adapter with Retractable Pin for CGA540
PBX25800-4M	Fill Adapter with Retractable Pin for CGA580
PBX05900-4M	Fill Adapter with Retractable Pin for CGA590

Ceodeux® BR Series



Part # CGA-580RVPFA

Ceodeux® Filling Adapter Part Numbers

Part Number	Description
CGA-320RVPNUTNP	Fill Adapter with Retractable Pin for CGA320
CGA-346RVPNUTNP	Fill Adapter with Retractable Pin for CGA346
CGA-350RVPNUTNP	Fill Adapter with Retractable Pin for CGA350
CGA-540RVPNUTNP	Fill Adapter with Retractable Pin for CGA540
CGA-580RVPNUTNP	Fill Adapter with Retractable Pin for CGA580
CGA-590RVPNUTNP	Fill Adapter with Retractable Pin for CGA590

Rev: 11/20/15

Large Selection of Inventory of Sherwood Valves ready to ship the same day.

RATERMANN MANUFACTURING, INC.

SHERWOOD MASTER DISTRIBUTOR

INDEX

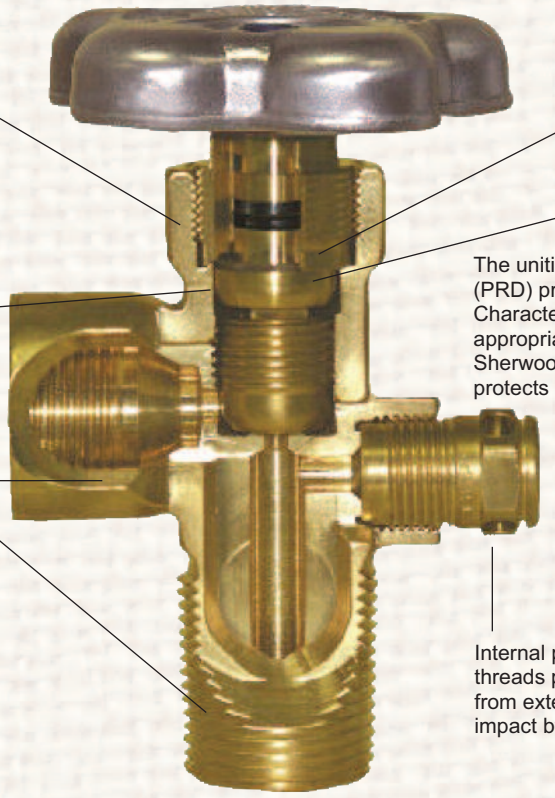
Sherwood Global Valve Features

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Durable forged brass body, precisely machined internal components and design elements meet the most stringent International valve performance standards. Automated assembly and testing processes ensure exceptional quality. All Sherwood GV valves are 100% leak tested.

Metal-to-metal seal below bonnet threads prevents pressure accumulation at top of valve body.

Inlet and Outlet thread configurations are available for a broad spectrum of Customer, Country and Code specifications.



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.

The unitized plug design of the Pressure Relief Device (PRD) provides excellent flow characteristics. Optical Character Recognition technology utilized to verify appropriate burst disc pressure rating. Sherwood's exclusive "webbed washer" design protects burst disc during handling and bulk shipment.

Internal plug threads protected from external impact by design.

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
EN 849	International Standard for Cylinder Valves Design Specifications
AS2473	Australian Standard for Compressed Gas Cylinder Valves
TPED	Transportable Pressure Equipment Directive Modules B & D

DESIGN SPECIFICATIONS		
Maximum Working Pressure	6,000 PSIG	413 BAR
Burst Pressure	15,000 PSIG	1,035 BAR
Operating Temperature	Min: -50˚F Max: 130˚F	-45˚C 55˚C
Storage Temperature	Min: -65˚F Max: 155˚F	-54˚C 68˚C
Leak Rate Internal/External	$1X10^{-3}$ atm cc/s	
Minimum Cycle Life	2,000 Cycles	
Cv Flow Factor	Standard: CO2 / Manifold:	.690 1.23

Replacement Inlet O-ring for Straight Threaded GV Series Industrial and Chrome Plated Valves

Size	Part Number	Material
0.625 UNF	SHW-G208A	BUNA
0.625 UNF	SHW-G208T	PTFE
0.750 UNF	SHW-G210-9	BUNA-N
0.750 UNF	CVO-1T	PTFE
1.125 UN	SHW-G216A	BUNA 70 Durometer
1.125 UN	CVO-2T	PTFE

VALVE SIZING* CHART

Place Valve Thread End of Valve to Match Up to Diameter on the Chart

STEEL CYLINDER GUIDE

For Steel Cylinders 1" NGT TAPERED THREADS

3/4" NGT

1/2" NGT

Typical Steel Cylinder Sizes	Thread Size
D & E Steel Medical Tank, CO^2 2-1/2#, 5#, 10#	1/2"
80 cu. ft. – 330, CO^2 20#, 30#, 40 cu. ft., 50 lb. CO^2 Most other Cap Style Tank	3/4"
	1"

ALUMINUM CYLINDER GUIDE

For Aluminum Cylinders 1.125" UNF STRAIGHT THREADS

.750" UNF

Typical Valve Aluminum Cylinder	Thread Size
Medical Aluminum Cylinder Mw-M4, M6, M7, M9, D, E – 2-1/2# CO^2	.750"
CO^2 50 lb. thru 5 lb.	1.125"

This guide is for a typical valve.

Not all valve and thread sizes are included. Please use this as a general guide.

* These sizes are accurate in printed catalog.

Rev: 1/15/15, 12/19/14

GV Series: Industrial Valves

CGA 022 Oxygen 200 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Description
SHW-GV02240	NO SAFETY
SHW-GV02240CC	NO SAFETY with Cap & Chain

CGA 023 Fuel Gas 200 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Description
SHW-GV02340	NO SAFETY
SHW-GV02340CC	NO SAFETY with Cap & Chain

CGA 024 Oxygen 200 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Description
SHW-GV02440	NO SAFETY
SHW-GV02440CC	NO SAFETY with Cap & Chain

CGA 025 Fuel Gas 200 PSI

1/2 NGT Tapered Thread, Brass

Part Number	Description
SHW-GV02540	NO SAFETY
SHW-GV02540CC	NO SAFETY with Cap & Chain

Gas Tight Brass Plug & Chain Assemblies

- Gas tight two piece plug and chain assembly

Part No.	CGA No.	Description	Gas Tight Seal
FIT-2PC-022	022	Oxygen Std. "B" Hose Size 9/16"-18-RH-Internal	200 P.S.I.G.
FIT-2PC-023	023	Fuel Gas Std. "B" Hose Size 9/16"-18-LH-Internal	200 P.S.I.G.
FIT-2PC-024	024	Oxygen "C" Hose Size 7/8"-14-RH-Internal	200 P.S.I.G.
FIT-2PC-025	025	Fuel Gas "C" Hose Size 7/8"-14-LH-Internal	200 P.S.I.G.

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Ratermann's Oxygen Safe Valve Leak Check

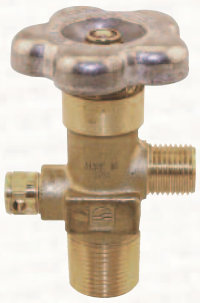
Find your Leaks Fast and Easily with the Extending Tube to Get in the Hard to Reach Areas.

Part # LC-8OZ

Part # LC-1GAL

GV Series: Cylinder Valves

CGA 280 Medical Breathing Mixtures 3,000 PSI



Part # SHW-GV28061-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV28061-28	3000 PSI
SHW-GV28061-32	3360 PSI
SHW-GV28061-35	3775 PSI
SHW-GV28061-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA28061-28	3000 PSI
SHW-GVA28061-32	3360 PSI
SHW-GVA28061-35	3775 PSI
SHW-GVA28061-38	4000 PSI

Part # SHW-GV28061-32-7

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV28061-28-7	3000 PSI
SHW-GV28061-32-7	3360 PSI
SHW-GV28061-35-7	3775 PSI
SHW-GV28061-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA28061-28-7	3000 PSI
SHW-GVA28061-32-7	3360 PSI
SHW-GVA28061-35-7	3775 PSI
SHW-GVA28061-38-7	4000 PSI

GV Series: Cylinder Valves

CGA 296 Industrial Oxygen Mixtures 3,000 PSI

Part # SHW-GV29661-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV29661-28	3000 PSI
SHW-GV29661-32	3360 PSI
SHW-GV29661-35	3775 PSI
SHW-GV29661-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA29661-28	3000 PSI
SHW-GVA29661-32	3360 PSI
SHW-GVA29661-35	3775 PSI
SHW-GVA29661-38	4000 PSI

Part # SHW-GV29661-32-7

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV29661-28-7	3000 PSI
SHW-GV29661-32-7	3360 PSI
SHW-GV29661-35-7	3775 PSI
SHW-GV29661-38-7	4000 PSI

Rev: 1/26/16, 2/7/14

GV Series: Cylinder Valves CGA 320 Carbon Dioxide 3,000 PSI

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Part # SHW-GV32061-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32060	NO SAFETY
SHW-GV32061-28	3000 PSI
SHW-GV32061-32	3360 PSI
SHW-GV32061-35	3775 PSI
SHW-GV32061-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA32061-28	3000 PSI
SHW-GVA32061-32	3360 PSI
SHW-GVA32061-35	3775 PSI
SHW-GVA32061-38	4000 PSI

Part # SHW-GV32041-28

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32040	NO SAFETY
SHW-GV32041-28	3000 PSI
SHW-GV32041-32	3360 PSI
SHW-GV32041-35	3775 PSI
SHW-GV32041-38	4000 PSI

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32081-28	3000 PSI
SHW-GV32081-32	3360 PSI
SHW-GV32081-35	3775 PSI
SHW-GV32081-38	4000 PSI

Part # SHW-GV32051-28LX

1-1/8" UNF Straight Thread, Brass with Lexan Handwheels

Part Number	Safety
SHW-GV32051-28LX	3000 PSI
SHW-GV32051-32LX	3360 PSI
SHW-GV32051-35LX	3775 PSI
SHW-GV32051-38LX	4000 PSI

3/4" UNF Straight Thread, Brass with Lexan Handwheels

Part Number	Safety
SHW-GV32051-28LX-75	3000 PSI
SHW-GV32051-32LX-75	3360 PSI
SHW-GV32051-35LX-75	3775 PSI
SHW-GV32051-38LX-75	4000 PSI

5/8" UNF Straight Thread, Brass with Lexan Handwheels

Part Number	Safety
SHW-GV32051-28LX-62	3000 PSI
SHW-GV32051-32LX-62	3360 PSI
SHW-GV32051-35LX-62	3775 PSI
SHW-GV32051-38LX-62	4000 PSI

Part # SHW-GV32061-32-7

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV32061-28-4	3000 PSI
SHW-GV32061-32-4	3360 PSI
SHW-GV32061-35-4	3775 PSI
SHW-GV32061-38-4	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV32061-28-7	3000 PSI
SHW-GV32061-32-7	3360 PSI
SHW-GV32061-35-7	3775 PSI
SHW-GV32061-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA32061-28-7	3000 PSI
SHW-GVA32061-32-7	3360 PSI
SHW-GVA32061-35-7	3775 PSI
SHW-GVA32061-38-7	4000 PSI

Part # SHW-GV32081-28

1" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA32081-28	3000 PSI
SHW-GVA32081-32	3360 PSI
SHW-GVA32081-35	3775 PSI
SHW-GVA32081-38	4000 PSI

Part # SHW-GV32051-28

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV32051-28	3000 PSI
SHW-GV32051-32	3360 PSI
SHW-GV32051-35	3775 PSI
SHW-GV32051-38	4000 PSI

3/4" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV32051-28-75	3000 PSI
SHW-GV32051-32-75	3360 PSI
SHW-GV32051-35-75	3775 PSI
SHW-GV32051-38-75	4000 PSI

Gas Tight Brass Plug & Chain Assemblies for CGA 320

- Gas tight one piece plug and chain assembly

Part No.	CGA No.	Description	Gas Tight Seal
FIT-OPC-320	320	Carbon Dioxide-RH-Internal	3000 P.S.I.G

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Cylinder Siphon Tubes

Part # CST-C

Siphon tubes are constructed from 3/8" type "K" copper tube. Each tube is fitted with a 1/4" male NPT brass fitting for easy attachment to most brass valves on the market today. Standard length is 53" OAL to fit most 250-300 cu. ft. cylinders. All ends are cut at 45° angle to allow for unrestricted flow.

Stainless Steel siphon tubes are available for higher purity gases. Custom sizes are available upon request. Call Customer Service for details.

Cylinder Siphon Tubes

Part #	Description
CST-S	Standard Siphon Tube, 53" OAL
CST-C	Standard Siphon Tube, 48" OAL
CST-C26	Standard Siphon Tube, 26" OAL

Rev: 1/26/16, 2/7/14

GV Series: Cylinder Valves CGA 326 Nitrous Oxide 3,000 PSI

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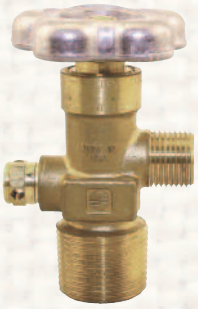
Part # SHW-GV32661-28

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32661-28	3000 PSI
SHW-GV32661-32	3360 PSI
SHW-GV32661-35	3775 PSI
SHW-GV32661-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA32661-28	3000 PSI
SHW-GVA32661-32	3360 PSI
SHW-GVA32661-35	3775 PSI
SHW-GVA32661-38	4000 PSI



Part # SHW-GV32661-32

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32641-28	3000 PSI
SHW-GV32641-32	3360 PSI
SHW-GV32641-35	3775 PSI
SHW-GV32641-38	4000 PSI

1 NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV32681-28	3000 PSI
SHW-GV32681-32	3360 PSI
SHW-GV32681-35	3775 PSI
SHW-GV32681-38	4000 PSI

Part # SHW-GV32681-32

1-1/8 UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV32651-28LX	3000 PSI
SHW-GV32651-32LX	3360 PSI
SHW-GV32651-35LX	3775 PSI
SHW-GV32651-38LX	4000 PSI

1-1/8 UNF Straight Thread, Chrome with Lexan Handwheel

Part Number	Safety
SHW-GVA32651-28LX	3000 PSI
SHW-GVA32651-32LX	3360 PSI
SHW-GVA32651-35LX	3775 PSI
SHW-GVA32651-38LX	4000 PSI

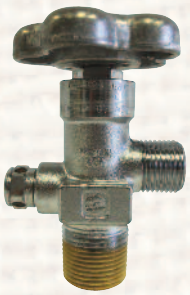
Part # SHW-GV32661-32-7

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV32661-28-7	3000 PSI
SHW-GV32661-32-7	3360 PSI
SHW-GV32661-35-7	3775 PSI
SHW-GV32661-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA32661-28-7	3000 PSI
SHW-GVA32661-32-7	3360 PSI
SHW-GVA32661-35-7	3775 PSI
SHW-GVA32661-38-7	4000 PSI



Part # SHW-GVA32661-32

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV32661-28-4	3000 PSI
SHW-GV32661-32-4	3360 PSI
SHW-GV32661-35-4	3775 PSI
SHW-GV32661-38-4	4000 PSI

Part # SHW-GV32661-32-4

3/4" UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV32651-28LX-75	3000 PSI
SHW-GV32651-32LX-75	3360 PSI
SHW-GV32651-35LX-75	3775 PSI
SHW-GV32651-38LX-75	4000 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GV32625E1-28	3000 PSI
SHW-GV32625E1-32	3360 PSI
SHW-GV32625E1-35	3775 PSI
SHW-GV32625E1-38	4000 PSI

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Gas Tight Brass Plug & Chain Assemblies for CGA 326 Nitrous Oxide

- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly

Part # FIT-2PC-326 Part # FIT-OPC-326

CGA 326 – 3000 P.S.I.G.
Nitrous Oxide-RH-Internal

Part # LC-1GAL

and Easily with the Extending Tube to Get in the Hard to Reach Areas.

Ratermann's Oxygen Safe Valve Leak Check

Rev: 1/26/16, 2/7/14

GV Series: CGA 346 Breathing Air 3,000 PSI

Part # SHW-GV34681-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV34661-28	3000 PSI
SHW-GV34661-32	3360 PSI
SHW-GV34661-35	3775 PSI
SHW-GV34661-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA34661-28	3000 PSI
SHW-GVA34661-32	3360 PSI
SHW-GVA34661-35	3775 PSI
SHW-GVA34661-38	4000 PSI

Part # SHW-GV34651-32

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV34661-28-7	3000 PSI
SHW-GV34661-32-7	3360 PSI
SHW-GV34661-35-7	3775 PSI
SHW-GV34661-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA34661-28-7	3000 PSI
SHW-GVA34661-32-7	3360 PSI
SHW-GVA34661-35-7	3775 PSI
SHW-GVA34661-38-7	4000 PSI

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV34661-28-4	3000 PSI
SHW-GV34661-32-4	3360 PSI
SHW-GV34661-35-4	3775 PSI
SHW-GV34661-38-4	4000 PSI

Part # SHW-GV34661-32-7

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV34641-28	3000 PSI
SHW-GV34641-32	3360 PSI
SHW-GV34641-35	3775 PSI
SHW-GV34641-38	4000 PSI

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV34681-28	3000 PSI
SHW-GV34681-32	3360 PSI
SHW-GV34681-35	3775 PSI
SHW-GV34681-38	4000 PSI

Part # SHW-GV34661-32-7

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV34651-28	3000 PSI
SHW-GV34651-32	3360 PSI
SHW-GV34651-35	3775 PSI
SHW-GV34651-38	4000 PSI

1-1/8" UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV34651-28LX	3000 PSI
SHW-GV34651-32LX	3360 PSI
SHW-GV34651-35LX	3775 PSI
SHW-GV34651-38LX	4000 PSI

Gas Tight Brass Plug & Chain Assemblies for CGA 346

Part # FIT-2PC-346

CGA 346 – 3000 P.S.I.G. – Air-RH-Internal

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call for details.

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

GVHM Series: CGA 347 Breathing Air 3,001-5,500 PSI

Part # SHW-GVHM34761-55

3/4" NGT Tapered Thread Brass

Part Number	Safety
SHW-GVHM34761-48	5000 PSI
SHW-GVHM34761-55	5833 PSI
SHW-GVHM34761-65	6750 PSI
SHW-GVHM34761-71	7500 PSI
SHW-GVHM34761-78	8333 PSI

3/4" NGT +24 Over Size Tapered Thread Brass

Part Number	Safety
SHW-GVHM34761-48-24	5000 PSI
SHW-GVHM34761-55-24	5833 PSI
SHW-GVHM34761-65-24	6750 PSI
SHW-GVHM34761-71-24	7500 PSI

3/4" NGT +24 Over Size Tapered Thread Chrome

Part Number	Safety
SHW-GVHMA34761-55-24	5833 PSI
SHW-GVHMA34761-65-24	6750 PSI
SHW-GVHMA34761-71-24	7500 PSI

Part # SHW-GVHM34761-65-24

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM34725E1-65	6750 PSI
SHW-GVHM34725E1-71	7500 PSI
SHW-GVHM34725E1-78	8333 PSI

European Inlet 25E, Chrome

Part Number	Safety
SHW-GVHMA34725E0	NO SAFETY
SHW-GVHMA34725E1-65	6750 PSI
SHW-GVHMA34725E1-71	7500 PSI
SHW-GVHMA34725E1-78	8333 PSI

Part # SHW-GVHM3472SE1-71

Gas Tight Brass Plug & Chain Assemblies for CGA 347

- Gas tight two piece plug and chain assembly

Part No.	CGA No.	Description	Gas Tight Seal
FIT-2PC-347	347	Air-RH-Internal Type 316	3001-5500 P.S.I.G.
FIT-2PC-347SS	347	Air-RH-Internal Type 316 Stainless Steel	3001-5500 P.S.I.G.

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9H-48	Sherwood GV Series Plug Style Safety 5000 PSI
SHW-P625-19N9H-55	Sherwood GV Series Plug Style Safety 5833 PSI
SHW-P625-19N9H-65	Sherwood GV Series Plug Style Safety 6750 PSI
SHW-P625-19N9H-71	Sherwood GV Series Plug Style Safety 7500 PSI
SHW-P625-19N9H-78	Sherwood GV Series Plug Style Safety 8333 PSI
SHW-P625-19N9H-85	Sherwood GV Series Plug Style Safety 9000 PSI
SHW-P625-19N9H-95	Sherwood GV Series Plug Style Safety 10K PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Rev: 1/26/16, 2/7/14

GV Series: Cylinder Valves CGA 350 Hydrogen/Methane 3,000 PSI

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Part # SHW-GV35065-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV35060	NO SAFETY
SHW-GV35065-28	3000 PSI 212° fuse
SHW-GV35065-32	3360 PSI 212° fuse
SHW-GV35065-35	3775 PSI 212° fuse
SHW-GV35065-38	4000 PSI 212° fuse

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA35065-28	3000 PSI 212° fuse
SHW-GVA35065-32	3360 PSI 212° fuse
SHW-GVA35065-35	3775 PSI 212° fuse
SHW-GVA35065-38	4000 PSI 212° fuse

Part # SHW-GV35040

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV35040	NO SAFETY
SHW-GV35045-28	3000 PSI 212° fuse
SHW-GV35045-32	3360 PSI 212° fuse
SHW-GV35045-35	3775 PSI 212° fuse
SHW-GV35045-38	4000 PSI 212° fuse

Gas Tight Brass Plug & Chain Assemblies for CGA 350

- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly

Part # FIT-2PC-350

CGA 350 – 3000 P.S.I.G. Hydrogen, Methane-LH-Internal

Part # FIT-OPC-350

Part # SHW-GV35055-28

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV35055-28	3000 PSI 212° fuse
SHW-GV35055-32	3360 PSI 212° fuse
SHW-GV35055-35	3775 PSI 212° fuse
SHW-GV35055-38	4000 PSI 212° fuse

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV35065-28-4	3000 PSI 212° fuse
SHW-GV35065-32-4	3360 PSI 212° fuse
SHW-GV35065-35-4	3775 PSI 212° fuse
SHW-GV35065-38-4	4000 PSI 212° fuse

Part # SHW-GV35085-35

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV35065-28-7	3000 PSI 212° fuse
SHW-GV35065-32-7	3360 PSI 212° fuse
SHW-GV35065-35-7	3775 PSI 212° fuse
SHW-GV35065-38-7	4000 PSI 212° fuse

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV35085-35	3775 PSI 212° fuse
SHW-GV35085-38	4000 PSI 212° fuse

European Inlet 25E, Brass

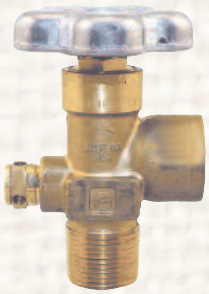
Part Number	Safety
SHW-GV35025E5-28	3000 PSI 212° fuse
SHW-GV35025E5-32	3360 PSI 212° fuse
SHW-GV35025E5-35	3775 PSI 212° fuse
SHW-GV35025E5-38	4000 PSI 212° fuse

Replacement Safety Reliefs

Color-Coded Safeties with 212˚ Fuse

Part Number	Sherwood GV Series Plug Style Safety
SHW-P625-19C9-28W	Sherwood GV Series Plug Style Safety 212˚ Fuse 3000 PSI
SHW-P625-19C9-32W	Sherwood GV Series Plug Style Safety 212˚ Fuse 3360 PSI
SHW-P625-19C9-35W	Sherwood GV Series Plug Style Safety 212˚ Fuse 3775 PSI
SHW-P625-19C9-38W	Sherwood GV Series Plug Style Safety 212˚ Fuse 4000 PSI

GV Series: Cylinder Valves CGA 500 Medical Mixtures 3,000 PSI



Part # SHW-GV50061-32-7

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV50061-28	3000 PSI
SHW-GV50061-32	3360 PSI
SHW-GV50061-35	3775 PSI
SHW-GV50061-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA50061-28	3000 PSI
SHW-GVA50061-32	3360 PSI
SHW-GVA50061-35	3775 PSI
SHW-GVA50061-38	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV50061-28-7	3000 PSI
SHW-GV50061-32-7	3360 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA50061-28-7	3000 PSI
SHW-GVA50061-32-7	3360 PSI
SHW-GVA50061-35-7	3775 PSI
SHW-GVA50061-38-7	4000 PSI

Replacement Safety Reliefs

Part Number	Sherwood GV Series Plug Style Safety
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Rev: 1/26/16, 2/7/14

GV & GVT Acetylene Series: Acetylene Cylinder Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

CGA 510 Acetylene 500 PSI

CGA 510 Acetylene Valve P.O.L.

Pt # SHW-GV51060

CGA 510 Vertical

Pt # SHW-GVT51060

Part #	ACETYLENE VALVE CGA 510
SHW-GV51040	Acetylene Valve CGA 510 P.O.L. 1/2″-14 NGT
SHW-GV51060	Acetylene Valve CGA 510 P.O.L. 3/4″ NGT
SHW-GV51080	Acetylene Valve CGA 510 P.O.L. 1″-11 1/2 NGT
SHW-GVT51060	Vertical CGA 510 3/4″ NGT, No Safety HW Operated

CGA 300 Ethyl Chlorides (R160) Formally Commerical Acetylene 500 PSI

CGA 300 Acetylene Commercial Valve with double O-Ring

Pt # SHW-GV30060

Part #	ACETYLENE VALVE COMMERCIAL CGA 300
SHW-GV30040	Acetylene Valve Commercial CGA 300 1/2″ NGT
SHW-GV30060	Acetylene Valve Commercial CGA 300 3/4″ NGT
SHW-GV30080	Acetylene Valve Commercial CGA 300 1″ NGT
SHW-GVT30060	Vertical CGA 300 3/4″ NGT, HW Operated

AV & AV-HW Acetylene Series: CGA 200 "MC" Size Acetylene 500 PSI

Packed Valve for "MC" Cylinders up to 10 cubic feet capacity

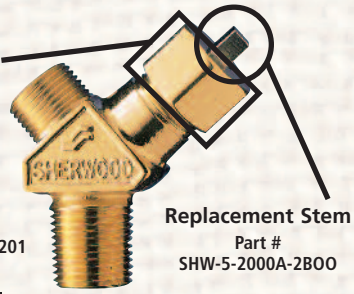
Pt # SHW-AVMC201HW

Part #	ACETYLENE VALVE MC
SHW-AVMC201HW	Acetylene Valve MC 3/8″ NGT w/Hand wheel

Acetylene Valve MC

Packed Valve for "MC" Cylinders up to 10 cubic feet capacity

Replacement Nut Part # SHW-2000-9B35



Pt # SHW-AVMC201

Replacement Stem Part # SHW-5-2000A-2BOO

Part #	ACETYLENE VALVE MC
SHW-AVMC201	Acetylene Valve MC 3/8″ NGT

AV & AV-HW Acetylene Series: CGA 520 "B" Size Acetylene 500 PSI

Packed Valve for "B" Cylinders up to 40 cubic feet capacity

Pt # SHW-AVB521HW

Part #	ACETYLENE VALVE B
SHW-AVB521HW	Acetylene Valve B 3/8″ NGT w/Handwheel
SHW-AVB521HWM	Acetylene Valve Manifold 3/8″ NGT w/Handwheel

Acetylene Valve B

Packed Valve for "B" Cylinders up to 40 cubic feet capacity

Pt # SHW-AVB521

Part #	ACETYLENE VALVE B
SHW-AVB521	Acetylene Valve B 3/8″ NGT
SHW-AVB521S	Acetylene Valve Manifold 3/8″ NGT
SHW-AVB521SM	Acetylene Valve Manifold 3/8″ NGT, Stainless Steel Stem
SHW-AV5160WB	Acetylene Valve Manifold CGA 510, 3/4″ NGT WB Style

Part # SHW-AV5160WB

FEATURES & BENEFITS Pt #SHW-AV5160WB

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

Gas Tight Brass Plug & Chain Assemblies for CGA 510 Acetylene

- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly

Part # FIT-2PC-510

Part # FIT-OPC-510

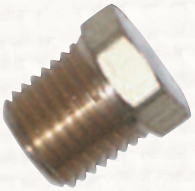
CGA 510
Acetylene-LH-External – 250 P.S.I.G.
Propane-LH-External – 500 P.S.I.G.

CGA 410 Canadian Standard

Part #	ACETYLENE VALVE CANADIAN STANDARD CGA 410
SHW-GV41060	Canadian Standard Acetylene Valve CGA 410 3/4″ NGT

Fusible Plugs

Part #	Material	Thread Size	Fuse Metal
PLG-A18165-B	Brass	1/8″ NPT	165° F
PLG-A18212-B	Brass	1/8″ NPT	212° F
PLG-A14165-B	Brass	1/4″ NPT	165° F
PLG-A14212-B	Brass	1/4″ NPT	212° F
PLG-A38165-B	Brass	3/8″ NPT	165° F
PLG-A38212-B	Brass	3/8″ NPT	212° F



Rev: 3/22/16, 3/15/16, 10/23/14, 6/3/14

GV Series: Cylinder Valves CGA 540 Oxygen 3,000 PSI cont. on 34A-22

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Part # SHW-GV54061-32

Part # SHW-GVA54061-32

Part # SHW-GV54081-32

Part # SHW-GV54041-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV54060	NO SAFETY
SHW-GV54061-28	3000 PSI
SHW-GV54061-32	3360 PSI
SHW-GV54061-35	3775 PSI
SHW-GV54061-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA54061-28	3000 PSI
SHW-GVA54061-32	3360 PSI
SHW-GVA54061-35	3775 PSI
SHW-GVA54061-38	4000 PSI

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV54081-28	3000 PSI
SHW-GV54081-32	3360 PSI
SHW-GV54081-35	3775 PSI
SHW-GV54081-38	4000 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV54040	NO SAFETY
SHW-GV54041-28	3000 PSI
SHW-GV54041-32	3360 PSI
SHW-GV54041-35	3775 PSI
SHW-GV54041-38	4000 PSI

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV54051-28	3000 PSI
SHW-GV54051-32	3360 PSI
SHW-GV54051-35	3775 PSI
SHW-GV54051-38	4000 PSI

1-1/8" UNF Straight Thread, Chrome

Part Number	Safety
SHW-GVA54051-32	3360 PSI
SHW-GVA54051-35	3775 PSI
SHW-GVA54051-38	4000 PSI

Part # SHW-GV54051-32

Part # SHW-GVA54051-32

Part # SHW-GV54051-28LX

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV54061-28-7	3000 PSI
SHW-GV54061-32-7	3360 PSI
SHW-GV54061-35-7	3775 PSI
SHW-GV54061-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA54061-28-7	3000 PSI
SHW-GVA54061-32-7	3360 PSI
SHW-GVA54061-35-7	3775 PSI
SHW-GVA54061-38-7	4000 PSI

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV54061-28-4	3000 PSI
SHW-GV54061-32-4	3360 PSI
SHW-GV54061-35-4	3775 PSI
SHW-GV54061-38-4	4000 PSI

1/2" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA54041-28	3000 PSI
SHW-GVA54041-32	3360 PSI
SHW-GVA54041-35	3775 PSI
SHW-GVA54041-38	4000 PSI

1-1/8" UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV54051-28LX	3000 PSI
SHW-GV54051-32LX	3360 PSI
SHW-GV54051-35LX	3775 PSI
SHW-GV54051-38LX	4000 PSI

1-1/8" UNF Straight Thread, Chrome with Lexan Handwheel

Part Number	Safety
SHW-GVA54051-32LX	3360 PSI
SHW-GVA54051-35LX	3775 PSI
SHW-GVA54051-38LX	4000 PSI

Products to Help Seal and Maintain Your Valve Connections

PTFE Paste for Pipe Threads
Part # OXY-OC3-4OZ

Find your Leaks Fast and Easily

with the Extending Tube to Get in the Hard to Reach Areas.

Ratermann's Oxygen Safe Valve Leak Check

Pt # LC-8OZ

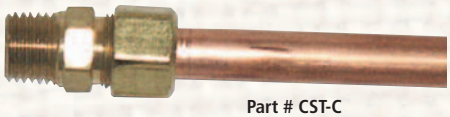
Pt # LC-1GAL

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Cylinder Siphon Tubes



Part # CST-C

Custom sizes are available upon request. Call Customer Service for details.

Part #	Description
CST-S	Standard Siphon Tube, 53" OAL
CST-C	Standard Siphon Tube, 48" OAL
CST-C26	Standard Siphon Tube, 26" OAL

Rev: 1/26/16, 2/7/14

GV Series: Cylinder Valves CGA 540 Oxygen 3,000 PSI

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Part # SHW-GV54051-35-75

3/4" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV54051-28-75	3000 PSI
SHW-GV54051-32-75	3360 PSI
SHW-GV54051-35-75	3775 PSI
SHW-GV54051-38-75	4000 PSI

3/4" UNF Straight Thread, Chrome

Part Number	Safety
SHW-GVA54051-28-75	3000 PSI
SHW-GVA54051-32-75	3360 PSI
SHW-GVA54051-35-75	3775 PSI
SHW-GVA54051-38-75	4000 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GV54025E0	NO SAFETY
SHW-GV54025E1-28	3000 PSI
SHW-GV54025E1-32	3360 PSI
SHW-GV54025E1-35	3775 PSI
SHW-GV54025E1-38	4000 PSI

Part # SHW-GVA54051-28-75

3/4" UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV54051-28LX-75	3000 PSI
SHW-GV54051-32LX-75	3360 PSI
SHW-GV54051-35LX-75	3775 PSI
SHW-GV54051-38LX-75	4000 PSI
SHW-GV54051-48LX-75	5000 PSI

3/4" UNF Straight Thread, Chrome with Lexan Handwheel

Part Number	Safety
SHW-GVA54051-28LX-75	3000 PSI
SHW-GVA54051-32LX-75	3360 PSI
SHW-GVA54051-35LX-75	3775 PSI
SHW-GVA54051-38LX-75	4000 PSI

European Inlet 25E, Chrome

Part Number	Safety
SHW-GVA54025E1-28	3000 PSI
SHW-GVA54025E1-32	3360 PSI
SHW-GVA54025E1-35	3775 PSI
SHW-GVA54025E1-38	4000 PSI

Shoulder Medical Oxygen USP Cylinder Labels

Custom Imprint with Your Company Name
see page 6A-3

Gas Tight Brass Plug & Chain Assemblies for CGA 540 Oxygen

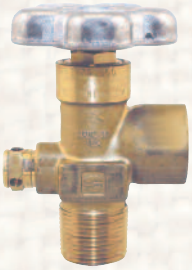
- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly

Part # FIT-2PC-540

Part # FIT-OPC-540

CGA 540 – 3000 P.S.I.G.
Oxygen-RH-Internal

GV Series: Cylinder Valves CGA 555 Propane 3,000 PSI



Part # SHW-GV55561-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV55561-28	3000 PSI
SHW-GV55561-32	3360 PSI
SHW-GV55561-35	3775 PSI
SHW-GV55561-38	4000 PSI

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV55551-28	3000 PSI
SHW-GV55551-32	3360 PSI
SHW-GV55551-35	3775 PSI
SHW-GV55551-38	4000 PSI

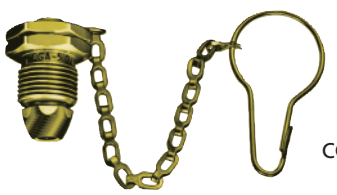
Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Gas Tight Brass Plug & Chain Assemblies for CGA 555 Propane

- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly



Part # FIT-2PC-555

CGA 555 – 3000 P.S.I.G.
Propane
(Liquid Withdrawal)
LH-Internal

Part # FIT-OPC-555

Rev: 1/26/16, 1/6/16, 2/7/14

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

GV Series: Cylinder Valves CGA 577 Oxygen 3,001-4,000 PSI

Part # SHW-GV57761-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV57761-32	3360 PSI
SHW-GV57761-43	4450 PSI
SHW-GV57761-47	4917 PSI
SHW-GV57761-55	5833 PSI
SHW-GV57761-65	6750 PSI

GV Series: Cylinder Valves CGA 580 Inert 3,000 PSI

Part # SHW-GV58061-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV58060	NO SAFETY
SHW-GV58061-28	3000 PSI
SHW-GV58061-32	3360 PSI
SHW-GV58061-35	3775 PSI
SHW-GV58061-38	4000 PSI
SHW-GV58061-48	5000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA58061-28	3000 PSI
SHW-GVA58061-32	3360 PSI
SHW-GVA58061-35	3775 PSI
SHW-GVA58061-38	4000 PSI

Part # SHW-GVA58061-32

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV58040	NO SAFETY
SHW-GV58041-28	3000 PSI
SHW-GV58041-32	3360 PSI
SHW-GV58041-35	3775 PSI
SHW-GV58041-38	4000 PSI

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV58081-28	3000 PSI
SHW-GV58081-32	3360 PSI
SHW-GV58081-35	3775 PSI
SHW-GV58081-38	4000 PSI

Part # SHW-GV58041-38

1-1/8" UNF Straight Thread, Brass

Part Number	Safety
SHW-GV58051-28	3000 PSI
SHW-GV58051-32	3360 PSI
SHW-GV58051-35	3775 PSI
SHW-GV58051-38	4000 PSI

3/4" UNF Straight Thread, Brass with Lexan Handwheel

Part Number	Safety
SHW-GV58051-28LX-75	3000 PSI
SHW-GV58051-32LX-75	3360 PSI
SHW-GV58051-48LX-75	5000 PSI

Part # SHW-GV58051-28

Part # SHW-GV58051-28LX-75

Part # SHW-GV58061-38-4

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV58061-28-7	3000 PSI
SHW-GV58061-32-7	3360 PSI
SHW-GV58061-35-7	3775 PSI
SHW-GV58061-38-7	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVA58061-28-7	3000 PSI
SHW-GVA58061-32-7	3360 PSI
SHW-GVA58061-35-7	3775 PSI
SHW-GVA58061-38-7	4000 PSI

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV58061-28-4	3000 PSI
SHW-GV58061-32-4	3360 PSI
SHW-GV58061-35-4	3775 PSI
SHW-GV58061-38-4	4000 PSI

1-1/8" UNF Straight Thread, Brass with Lexan Handwheel

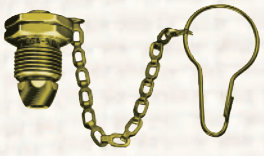
Part Number	Safety
SHW-GV58051-28LX	3000 PSI
SHW-GV58051-32LX	3360 PSI
SHW-GV58051-35LX	3775 PSI
SHW-GV58051-38LX	4000 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GV58025E0	NO SAFETY
SHW-GV58025E1-28	3000 PSI
SHW-GV58025E1-32	3360 PSI
SHW-GV58025E1-35	3775 PSI
SHW-GV58025E1-38	4000 PSI

Gas Tight Brass Plug & Chain Assemblies for CGA 580

- Gas tight two piece plug and chain assembly
- Gas tight one piece plug and chain assembly



Part # FIT-2PC-580

Part # FIT-OPC-580

CGA 580 Inert – 3000 P.S.I.G.
Argon, Helium, Nitrogen-RH-External

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

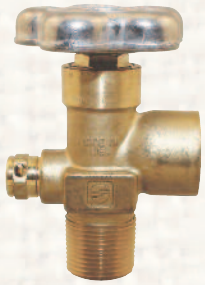
Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Rev: 1/26/16, 2/7/14

GV Series: Cylinder Valves

CGA 590 Sulfur Hexafluoride 3,000 PSI

formerly Industrial Air



Part # SHW-GV59061-32

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV59061-28	3000 PSI
SHW-GV59061-32	3360 PSI
SHW-GV59061-35	3775 PSI
SHW-GV59061-38	4000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVA59061-28	3000 PSI
SHW-GVA59061-32	3360 PSI
SHW-GVA59061-35	3775 PSI
SHW-GVA59061-38	4000 PSI

3/4" NGT +4 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV59061-28-4	3000 PSI
SHW-GV59061-32-4	3360 PSI
SHW-GV59061-35-4	3775 PSI
SHW-GV59061-38-4	4000 PSI

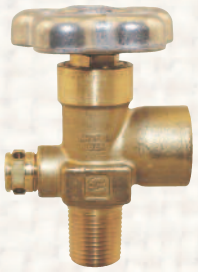
Part # SHW-GV59061-32-7

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV59061-28-7	3000 PSI
SHW-GV59061-32-7	3360 PSI
SHW-GV59061-35-7	3775 PSI
SHW-GV59061-38-7	4000 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV59041-32	3360 PSI



Part # SHW-GV59041-32

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV59081-32	3360 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GV59025E0	NO SAFETY
SHW-GV59025E1-28	3000 PSI
SHW-GV59025E1-32	3360 PSI
SHW-GV59025E1-35	3775 PSI
SHW-GV59025E1-38	4000 PSI

Gas Tight Brass Plug & Chain Assemblies for CGA 590

- Gas tight one piece plug and chain assembly

Part No.	CGA No.	Description	Gas Tight Seal
FIT-OPC-590	590	Industrial Air-LH-External	3000 P.S.I.G.

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Rev: 1/26/16, 2/7/14

GV Series: CGA 660

Refrigerant Gases 3,000 PSI

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Part # SHW-GV66061-28

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GV66061-28	3000 PSI
SHW-GV66061-32	3360 PSI
SHW-GV66061-35	3775 PSI
SHW-GV66061-38	4000 PSI

3/4" NGT +7 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GV66061-28-7	3000 PSI
SHW-GV66061-32-7	3360 PSI
SHW-GV66061-35-7	3775 PSI
SHW-GV66061-38-7	4000 PSI

GVHM Series: CGA 677 Inert 5,501-7,500 PSI

Part # SHW-GVHM67761-85

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM67761-85	9000 PSI
SHW-GVHM67761-95	10,000 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVHMA67761-85	9000 PSI
SHW-GVHMA67761-95	10,000 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM67741-95	10,000 PSI

Part # SHW-GVHM67781-95

1" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM67781-95	10,000 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM67725E1-85	9000 PSI
SHW-GVHM67725E1-95	10,000 PSI

European Inlet 25E, Chrome

Part Number	Safety
SHW-GVHMA67725E1-85	9000 PSI
SHW-GVHMA67725E1-95	10,000 PSI

Cylinder Siphon Tubes

Part # CST-C

Stainless Steel siphon tubes are available for higher purity gases. Custom sizes are available upon request. Call Customer Service for details.

Part #	Description
CST-S	Standard Siphon Tube, 53" OAL
CST-C	Standard Siphon Tube, 48" OAL
CST-C26	Standard Siphon Tube, 26" OAL

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9H-48	Sherwood GV Series Plug Style Safety 5000 PSI
SHW-P625-19N9H-55	Sherwood GV Series Plug Style Safety 5833 PSI
SHW-P625-19N9H-65	Sherwood GV Series Plug Style Safety 6750 PSI
SHW-P625-19N9H-71	Sherwood GV Series Plug Style Safety 7500 PSI
SHW-P625-19N9H-78	Sherwood GV Series Plug Style Safety 8333 PSI
SHW-P625-19N9H-85	Sherwood GV Series Plug Style Safety 9000 PSI
SHW-P625-19N9H-95	Sherwood GV Series Plug Style Safety 10K PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

GVHM Series: CGA 680 Inert 3,001-5,500 PSI

Part # SHW-GVHM68060

Part # SHW-GVHM68061-48

Part # SHW-GVHM68061-65-24

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM68060	NO SAFETY
SHW-GVHM68061-48	5000 PSI
SHW-GVHM68061-55	5833 PSI
SHW-GVHM68065-55	5833 PSI 212° fuse
SHW-GVHM68061-65	6750 PSI
SHW-GVHM68061-78	8333 PSI

3/4" NGT +24 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GVHM68061-48-24	5000 PSI
SHW-GVHM68061-55-24	5833 PSI
SHW-GVHM68061-65-24	6750 PSI

1/2" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM68040	NO SAFETY

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM68025E1-55	5833 PSI
SHW-GVHM68025E1-65	6750 PSI
SHW-GVHM68025E1-78	8333 PSI

GVHM Series: CGA 702 Air 5,501-7,500 PSI

Part # SHW-GVHM70261-85

Part # SHW-GVHM70261-95

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM70261-85	9000 PSI
SHW-GVHM70261-95	10,000 PSI

3/4" NGT +24 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GVHM70261-85-24	9000 PSI
SHW-GVHM70261-95-24	10,000 PSI

3/4" NGT +24 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVHMA70261-85-24	9000 PSI
SHW-GVHMA70261-95-24	10,000 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM70225E1-85	9000 PSI
SHW-GVHM70225E1-95	10,000 PSI

European Inlet 25E, Chrome

Part Number	Safety
SHW-GVHMA70225E0	NO SAFETY
SHW-GVHMA70225E1-85	9000 PSI
SHW-GVHMA70225E1-95	10,000 PSI

GVHM Series: CGA 695 Hydrogen / Methane 3,001-5,500 PSI

Part # SHW-GVHM69565-55

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM69565-48	5000 PSI 212° fuse
SHW-GVHM69565-55	5833 PSI 212° fuse
SHW-GVHM69565-65	6750 PSI 212° fuse

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM69525E5-48	5000 PSI 212° fuse
SHW-GVHM69525E5-55	5833 PSI 212° fuse

GVHM Series: CGA 703 Hydrogen / Methane 5,501-7,500 PSI

Part # SHW-GVHM70361-95

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM70361-95	10,000 PSI
SHW-GVHM70365-95	10,000 PSI 212° fuse

GVHM Series: CGA 701 Oxygen 4,001-5,500 PSI

Part # SHW-GVHM70161-95

3/4" NGT Tapered Thread, Brass

Part Number	Safety
SHW-GVHM70161-65	6750 PSI
SHW-GVHM70161-95	10,000 PSI

3/4" NGT +24 Over Size Tapered Thread, Brass

Part Number	Safety
SHW-GVHM70161-65-24	6750 PSI
SHW-GVHM70161-95-24	10,000 PSI

3/4" NGT +24 Over Size Tapered Thread, Chrome

Part Number	Safety
SHW-GVHMA70161-65-24	6750 PSI

3/4" NGT Tapered Thread, Chrome

Part Number	Safety
SHW-GVHMA70161-65	6750 PSI

European Inlet 25E, Brass

Part Number	Safety
SHW-GVHM70125E1-65	6750 PSI

European Inlet 25E, Chrome

Part Number	Safety
SHW-GVHMA70125E1-65	6750 PSI

Replacement Safety Reliefs

Part Number	Sherwood GV Series
SHW-P625-19N9H-48	Plug Style Safety 5000 PSI
SHW-P625-19N9H-55	Plug Style Safety 5833 PSI
SHW-P625-19N9H-65	Plug Style Safety 6750 PSI
SHW-P625-19N9H-71	Plug Style Safety 7500 PSI
SHW-P625-19N9H-78	Plug Style Safety 8333 PSI
SHW-P625-19N9H-85	Plug Style Safety 9000 PSI
SHW-P625-19N9H-95	Plug Style Safety 10K PSI

Part Number	Sherwood GV Series Plug Style Safety
SHW-P625-19C9H-48W	212° Fuse 5000 PSI
SHW-P625-19C9H-55W	212° Fuse 5833 PSI
SHW-P625-19C9H-65W	212° Fuse 6750 PSI
SHW-P625-19C9H-95W	212° Fuse 10,000 PSI

Replacement fusible plugs also available.
Old cap style available upon request.

Rev: 1/26/16, 2/7/14, 7/1/13

REPAIR INSTRUCTIONS FOR GV SERIES INDUSTRIAL AND CHROME PLATED VALVES

DISASSEMBLY OF VALVE

1. Place the valve assembly into a vise or similar holding fixture, taking care not to damage the inlet or outlet threads. The holding fixture must securely grip the valve body on the wrench flats so that no damage is done to the internal bores, external threads, outlet, or pressure relief device.
2. Chamber
    a. Using a 13 mm socket, remove the handwheel nut from the handwheel by turning it counter clockwise.
    b. Remove the handwheel from the stem square.
    c. Using an 11/16″ socket wrench or hex box wrench, remove the bonnet by turning it counter clockwise. The stem subassembly with o-ring and back-up o-ring may remove with the bonnet. If not, remove the stem subassembly from the valve after the bonnet.
    d. Being careful not to scratch the bonnet sealing surface in the valve body, use a square drive to remove the lower plug from the valve chamber, by turning it counter clockwise.
3. Pressure Relief Device
    a. Being careful not to scratch the sealing surface of the valve body, remove the pressure relief device by turning it counter clockwise using a 5/8″ hex box wrench or socket.

INSPECTION OF VALVE AND COMPONENTS

1. Valve Body
    a. Inspect the valve body chamber for dirt, debris or damage. Where possible, blow out the valve body chamber using clean, dry, Compressed Air or Nitrogen to remove any foreign particles.
    b. If the valve body is damaged, do not attempt to repair. Order a new valve assembly.
2. Components
    a. Always discard the bonnet and stem subassembly and the lower plug. Order replacement parts. **NOTE**: The lower plug replacement must correspond with the valve body and its relative application. For example, standard valves have a .125″ or .156″ through hole in the body which uses a nylon seat diameter that is relative to that size, part number 1400-40. Carbon dioxide and manifold valves – except for oxygen – have a .272″ through hole in the body and use a nylon seat that is relative to that size, part number 1400-40A.
    b. Handwheels should only be reused if in good condition. Discard handwheels if damaged.
    c. Inspect the pressure relief device threads for damage. Inspect the rupture disc and the webbed washer for scratches. Discard this component if damaged and order replacement parts.

ASSEMBLY OF VALVE

1. Chamber
    a. Apply 3 dabs of lubricant around the perimeter of the lower plug threads, approximating the size of a pencil eraser for each. Locate lubricant toward the lower most threads closest to the crimped seat but using care not to get lubricant on the nylon seat. **NOTE**: Use Turmoxygen LC027 lubricant for oxygen service. Use Christo-Lube MCG-111 lubricant for all other gas applications.
    b. Being careful not to damage the bonnet sealing surface in the valve body, install the new lower plug into the chamber, seat first and tighten using a square drive until it is fully seated.
    c. Engage the new bonnet and stem subassembly into the valve body and hand tighten by turning clockwise. Rotate stem square until it becomes engaged in the lower plug.
    d. Using an 11/16″ hex torque wrench, tighten the bonnet to 50-60 ft. lbs. **NOTE**: A properly calibrated torque wrench must be used. Over torquing will damage the bonnet.
    e. Place the handwheel over the stem square. Thread the handwheel nut onto the stem thread and tighten to 15-35 in. lbs.
    f. To ensure free and smooth operation, open and close the valve several times by turning the handwheel.
2. Pressure Relief Device (PRD)
    a. **NOTE**: Refer to CGA S-1.1 latest edition to select the correct pressure relief device type according to the cylinder pressure and application.
    b. Thread the proper pressure relief device on the PRD port until hand tight.
    c. Using a 5/8″ socket and a calibrated torque wrench, tighten the PRD to 25-35 ft. lbs. Over torquing will damage the PRD.

TESTING OF ASSEMBLED VALVE

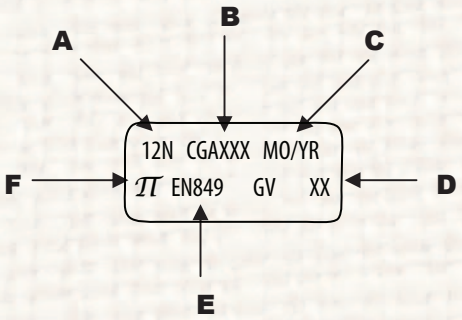
1. Thoroughly test each repaired valve assembly by inserting and tightening the valve assembly into a cylinder or suitable test fixture.
2. Pressurize the valve assembly with an inert gas to the working pressure of the cylinder of intended use.
3. With outlet suitably plugged, open the valve assembly by turning the handwheel counter clockwise. Using leak detection solution or equipment, check the bonnet, stem, and PRD for leaks.
4. Close the valve assembly by turning the handwheel clockwise. Remove the outlet plug and check for seat leakage through the outlet using proper leak detection solution or equipment.
5. If any leakage is detected, in the open or the closed position, the necessary repairs must be made before using the valve assembly.

Industrial Gas Valves

GV Series: Stamping Cross Reference / Parts Breakdown

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

STAMPING CROSS REFERENCE FOR GV SERIES INDUSTRIAL AND CHROME-PLATED VALVES



A. Inlet Thread Designation

B. Outlet Specification

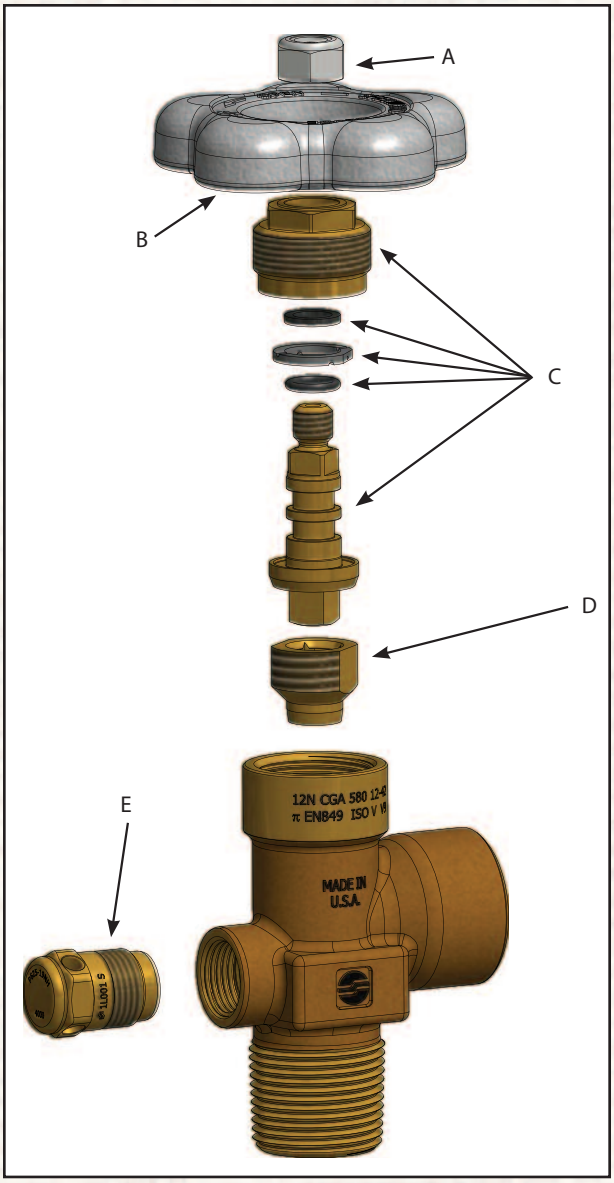
C. Month/Year of Manufacture

D. Week of Calendar Year

E. International Standard for Cylinder Valve Design Specifications

F. Regulatory Approval (PI Mark)

PARTS BREAKDOWN FOR GV OR GVHM SERIES INDUSTRIAL AND CHROME-PLATED VALVES



Description		Part Number
A.	Handwheel Nut	**SHW-1251-6**
B.	Handwheel	**SHW-1919A**
C.	Bonnet and Stem Assembly Includes: *Bonnet, Back-Up O-Ring*, O-Ring*, Thrust Washer, Stem*	**SHW-1400-30-XXX** (GV) **SHW-1400-32GVH-XXX** (GVHM)**
D.	Lower Plug and Seat Assembly Includes: Lower Plug and Seat	**SHW-1400-40** (Standard) **SHW-1400-40A** (CO2/Manifold)
E.	Pressure Relief Device Unitized Assembly Includes: Plug, Rupture Disc and Webbed Seal Washer	**P625-19X9-XX** (GV) **P625-19X9H-XX** (GVHM)

** GVHM has two O-rings.*
*** For XXX options, see kits below.*

GV KEY REPLACEMENT PARTS

Part Number	Description	
SHW-1400-30-101KIT	GV Kits, Brass –	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen
SHW-1-1400-30-101KIT	GV Kits, Plated –	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen

GVHM KEY REPLACEMENT PARTS

Part Number	Description	
SHW-1400-32GVH-100KIT	GVHM Kits, Brass –	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen
SHW-1400-32-GVH-101KIT	GVHM Kits, Brass –	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube
SHW-1-1400-32GVH-100KIT	GVHM Kits, Plated –	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen
SHW-1-1400-32-GVH-101KIT	GVHM Kits, Plated –	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube

Industrial Gas Valves

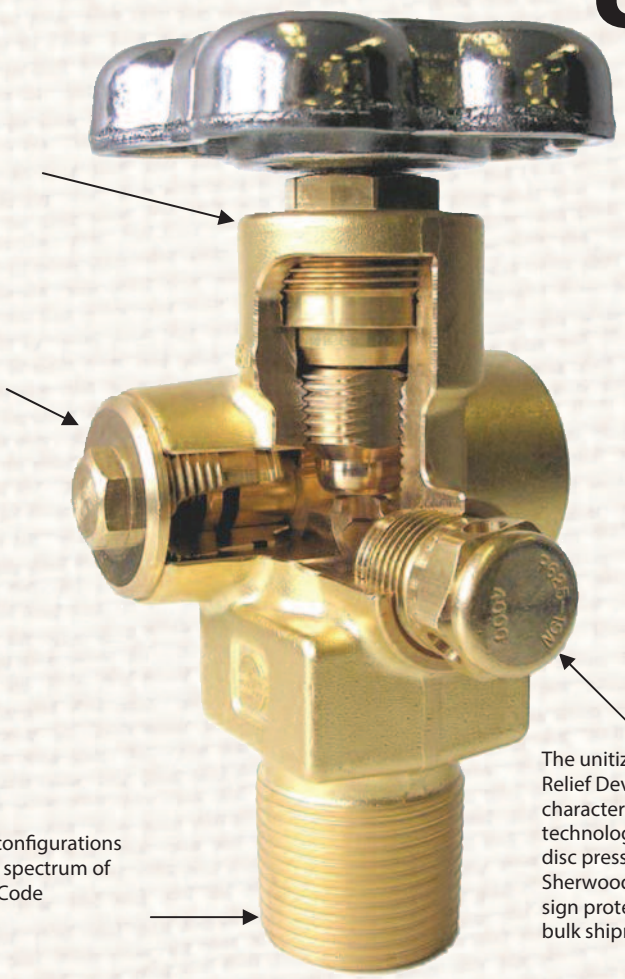
GRPV Series: Global Residual Pressure Features

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

PROTECTION OF CYLINDER CONTENTS

Durable forged brass body, precisely machined internal components and design elements meet the most stringent International valve performance standards. Automated assembly and testing processes ensure exceptional quality. All Sherwood GRPV valves are 100% leak tested.

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.

Sherwood GRPV valves are designed to retain approximately 30 to 50 psig pressure, maintaining the integrity of the cylinder contents against contaminants, even if the valve is left open.

The unique combination of innovative design and quality construction offers protection of cylinder contents without the expense of a time-consuming purge and clean cycle.

The unitized plug design of the Pressure Relief Device (PRD) provides excellent flow characteristics. Optical Character Recognition technology utilized to verify appropriate burst disc pressure rating.
Sherwood's exclusive "webbed washer" design protects burst disc during handling and bulk shipment.

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 15996	International Standard for Residual Pressure Valves Design Specifications
EN 849	International Standard for Cylinder Valves Design Specifications
AS2473	Australian Standard for Compressed Gas Cylinder Valves
TPED	Transportable Pressure Equipment Directive Modules B & D

DESIGN SPECIFICATIONS		
Maximum Working Pressure	6,000 PSIG	413 BAR
Burst Pressure	15,000 PSIG	1,035 BAR
Operating Temperature	Min: -50°F Max: 130°F	-45°C 55°C
Storage Temperature	Min: -65°F Max: 155°F	-54°C 68°C
Leak Rate Internal/External	1X10 $^{-3}$ atm cc/s	
Minimum Cycle Life	2,000 Cycles	
Cv Flow Factor	Standard: CO2 / Manifold:	.28 .50

Industrial Gas Valves

GRPV Series: Residual Pressure Cylinder Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

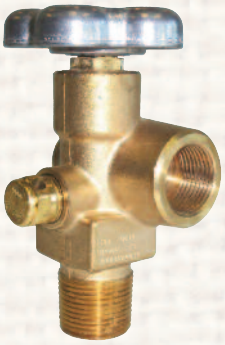
Part # SHW-GRPV32061-28

Part # SHW-GRPV34661-32

Part # SHW-GRPV54061-32

Part # SHW-GRPV54061-38

Part # SHW-GRPV58061-32



Part # SHW-GRPV58061-38

Part # SHW-GRPV59061-32

CGA 320 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV32061-28	3/4" NGT, Tapered Thread, Brass	3000 PSI
SHW-GRPV32061-32	3/4" NGT, Tapered Thread, Brass	3360 PSI
SHW-GRPV32061-35	3/4" NGT, Tapered Thread, Brass	3775 PSI
SHW-GRPV32061-38	3/4" NGT, Tapered Thread, Brass	4000 PSI

CGA 346 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV34661-28	3/4" NGT, Tapered Thread, Brass	3000 PSI
SHW-GRPV34661-32	3/4" NGT, Tapered Thread, Brass	3360 PSI
SHW-GRPV34661-35	3/4" NGT, Tapered Thread, Brass	3775 PSI
SHW-GRPV34661-38	3/4" NGT, Tapered Thread, Brass	4000 PSI

CGA 350 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV35065-28	3/4" NGT, Tapered Thread, Brass	3000 PSI 212° fuse
SHW-GRPV35065-32	3/4" NGT, Tapered Thread, Brass	3360 PSI 212° fuse
SHW-GRPV35065-35	3/4" NGT, Tapered Thread, Brass	3775 PSI 212° fuse
SHW-GRPV35065-38	3/4" NGT, Tapered Thread, Brass	4000 PSI 212° fuse

CGA 540 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV54061-28	3/4" NGT, Tapered Thread, Brass	3000 PSI
SHW-GRPV54061-32	3/4" NGT, Tapered Thread, Brass	3360 PSI
SHW-GRPV54061-35	3/4" NGT, Tapered Thread, Brass	3775 PSI
SHW-GRPV54061-38	3/4" NGT, Tapered Thread, Brass	4000 PSI

CGA 580 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV58061-32	3/4" NGT, Tapered Thread, Brass	3360 PSI
SHW-GRPV58061-35	3/4" NGT, Tapered Thread, Brass	3775 PSI
SHW-GRPV58061-38	3/4" NGT, Tapered Thread, Brass	4000 PSI
SHW-GRPVA58061-32	3/4" NGT, Tapered Thread, Chrome	3360 PSI
SHW-GRPV58061-32-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	3360 PSI
SHW-GRPV58061-35-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	3775 PSI
SHW-GRPV58061-38-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	4000 PSI

CGA 590 — Residual Pressure Cylinder Valve

Part Number	Description	Safety
SHW-GRPV59061-28	3/4" NGT, Tapered Thread, Brass	3000 PSI
SHW-GRPV59061-32	3/4" NGT, Tapered Thread, Brass	3360 PSI
SHW-GRPV59061-35	3/4" NGT, Tapered Thread, Brass	3775 PSI
SHW-GRPV59061-38	3/4" NGT, Tapered Thread, Brass	4000 PSI
SHW-GRPV59061-28-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	3000 PSI
SHW-GRPV59061-32-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	3360 PSI
SHW-GRPV59061-35-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	3775 PSI
SHW-GRPV59061-38-7	3/4" NGT +7 Over Size, Tapered Thread, Brass	4000 PSI

Replacement Safety Reliefs

Part Number	Description
SHW-P625-19N9-28	Sherwood GV Series Plug Style Safety 3000 PSI
SHW-P625-19N9-32	Sherwood GV Series Plug Style Safety 3360 PSI
SHW-P625-19N9-35	Sherwood GV Series Plug Style Safety 3775 PSI
SHW-P625-19N9-38	Sherwood GV Series Plug Style Safety 4000 PSI

Replacement fusible plugs also available. Old cap style available upon request. Call Customer Service for details.

Replacement Safety Reliefs

Part Number	Sherwood GV Series Plug Style Safety
SHW-P625-19C9-28W	Sherwood GV Series Plug Style Safety 212° Fuse 3000 PSI
SHW-P625-19C9-32W	Sherwood GV Series Plug Style Safety 212° Fuse 3360 PSI
SHW-P625-19C9-35W	Sherwood GV Series Plug Style Safety 212° Fuse 3775 PSI
SHW-P625-19C9-38W	Sherwood GV Series Plug Style Safety 212° Fuse 4000 PSI

Rev: 1/26/16, 2/7/14

Industrial Gas Valves

GRPV Series: Specifications / Materials

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

SELECTION OF PRESSURE RELIEF DEVICES

-XX	CYLINDER SERVICE PRESSURE			DISC RUPTURE RANGE PSIG @ 160°F		PRESSURE RELIEF DEVICE		
	D.O.T. Spec 3A, 3AA, 3AL Cylinders PSIG	D.O.T. Exemption Cylinders PSIG	International Cylinders BAR	Min	Max	CG-1 Frangible Disc No Fuse Metal	CG-4 ** Frangible Disc 165°F Fuse Metal	CG-5 ** Frangible Disc 212°F Fuse Metal
-26	1665			2500	2775	P625-19N9-26	P625-19**X**9-26M	P625-19**X**9-26W
-28	1800			2700	3000	P625-19N9-28	P625-19**X**9-28M	P625-19**X**9-28W
-32	2015			3025	3360	P625-19N9-32	P625-19**X**9-32M	P625-19**X**9-32W
-35	2265			3400	3775	P625-19N9-35	P625-19**X**9-35M	P625-19**X**9-35W
-38	2400			3600	4000	P625-19N9-38	P625-19**X**9-38M	P625-19**X**9-38W
-39			200	3915	4350	P625-19N9-39	P625-19**X**9-39M	P625-19**X**9-39W
-43	2670			4005	4450	P625-19N9-43	P625-19**X**9-43M	P625-19**X**9-43W
-46	2900			4350	4833	P625-19N9-46	P625-19**X**9-46M	P625-19**X**9-46W
-47	2950			4425	4917	P625-19N9-47	P625-19**X**9-47M	P625-19**X**9-47W
-48	3000		230	4500	5000	P625-19N9-48	P625-19**X**9-48M	P625-19**X**9-48W
-50		3600		4860	5600	P625-19N9-50	P625-19**X**9-50M	P625-19**X**9-50W
-55	3500/3600			5250	5833	P625-19N9-55	P625-19**X**9-55M	P625-19**X**9-55W
-63	4000			6000	6665	P625-19N9-63	P625-19**X**9-63M	P625-19**X**9-63W
-65		4500		6075	6750	P625-19N9-65	P625-19**X**9-65M	P625-19**X**9-65W
-71		5000		6750	7500	P625-19N9-71	P625-19**X**9-71M	P625-19**X**9-71W
-78	5000			7500	8333	P625-19N9-78	P625-19**X**9-78M	P625-19**X**9-78W
-85		6000		8100	9000	P625-19N9-85	P625-19**X**9-85M	P625-19**X**9-85W
-95	6000			9000	10000	P625-19N9-95	P625-19**X**9-95M	P625-19**X**9-95W

****Copper Disc must be used for Hydrogen Service** **X = N for Nickel Disc or C for Copper Disc**

MATERIALS OF CONSTRUCTION FOR GRPV SERIES RESIDUAL PRESSURE VALVES

Description	Part Number	Materials of Construction
Body	N/A	Forged Brass UNS Alloy #37700/Chrome Plating when applicable.
Bonnet	1400-2	Free Machining Brass UNS Alloy #36000/Chrome Plating when applicable.
Handwheel	1919A	Aluminum A380
Handwheel Nut	1251-6	Steel Class 8, Zinc Plating
Lower Plug	1400-4/1400-4A	Leaded Naval Brass C48500
Lower Plug Seat	1400-13/1400-13A	Nylon Zytel 101
PRD	See Chart Above	Plug: Free Machining Brass UNS Alloy #36000/ Chrome Plating when applicable.
		Rupture Disc: Nickel Alloy 201; Copper UNS 22000
		Webbed Seal Gasket: Copper Dead Soft C11000
Stem	1400-3	Free Machining Brass UNS Alloy #36000
O-Ring	G011EP	Ethylene Propylene
Back up O-Ring	1400-9A	Ethylene Propylene
Thrust Washer	1251-5	Delrin 500 AF
RPV Piston	1400RP-10	Forged Brass UNS Alloy #37700
RPV Plug	1400RPB-8	Free Machining Brass UNS Alloy #36000/Chrome Plating when applicable.
RPV Spring	1400RP-7	Beryllium Copper
Piston O-Ring	G008EP9	Ethylene Propylene
Piston Quad Ring	G4011EP9	Ethylene Propylene
RPV Plug O-Ring	G017EP9	Ethylene Propylene

INLET O-RING FOR STRAIGHT THREADED GRPV SERIES RESIDUAL PRESSURE VALVES

Size	Part Number
1.125 UNF	G216A (Buna 70 Durometer)

LUBRICANTS

Christo-Lube MCG-111	Used in valves for all Industrial Gas Applications
Turmoxygen LC027	Used in valves for Oxygen Service

TORQUE VALUES FOR GRPV SERVIES RESIDUAL PRESSURE VALVES

Closing Torque @ 5400 PSIG Inlet Pressure	20-30 in. lbs. (2.2-3.3 Nm)
Operating Torque @ 5400 PSIG Inlet Pressure	10-20 in. lbs. (1.1-2.2 Nm)
Bonnet Installation Torque	50-60 ft. lbs. (68-81 Nm)
Handwheel Nut Installation Torque	15-35 in. lbs. (1.7-3.9 Nm)
PRD Installation Torque	25-35 ft. lbs. (34-47 Nm)

REPAIR INSTRUCTIONS FOR GRPV SERIES RESIDUAL PRESSURE VALVES

DISASSEMBLY OF VALVE

1. Place the valve assembly into a vise or similar holding fixture, taking care not to damage the inlet or outlet threads. The holding fixture must securely grip the valve body on the wrench flats so that no damage is done to the internal bores, external threads, outlet, or pressure relief device.
2. Chamber
    a. Using a 13 mm socket, remove the handwheel nut from the handwheel by turning it counter clockwise.
    b. Remove the handwheel from the stem square.
    c. Using an 11/16″ socket wrench or hex box wrench, remove the bonnet by turning it counter clockwise. The stem subassembly with o-ring and back-up o-ring may remove with the bonnet. If not, remove the stem subassembly from the valve after the bonnet.
    d. Being careful not to scratch the bonnet sealing surface in the valve body, use a square drive to remove the lower plug from the valve chamber, by turning it counter clockwise.
3. Pressure Relief Device
    a. Being careful not to scratch the sealing surface of the valve body, remove the pressure relief device by turning it counter clockwise using a 5/8″ hex box wrench or socket.

INSPECTION OF VALVE AND COMPONENTS

1. Valve Body
    a. Inspect the valve body chamber for dirt, debris or damage. Where possible, blow out the valve body chamber using clean, dry, Compressed Air or Nitrogen to remove any foreign particles.
    b. If the valve body is damaged, do not attempt to repair. Order a new valve assembly.
2. Components
    a. Always discard the bonnet and stem subassembly and the lower plug. Order replacement parts. **NOTE**: The lower plug replacement must correspond with the valve body and its relative application. For example, standard valves have a .125″ or .156″ through hole in the body which uses a nylon seat diameter that is relative to that size, part number 1400-40. Carbon dioxide and manifold valves – except for oxygen – have a .272″ through hole in the body and use a nylon seat that is relative to that size, part number 1400-40A.
    b. Handwheels should only be reused if in good condition. Discard handwheels if damaged.
    c. Inspect the pressure relief device threads for damage. Inspect the rupture disc and the webbed washer for scratches. Discard this component if damaged and order replacement parts.

ASSEMBLY OF VALVE

1. Chamber
    a. Apply 3 dabs of lubricant around the perimeter of the lower plug threads, approximating the size of a pencil eraser for each. Locate lubricant toward the lower most threads closest to the crimped seat but using care not to get lubricant on the nylon seat. **NOTE**: Use Turmoxygen LC027 lubricant for oxygen service. Use Christo-Lube MCG-111 lubricant for all other gas applications.
    b. Being careful not to damage the bonnet sealing surface in the valve body, install the new lower plug into the chamber, seat first and tighten using a square drive until it is fully seated.
    c. Engage the new bonnet and stem subassembly into the valve body and hand tighten by turning clockwise. Rotate stem square until it becomes engaged in the lower plug.
    d. Using an 11/16″ hex torque wrench, tighten the bonnet to 50-60 ft. lbs. **NOTE**: A properly calibrated torque wrench must be used. Over torquing will damage the bonnet.
    e. Place the handwheel over the stem square. Thread the handwheel nut onto the stem thread and tighten to 15-35 in. lbs.
    f. To ensure free and smooth operation, open and close the valve several times by turning the handwheel.
2. Pressure Relief Device (PRD)
    a. **NOTE**: Refer to CGA S-1.1 latest edition to select the correct pressure relief device type according to the cylinder pressure and application.
    b. Thread the proper pressure relief device on the PRD port until hand tight.
    c. Using a 5/8″ socket and a calibrated torque wrench, tighten the PRD to 25-35 ft. lbs. Over torquing will damage the PRD.

TESTING OF ASSEMBLED VALVE

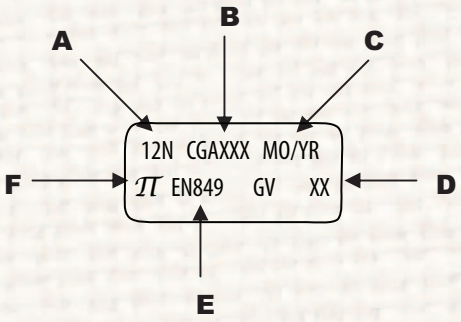
1. Thoroughly test each repaired valve assembly by inserting and tightening the valve assembly into a cylinder or suitable test fixture.
2. Pressurize the valve assembly with an inert gas to the working pressure of the cylinder of intended use.
3. With outlet suitably plugged, open the valve assembly by turning the handwheel counter clockwise. Using leak detection solution or equipment, check the bonnet, stem, and PRD for leaks.
4. Close the valve assembly by turning the handwheel clockwise. Remove the outlet plug and check for seat leakage through the outlet using proper leak detection solution or equipment.
5. If any leakage is detected, in the open or the closed position, the necessary repairs must be made before using the valve assembly.

Industrial Gas Valves

GRPV Series: Stamping Cross Reference / Parts Breakdown

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

STAMPING CROSS REFERENCE FOR GRPV SERIES RESIDUAL PRESSURE VALVES



A. Inlet Thread Designation

B. Outlet Specification

C. Month/Year of Manufacture

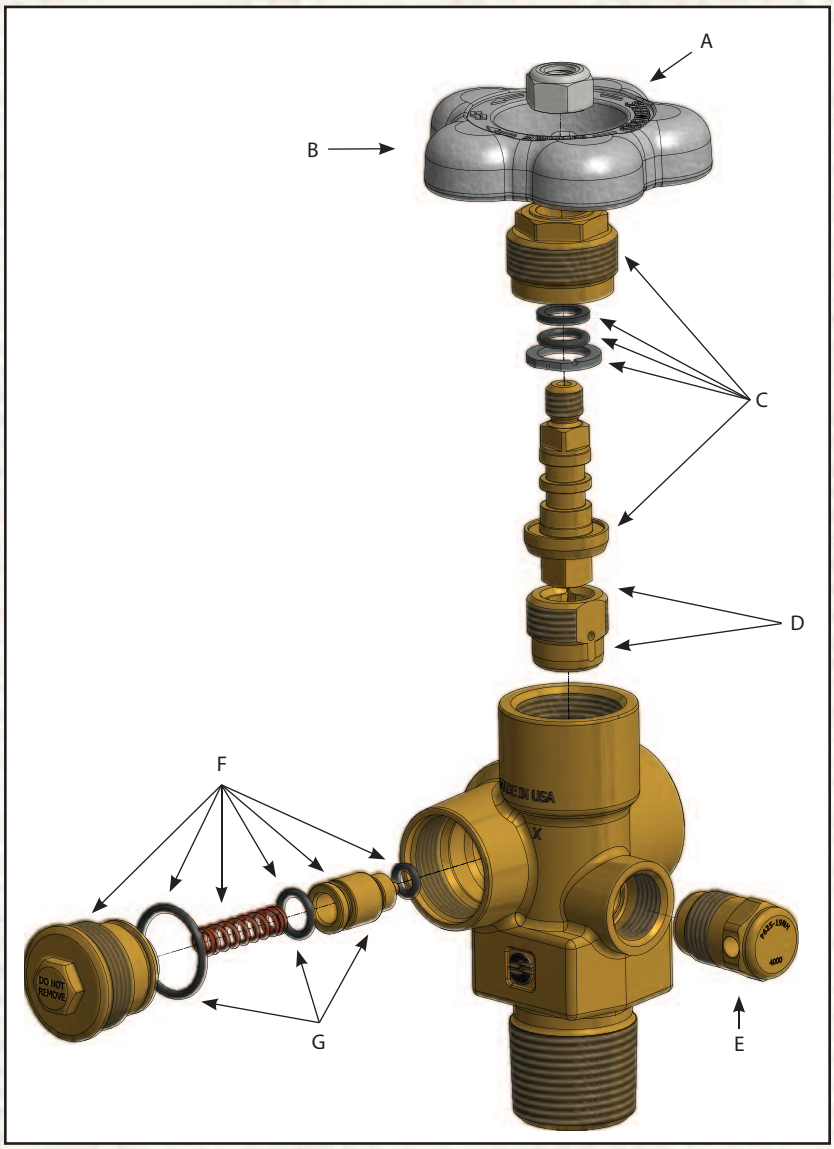
D. Week of Calendar Year

E. International Standard for Cylinder Valve Design Specifications

F. Regulatory Approval (PI Mark)

PARTS BREAKDOWN FOR GRPV SERIES RESIDUAL PRESSURE VALVES

Description		Part Number
A.	Handwheel Nut	**SHW-1251-6**
B.	Handwheel	**SHW-1919A**
C.	Bonnet and Stem Assembly Includes: *Bonnet, Back-Up O-Ring, O-Ring, Thrust Washer and Stem*	**SHW-1400-30-100** (Oxygen) **SHW-1400-30-101** (All Others)
D.	Lower Plug and Seat Assembly Includes: Lower Plug and Seat	**SHW-1400-40** (Standard) **SHW-1400-40A** (CO2/Manifold)
E.	Pressure Relief Device Includes: Plug, Rupture Disc and Webbed Seal Washer	**SHW-P625-19X-XX**
F.	Includes RPV Assembly, Plug, O-Rings, Spring and Piston	**SHW-GRPV-KIT**
G.	Includes O-Rings and Piston Assembly	**SHW-GRPV-NVA-KIT**



GRPV KEY REPLACEMENT PARTS

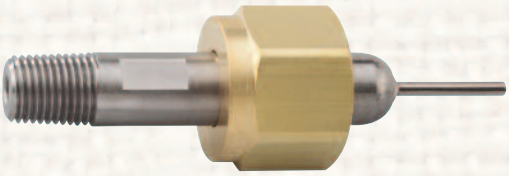
Part Number	Description
SHW-GRPV-KIT	Total RPV Assembly Kit, 50 Each
SHW-GRPV-NVA-KIT	Piston Assembly Kit Only, 25 Each

Note: Residual check components are not available. For service or repair, contact Ratermann.

Rev: 3/16/16, 10/23/14

Industrial Gas Valves
Fill Adapters for the GRPV Series

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

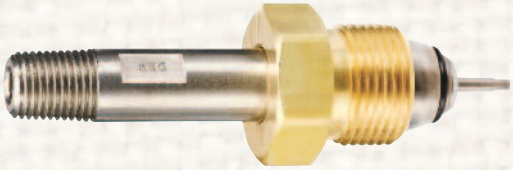


Part # SHW-TLG540S

2 Piece Adapters

Retractable Pin adapters provides maximum operating flexibility to fill or evacuate a cylinder with either a conventional valve or a GRPV. Engage the Pin Locking Tool (see below), rotate the tool clockwise to depress the pin for use with a conventional valve. Or, rotate the tool counter-clockwise to release the pin for use with a GRPV valve. The adapter incorporates an o-ring seal for a hand tight connection.

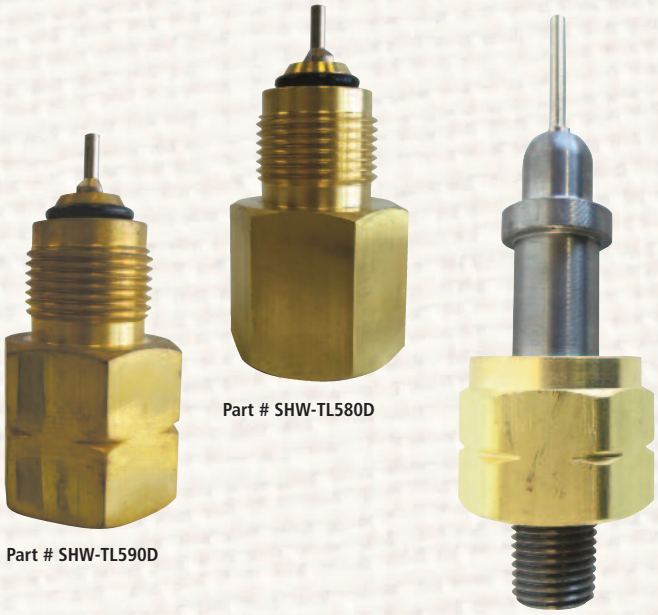
**Adapters can be used with TV RPV also.*



Part # SHW-TLG580SLW

Adapter with Retractable Pin

Part Number	Description
* SHW-TLG580SLW	Fill Adapter with Retractable Pin CGA 580
* SHW-TLG590SLW	Fill Adapter with Retractable Pin CGA 590



Part # SHW-TL590D

Part # SHW-TL580D

Part # SHW-TLG350S

One Piece Adapter With Fixed Pin

Adapter features a rigid-mounted pin for use on manifolds dedicated to filling cylinders with Sherwood GRPV valves.

**Adapters can be used with TV RPV also.*

Adapter with Fixed Pin

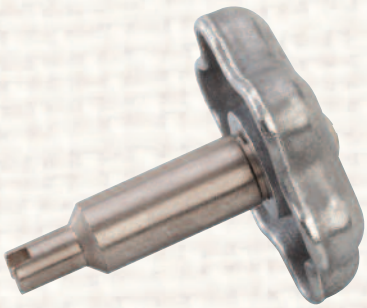
Part Number	Description
SHW-TLG680S	Fill Adapter with Fixed Pin CGA 680
SHW-TLG320W	Fill Adapter with Fixed Pin CGA 320
SHW-TLG346S	Fill Adapter with Fixed Pin CGA 346
SHW-TLG350S	Fill Adapter with Fixed Pin CGA 350
SHW-TLG540S	Fill Adapter with Fixed Pin CGA 540
* SHW-TL580D	Fill Adapter with Fixed Pin CGA 580
* SHW-TL590D	Fill Adapter with Fixed Pin CGA 590

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.

Checking Rod

Part Number	Description
SHW-TL580C	Checking Rod



Pin Locking Tool

Used with retractable pin adapter.

Pin Locking Tool

Part Number	Description
SHW-TL580B	Pin Locking Tool

Rev: 3/16/16, 10/23/14, 7/1/13

Industrial Gas Valves

MVHM Series: Monel® Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Tough forged Monel® construction for extreme corrosive environments

KEY FEATURES & BENEFITS

- Designed to resist stress corrosion cracking as well as toxic atmospheres
- Corrosion resistant
- Compatible with high-pressure oxygen and other oxidizing gases
- Leak rate $1x10^{-4}$, 10 times better than the industry standard for extreme applications
- Reduced internal stress zones
- Innovative valve core design
- Optimized bonnet assembly
- Enhanced Pressure Relief design
- Reliable dual O-ring and back-up ring design
- 100% helium leak tested @ 6000 PSI

ENGINEERED WITH HIGH-PERFORMANCE MONEL ALLOY

Design Specifications

	English	Metric
Max Working Pressure:	6000 PSI	413 Bar
Burst Pressure:	13,500 PSI	931 Bar
Leak Rate:	$1x10^{-4}$ atm cc/sec	$1x10^{-4}$ Bar mL/sec
Operating Temperature:	-50˚ F→ +149˚ F	-46˚ C → +65˚ C
Operating Torque:	10-20 in.-lbs.	1-2 N-m
Cv Flow Factor:	Standard .69 CO2 / Manifold 1.23	
Cycle Life:	2000 Cycles	2000 Cycles

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
TPED/ADR	Transportable Pressure Equipment Directive
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

Materials of Construction

Description	Materials of Construction
Handwheel	Aluminum ASTM A380
Locknut	Class 8 Steel with Nylon Insert
Stem	Monel N04405
Bonnet	Monel N04405
Backup Ring	PTFE (Upper), Ethylene Propylene (EPDM, Lower)
O-Ring	Ethylene Propylene (EPDM)
Thrust Washer	Delrin® 500AF
Seat Subassembly Plug	Leaded Naval Brass C48500
Seat Subassembly Seat	Nylon, Zytel 101
Body	Forged Monel N0400
Lubricants	Turmoxygen
Safety Subassembly Plug	Monel N04405
Safety Subassembly Disc	Bronze Copper C22000 or Nickel 201
Safety Subassembly Washer	Copper C11000
Safety Subassembly Fuse Metal	Eutectic Alloy

Ordering Info Monel® Valves

CGA 347 Air

Part Number	Description
SHW-MVHM34764-65	CGA 347, 3/4 NGT, 6750 PSI 165˚ Fuse
SHW-MVHM34725E4-65	CGA 347, 25E4, 6750 PSI 165˚ Fuse
SHW-MVHM34764-65-24	CGA 347, 3/4 NGT-24, 6750 PSI 165˚ Fuse
SHW-MVHM34725E1-65-24	CGA 347, 25E1 -24, 6750 PSI

CGA 540 Oxygen

Part Number	Description
SHW-MVHM54064-32	CGA 540, 3/4 NGT, 3360 PSI 165˚ Fuse
SHW-MVHM54064-35	CGA 540, 3/4 NGT, 3775 PSI 165˚ Fuse
SHW-MVHM54064-38	CGA 540, 3/4 NGT, 4000 PSI 165˚ Fuse
SHW-MVHM54025E4-32	CGA 540, 25E4, 3360 PSI 165˚ Fuse
SHW-MVHM54025E4-35	CGA 540, 25E4, 3775 PSI 165˚ Fuse
SHW-MVHM54025E4-38	CGA 540, 25E4, 4000 PSI 165˚ Fuse

CGA 701 Oxygen

Part Number	Description
SHW-MVHM70164-65-24	CGA 701, 3/4 NGT-24, 6750 PSI 165˚ Fuse
SHW-MVHM70125E4-65	CGA 701, 25E4, 6750 PSI 165˚ Fuse

CGA 702 Air

Part Number	Description
SHW-MVHM70264-85-24	CGA 702, 3/4 NGT-24, 9000 PSI 165˚ Fuse
SHW-MVHM70225E4-85	CGA 702, 25E4, 9000 PSI 165˚ Fuse

Rev: 10/25/14

Industrial Gas Valves

SVHM Series: Stainless Steel Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Stainless steel valves for challenging environments such as salt water and corrosive atmospheres like chemical processing plants.

KEY FEATURES & BENEFITS

- Designed to resist stress corrosion cracking as well as toxic atmospheres
- Corrosion resistant
- Compatible with high-pressure oxygen and other oxidizing gases
- Leak rate 10 times better than the industry standard for extreme applications – $1x10^{-4}$
- Reduced internal stress zones
- Innovative valve core design
- Optimized bonnet assembly
- Enhanced Pressure Relief design
- Reliable dual O-ring and back-up ring design
- 100% helium leak tested

Design Specifications

	English	Metric
Max Working Pressure:	6000 PSI	413 Bar
Burst Pressure:	13,500 PSI	931 Bar
Leak Rate:	$1x10^{-4}$ atm cc/sec	$1x10^{-4}$ Bar mL/sec
Operating Temperature:	-50˚ F→ +149˚ F	-46˚ C → +65˚ C
Operating Torque:	10-20 in.-lbs.	1-2 N-m
Cv Flow Factor:	Standard .69 CO2 / Manifold 1.23	
Cycle Life:	2000 Cycles	2000 Cycles

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
TPED/ADR	Transportable Pressure Equipment Directive
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

Materials of Construction

Description	Materials of Construction
Handwheel	Plated Aluminum ASTM A380
Locknut	316 Stainless Steel with Nylon Insert
Stem	316 Stainless Steel
Bonnet	316 Stainless Steel
Bonnet Gasket	Copper C11000
Backup Ring	PTFE (Upper), Ethylene Propylene (EPDM-Lower)
O-Ring	Ethylene Propylene (EPDM)
Thrust Washer	Delrin® 500AF
Seat Subassembly Plug	Leaded Naval Brass C48500
Seat Subassembly Seat	Nylon, Zytel 101
Body	Forged 316L Stainless Steel
Lubricants	Turmoxygen
Safety Subassembly Plug	316L Stainless Steel
Safety Subassembly Disc	Nickel 201
Safety Subassembly Washer	Copper C11000
Safety Subassembly Fuse Metal	Eutectic Alloy

Ordering Info SVHM Series: Stainless Steel Valves

Part Number	CGA Outlet	Gas Service @ 70˚ F	Inlet	Safety	Outlet Thread Size
SHW-SVHM34760	347	3001–4700 PSI	3/4" NGT	No PRD	.825–14 NGO
SHW-SVHM34761-55	347	3001–4700 PSI	3/4" NGT	5833 PSI CG-1	.825–14 NGO
SHW-SVHM34761-65	347	3001–4700 PSI	3/4" NGT	6750 PSI CG-1	.825–14 NGO
SHW-SVHM34761-55-24	347	3001–4700 PSI	3/4" NGT–24 Threads Oversize	5833 PSI CG-1	.825–14 NGO
SHW-SVHM34761-65-24	347	3001–4700 PSI	3/4" NGT–24 Threads Oversize	6750 PSI CG-1	.825–14 NGO

Rev: 10/25/14

Alternative Energy Valves

NGV, NGVHM & NGRPV Series:

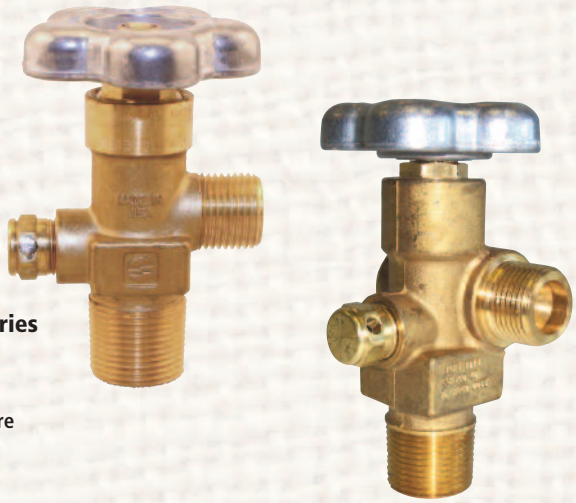
Global Industrial Gas Valves for Hydrocarbon-Based Flammable Gases

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Global valve for hydrocarbon-based flammable gases, including compressed natural gas (CNG), methane, ethane and other similar gases.

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
- Reduced internal stress zones
- Innovative valve core design
- Durable Buna-N O-ring and PTFE backup O-ring compatible with flammable gases
- Pressure Relief Device (PRD) unitized plug design provides excellent flow characteristics
- 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 (NGV) or double O-ring (NGVHM) seal reduces friction and operates at exceptionally low torque levels
- Available inlets include NGT, UNF, DIN477, BS, ABNT and others
- Tapped for dip tube as required



NGV Series

Up to 3000 PSI Working Pressure

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
TPED/ADR	Transportable Pressure Equipment Directive
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

Ordering Info Key Replacement Parts

Part Number	Description
SHW-1400-31NGV-101KIT (NGV)	Bonnet & Seat Assembly Kit
SHW-1400-33NGV-101KIT (NGVHM)	(includes 25 sub-assemblies)
SHW-NGRPV-KIT	NGRPV Piston Assembly Kit (includes 50 sub-assemblies)

Lubricants

Part Number	Description
SHW-Christo-Lube	Used in Valves for All Industrial Gas Applications

Ordering Info NGV & NGVHM Global Valves

Methyl Fluoride

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGV35064-38	CGA 350	0-3,000 PSI	165° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT

Ethane

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGV35061-38	CGA 350	0-3,000 PSI	Rupture Disc 4,000 PSI	3/4"-14 NGT

Ethylene

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGV35061-38	CGA 350	0-3,000 PSI	Rupture Disc 4,000 PSI	3/4"-14 NGT

Methane

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGV35045-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1/2"-14 NGT
SHW-NGV35065-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT
SHW-NGV35055-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1 1/8"-12 UNF
SHW-NGV35025E5-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	25E ISO
SHW-NGV35085-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1"-11 1/2" NGT
SHW-NGVHM69565-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	3/4"-14 NGT
SHW-NGVHM69565-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	3/4"-14 NGT
SHW-NGVHM69555-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	1 1/8"-12 UNF
SHW-NGVHM69555-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	1 1/8"-12 UNF
SHW-NGVHM69525E5-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	25E ISO
SHW-NGVHM69525E5-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	25E ISO
SHW-NGVHM70365-85	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 9,000 PSI	3/4"-14 NGT
SHW-NGVHM70365-95	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 10,000 PSI	3/4"-14 NGT
SHW-NGVHM70325E5-85	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 9,000 PSI	25E ISO
SHW-NGVHM70325E5-95	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 10,000 PSI	25E ISO

Natural Gas

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGV35045-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1/2"-14 NGT
SHW-NGV35065-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT
SHW-NGV35055-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1 1/8"-12 UNF
SHW-NGV35025E5-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	25E ISO
SHW-NGV35085-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1"-11 1/2" NGT
SHW-NGVHM69565-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	3/4"-14 NGT
SHW-NGVHM69565-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	3/4"-14 NGT
SHW-NGVHM69555-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	1 1/8"-12 UNF
SHW-NGVHM69555-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	1 1/8"-12 UNF
SHW-NGVHM69525E5-48	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 5,000 PSI	25E ISO
SHW-NGVHM69525E5-65	CGA 695	3,001-4,700 PSI	212° Fuse Rupture Disc 6,750 PSI	25E ISO
SHW-NGVHM70365-85	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 9,000 PSI	3/4"-14 NGT
SHW-NGVHM70365-95	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 10,000 PSI	3/4"-14 NGT
SHW-NGVHM70325E5-85	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 9,000 PSI	25E ISO
SHW-NGVHM70325E5-95	CGA 703	4,701-6,400 PSI	212° Fuse Rupture Disc 10,000 PSI	25E ISO

Rev: 10/25/14, 7/1/13

Alternative Energy Valves

NGV, NGVHM & NGRPV Series:

Global Industrial Gas Valves for Hydrocarbon-Based Flammable Gases

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Ordering Info Residual NGV Global Valves

Methyl Fluoride

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGRPV35064-38	CGA 350	0-3,000 PSI	165° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT

Ethane

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGRPV35061-38	CGA 350	0-3,000 PSI	Rupture Disc 4,000 PSI	3/4"-14 NGT

Ethylene

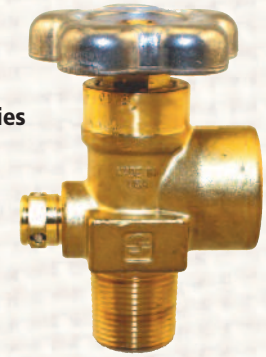
Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGRPV35061-38	CGA 350	0-3,000 PSI	Rupture Disc 4,000 PSI	3/4"-14 NGT

Methane

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGRPV350455-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1/2"-14 NGT
SHW-NGRPV35065-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT
SHW-NGRPV35025E5-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	25E ISO

Natural Gas

Part Number	CGA Outlet	PSI Range	Safety Type	Inlet Thread
SHW-NGRPV35045-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	1/2"-14 NGT
SHW-NGRPV35065-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	3/4"-14 NGT
SHW-NGRPV35025E5-38	CGA 350	0-3,000 PSI	212° Fuse Rupture Disc 4,000 PSI	25E ISO



NGVHM Series

3001 PSI and Above Working Pressure

Design Specifications

	English	Metric
NGV Max. Working Pressure:	3000 PSI	200 Bar
NGVHM Max. Working Pressure:	6000 PSI	413 Bar
Burst Pressure:	15,000 PSI	1034 Bar
Operating Temperature Range:	-50˚ F→ +130˚ F	-45˚ C → +54˚ C
Leak Rate Internal/External:	$1x10^{-3}$ atm cc/sec.	$1x10^{-3}$ Bar mL/sec.
Minimum Cycle Life:	2000 Cycles	2000 Cycles
Cv Flow Factor:	Standard .690	Standard .690
Operating Torque:	NGV: 10-20 in.-lbs. NGVHM: 10-20 in.-lbs.	NGV: 1.1–2.2 N-m NGVHM: 1.1–2.2 N-m
Bonnet Assembly Torques:	NGV: 50-60 ft.-lbs. NGVHM: 10-20 ft.-lbs.	NGV: 67.8–81.3 N-m NGVHM: 81.3–94.9 N-m
PRD Torques:	NGV: 25-35 ft.-lbs. NGVHM: 40-50 ft.-lbs.	NGV: 33.9–47.4 N-m NGVHM: 54.2–67.8 N-m
NGRPV Cap Assembly Torques:	15-25 ft.-lbs.	20.3–33.9 N-m

Materials of Construction

Part Number	Description	Materials of Construction
NGV, NGVHM & NGRPV Series Industrial & Chrome-Plated Valves		
SHW-1400-2 (NGV & NGRPV) SHW-1400-2A (NGVHM)	Bonnet	Brass C36000; Chrome Plating When Applicable
SHW-1919A	Handwheel	Aluminum A380
SHW-1251-6	Handwheel Nut	Steel Class 8, Zinc Plating
SHW-1400-4/1400-4A	Lower Plug	Brass C48500
SHW-1400-13/1400-13A	Lower Plug Seat	Nylon, Zytel 101
SHW-1400-3	Stem	Brass C36000
SHW-G011B-65	O-Ring	Buna-N
SHW-MS28774-011T	Back-up O-Ring	PTFE
SHW-1251-5	Thrust Washer	Delrin® 500 AF

Rev: 10/25/14, 7/1/13

Medical Valves

KVAB Series: Post Medical Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Post-type medical valves for "F" and "D" type cylinders and used for all CCA-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

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 or Gas Cylinder Valves

DESIGN SPECIFICATIONS	English	Metric
Maximum Working Pressure	3,000 PSIG	
Burst Pressure	12,000 PSIG	
Operating Temperature	Min: -50˚F Max: 149˚F	-45˚C 65˚C
Storage Temperature	Min: -65˚F Max: 155˚F	-54˚C 68˚C
Leak Rate Internal/External	$1X10^{-5}$ cc/sec	
Cv Flow Factor	Standard:.102	Standard:.102
Minimum Cycle Life	5,000 Cycles	5,000 Cycles
Opening Torque	8–10 in.-lbs	1–1.1 N-m
Closing Torque	8–10 in.-lbs	1–1.1 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

Replacement Inlet O-ring for Straight Threaded GV Series Industrial and Chrome Plated Valves

Size	Part Number	Material
0.625 UNF	SHW-G208A	BUNA
0.625 UNF	SHW-G208T	PTFE
0.750 UNF	SHW-G210-9	BUNA-N
0.750 UNF	CVO-1T	PTFE
1.125 UN	SHW-G216A	BUNA 70 Durometer
1.125 UN	CVO-2T	PTFE

Part Number	Description
SHW-9-4000-60-28	Safety 3000 PSI Standard rupture Disc
SHW-9-4000-60-32	Safety 3360 PSI Standard rupture Disc
SHW-9-4000-60-38	Safety 4000 PSI Standard rupture Disc
SHW-9-4000-60-48	Safety 5000 PSI Standard rupture Disc
SHW-6513MFB-28KIT	165 Fuse Safety Kit (25 pcs.) 3000 PSI
SHW-6513MFB-32KIT	165 Fuse Safety Kit (25 pcs.) 3360 PSI
SHW-6513MFA-48KIT	165 Fuse Safety Kit (25 pcs.) 5000 PSI
SHW-1-KTS-1B	Toggle
SHW-1-KTS-C	Toggle – New Rivet Design
SHW-J33-09308SS	Toggle Pin – New style
SHW-J250608B	Pin for Toggle
SHW-1-6502A	Bonnet
SHW-19-6526	Stem Washer
SHW-6502A-3	Backup Ring
SHW-6503SH	Bonnet & Stem Assembly
SHW-6507A-17N	Lower Plug Assembly
SHW-6514T	PTFE Packing
SHW-6519	Packing Washer
SHW-6521-X	Knob HW
SHW-6527SH	Spring
SHW-G1100-11H	Stem O-Ring
SHW-G210J	Inlet O-Ring, Viton
SHW-G908H	Flange O-Ring, Viton
SHW-G210T	Inlet O-ring PTFE
SHW-9-K655B-2	Pressure Relief Device

165 Fuse Safety Kit for 3360 PSI
Part # SHW-6513MFB-32KIT

Toggle & Pin Kit
Part # SHW-J250608B

Medical Post Valve Socket
Removal and Installation

This valve socket has been developed to easily remove or reinstall the Medical Post Valve without damaging the valve. Specifically a valve with an "O" Ring in an aluminum cylinder that requires a given ft/lb torque. This socket will adapt for use with the valving machine jaws, or for manual removal / installation using a wrench. Additionally a 1/2" square socket is attached to the top of unit for use with a 1/2" drive torque wrench.

Part Number	Description
VT-PV-SVM	Medical Post Valve Socket

VALVE SIZING* CHART

Place Valve Thread End of Valve to Match Up to Diameter on the Chart

STEEL CYLINDER

1/2" NGT STEEL CYL.

Typical Steel Cylinder Sizes	Thread Size
D & E Steel & Others Medical Tank	1/2"

ALUMINUM CYLINDER

.750" UNF ALUMINUM CYL.

Typical Valve Aluminum Cylinder	Thread Size
Medical Aluminum Cylinder Mw-M4, M6, M7, M9, E, D	.750"

This guide is for a typical valve.

Not all valve and thread sizes are included. Please use this as a general guide.

* These sizes are accurate in printed catalog.

Rev: 10/27/14, 7/1/13

Medical Valves KVAB Series: Post Medical Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

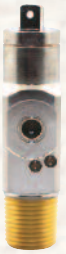
Part # SHW-KVAB87054-32R

Part # SHW-KVAB87044-32

Part # SHW-KVAB87054-32RGTG

Part # SHW-KVAB91051-28

Part # SHW-KVAB91041-32



Part # SHW-KVAB93044F-32

CGA 870 Medical Oxygen Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB87054-32R	3360 PSI 165° fuse
SHW-KVAB87054-32RTG	3360 PSI 165° fuse with Toggle
SHW-KVAB87054-32RGTG	3360 PSI 165° fuse with Toggle and Gauge Port

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB87044F-28	3000 PSI 165° fuse
SHW-KVAB87044F-28TG	3000 PSI 165° fuse with Toggle
SHW-KVAB87044F-32	3360 PSI 165° fuse
SHW-KVAB87044F-32TG	3360 PSI 165° fuse with Toggle

CGA-880 Oxygen/CO2 Mixtures USP Post Valves

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB88044F-28	3000 PSI 165° fuse
SHW-KVAB88044F-32	3360 PSI 165° fuse

CGA-890 Oxygen/Helium Mixtures USP Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB89054-28	3000 PSI 165° fuse
SHW-KVAB89054-32	3360 PSI 165° fuse

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB89044F-32	3360 PSI 165° fuse

CGA-910 Nitrous Oxide USP Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB91051-28	3000 PSI
SHW-KVAB91051-28TG	3000 PSI with Toggle
SHW-KVAB91051-32	3360 PSI
SHW-KVAB91051-32TG	3360 PSI with Toggle

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB91041-28	3000 PSI
SHW-KVAB91041-32	3360 PSI

CGA-930 Helium USP Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB93054-28	3000 PSI 165° fuse
SHW-KVAB93054-32	3360 PSI 165° fuse

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB93044F-28	3000 PSI 165° fuse
SHW-KVAB93044F-32	3360 PSI 165° fuse

Part # SHW-KVAB94051-32

Part # SHW-KVAB94041-32

Part # SHW-KVAB96054-32

Part # SHW-KVAB96044F-32

Part # SHW-KVAB96054F-32

Part # SHW-KVAB97344F-32

CGA-940 Carbon Dioxide USP Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB94051-28	3000 PSI
SHW-KVAB94051-28TG	3000 PSI with Toggle
SHW-KVAB94051-32	3360 PSI
SHW-KVAB94051-32TG	3360 PSI with Toggle

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB94041-28	3000 PSI
SHW-KVAB94041-32	3360 PSI

CGA-950 Medical Air USP Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB95054-28	3000 PSI 165° fuse
SHW-KVAB95054-28TG	3000 PSI 165° fuse with Toggle
SHW-KVAB95054-32	3360 PSI 165° fuse
SHW-KVAB95054-32TG	3360 PSI 165° fuse with Toggle

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB95044F-32	3360 PSI 165° fuse

CGA-960 Nitrogen NF Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB96054-28	3000 PSI 165° fuse
SHW-KVAB96054-32	3360 PSI 165° fuse

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB96044F-28	3000 PSI 165° fuse
SHW-KVAB96044F-32	3360 PSI 165° fuse

CGA-965 Nitrogen/Oxygen Mixtures Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB96554-28	3000 PSI 165° fuse
SHW-KVAB96554-32	3360 PSI 165° fuse

CGA-973 Medical Mixtures Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVAB97354-28	3000 PSI 165° fuse
SHW-KVAB97354-32	3360 PSI 165° fuse

1/2" NGT Tapered Thread

Part Number	Safety
SHW-KVAB97344F-28	3000 PSI 165° fuse
SHW-KVAB97344F-32	3360 PSI 165° fuse

Medical Post Valve Socket

This valve socket has been developed to easily remove or reinstall the Medical Post Valve without damaging the valve.

Part # VT-PV-SVM

Rev: 11/22/13

Medical Valves

KVAB Series: Repair Instructions

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

REPAIR INSTRUCTIONS FOR KVAB SERIES MEDICAL VALVES

DISASSEMBLY OF VALVE

1. Place the valve assembly into a vise or similar holding fixture, taking care not to damage the inlet or outlet threads. The holding fixture must securely grip the valve body on the wrench flats so that no damage is done to the internal bores, external threads, outlet, or pressure relief device.
2. Remove any handwheels, toggles or other opening devices that are affixed to the valve stem per the instructions below.
   a. To remove a toggle lever, press the pin out using a press. Remove the toggle lever from the stem.
   b. To remove a handwheel, use a straight blade screw driver to lift both retaining ears on the hand wheel and pry the handwheel off.
3. Chamber
   a. Using a $^{13}/_{16}$ socket or hex box wrench, remove the bonnet by turning it counter clockwise.
   b. Remove the copper gasket, being careful not to scratch the gasket sealing surface on the valve body.
   c. With the upper stem still in place, turn the upper stem counter clockwise to loosen the lower plug. As the lower plug is loosened, it will rise in the chamber and will push out the spring. Remove the spring as well as the lower plug.
   d. Remove the o-ring, back-up rings and packing from the stem.
4. Pressure Relief Device (PRD)
   a. Remove the PRD by turning it counter clockwise using the tool indicated below.
   b. If the plug is slotted, use the proper size straight bladed screw driver.
   c. If the plug is internal hex broached, use a $^{3}/_{16}$ allen wrench.
   d. If the plug is an external hex, use a $^{3}/_{8}$ hex box wrench or socket wrench.
   e. If the plug is Torx broached, use a Torx #30 driver.
   f.. If the rupture disc and the gasket remain the valve body after the plug is removed, use a sharp pointed instrument inserted through the CENTER of the rupture disc and carefully pry up to remove them from the valve body. Do not damage the sealing surface on the valve body.

INSPECTION OF VALVE AND COMPONENTS

1. Valve Body
   a. Inspect the valve body chamber bore for dirt, debris or damage. Where possible, blow out the valve body chamber using clean, dry, Compressed Air or Nitrogen to remove any foreign particles.
   b. If the valve body is damaged, do not attempt to repair. Order a new valve assembly.
2. Components
   a. Inspect the bonnet for damage to the threads, sealing surfaces, and plating. If damaged, replace the bonnet.
   b. Inspect the copper gasket for damage and replace if necessary.
   c. Inspect the spring for damaged or cracked coils and replace if necessary.
   d. Inspect the stem shaft and square for straightness. If the stem is damaged, twisted or bent, replace the stem. Inspect the top side of the stem shoulder where the packing seals. If there are any signs of damage to this shoulder area, replace the stem. Look for cracks or separation in the area where the shoulder meets the stem. If a crack or separation is found, replace the stem.
   e. Always discard and replace the lower plug, o-ring, back-up rings and packing.
   f. Always discard and replace the PRD.

ASSEMBLY OF VALVE

NOTE: The KVAB Medical Valves are used in the medical industry and in oxygen saturated environments. All part must be clean, free of oil, chips and other contaminant particles before beginning assembly. Contaminant particles can ignite in the presence of oxygen. Check all plated parts before and after assembly to make sure they are completely plated and that they are not chipped or scratched.

NOTE: KVAB Medical Valves require no lubrication on any internal components except the stem o-ring and the copper gasket. The lubrication used on these parts MUST be oxygen compatible. Sherwood recommends the use of Christo-lube® MCG111, Fluorolube® GR362, Krytox® 240AB or an equivalent lubricant.

1. Chamber
   a. Install the new lower plug into the valve chamber with the square hole facing up and the seat down. Using the stem as a driver, screw the lower plug into the valve chamber by turning it clockwise, until fully seated. Do not use a wrench to install, as over-tightening will damage the seat in the lower plug. Remove the stem from the valve chamber.
   b. Place the spring into the square hole of the lower plug inside the valve assembly.
   c. Place the bonnet and stem assembly, with the round side of the stem down, into the valve chamber through the top of the spring that is inside the square hole of the lower plug. Once the round portion of the lower stem is inserted into the spring, make sure that the square drive portion of the lower stem is inserted into the square hole of the lower plug.
   d. Install a new, lightly lubricated copper gasket on top of the valve, making sure it is properly seated into the gasket recess.
   e. Using a $^{3}/_{16}$ socket and a calibrated torque wrench, tighten the bonnet to 25-30 ft. lbs.
   f. To ensure free and smooth operation, open and close the valve several times, by turning the stem.

REPAIR INSTRUCTIONS FOR KVAB SERIES MEDICAL VALVES

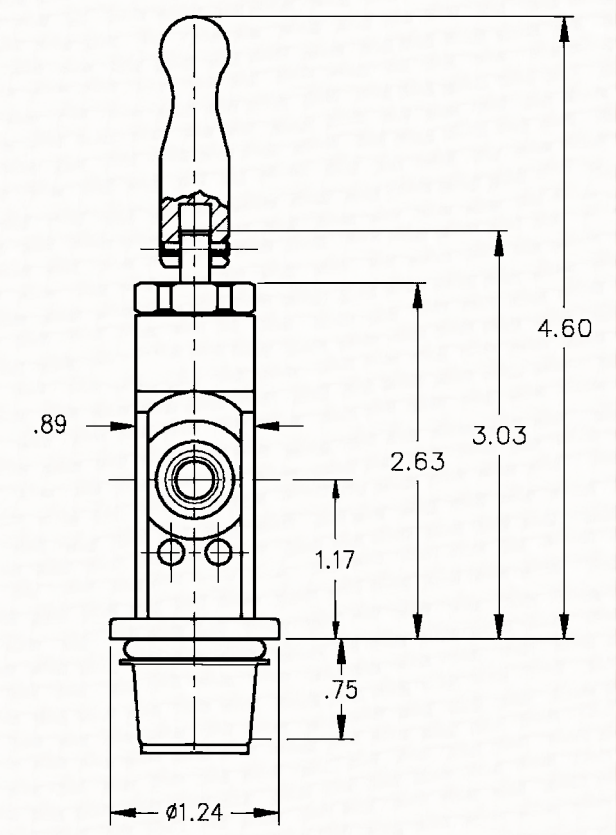
ASSEMBLY OF VALVE

2. Pressure Relief device (PRD)
   Note: A valve assembly used for liquid gases, such as carbon dioxide and nitrous oxide, must NOT contain fusible metal in the PRD plug in accordance with the Compressed Gas Association (Publication S-1.1).
   a. Replacement pressure relief devices are supplied as a complete assembly, including the plug, rupture disc and gasket.
   b. Screw the PRD into the safety port until hand tight. Tighten the PRD per the instructions below.
   c. Internal hex type: Using a calibrated torque wrench with a T30 Torx Driver attachment, tighten to 50-65 in. lbs. Over torquing will damage the PRD.
   d. External hex type: Using a calibrated torque wrench with a hex socket attachment, tighten to 80-100 in. lbs. Over torquing will damage the PRD.
3. Opening Devices
   a. Attach any handwheels or toggles to the valve stem per the instructions below.
   b. If the valve assembly has a toggle, install the toggle lever and pin to the top of the stem.
   c. If the valve assembly has a handwheel, place the handwheel onto the stem with the retaining ears down. Push the handwheel down until the retaining ears snap on to the undercut area of the stem.

TESTING

1. Thoroughly test each repaired valve assembly by inserting and tightening the valve assembly into a cylinder or suitable test fixture. Pressurize the valve assembly with an inert gas to the working pressure of the cylinder of intended use.
2. With outlet suitably plugged, open the valve assembly slowly by turning the stem counter clockwise. Using leak detection solution or equipment, check the bonnet thread, stem and pressure relief device for leaks.
3. Close the valve assembly by turning the stem clockwise. Remove the outlet plug and check for seat leakage through the outlet using proper leak detection solution or equipment.
4. If any leakage is detected, in the open or the closed position, the necessary repairs must be made before using the valve assembly.

DIMENSIONS FOR KVAB SERIES MEDICAL VALVES



Medical Valves

KVMB Series: Post Medical Valves for Use in Magnetic Resonance Imaging (MRI) Environments

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Special construction process significantly reduces magnetic attraction. Tested by University of Pittsburgh Medical Center (UPMC) - meets all known tests for MRI compatible components used in conjunction with a magnetic resonance imager for Level 3 Tesla requirements.

KEY FEATURES & BENEFITS

- Clearly identified for hospital settings.
- ASTM standard F 2503-05 marking.
- Nominal stroke is 1.5 turns. Full flow at 1/3 turn.
- Strong, durable body is made from extruded brass rod and coated with a protective chrome finish.
- Exceptional machining finishes for low torque sealing and long packing life.
- Chamber design protects threads and stem from damage.
- Durable lower plug is made of tough naval brass and coated with PTFE for lubricity.
- Pressure Relief Device (PRD) is a single unit to ensure proper assembly and to resist tampering.
- 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.
- Copper sealing gasket provides permanent, leak-resistant bonnet seal.
- All parts cleaned and oil free.
- Designed for use with all yokes made to CGA 860 drawing specifications.
- Available in wrench, toggle, or handwheel type.
- Cleaned for oxygen service and oil free per CGA G-4.1

Part # SHW-KVMB87054-28R

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

DESIGN SPECIFICATIONS	English	Metric
Maximum Working Pressure	3,000 PSIG	
Burst Pressure	12,000 PSIG	
Operating Temperature	Min: -50˚F Max: 120˚F	-45˚C 55˚C
Storage Temperature	Min: -65˚F Max: 155˚F	-54˚C 68˚C
Leak Rate Internal/External	$1X10^{-5}$ cc/sec	
Minimum Cycle Life	5,000 Cycles	5,000 Cycles
Cv Flow Factor	Standard: .120	Standard: .120

MRI Stamped Medical Post Valves

CGA 870 Medical Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVMB87054-32R	3360 PSI 165° fuse

CGA 910 Medical Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVMB91051-28	3000 PSI
SHW-KVMB91051-32	3360 PSI

CGA 940 Medical Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVMB94054-28	3000 PSI 165° fuse
SHW-KVMB94054-32	3360 PSI 165° fuse

CGA 950 Medical Post Valves

3/4" UNF Straight Thread

Part Number	Safety
SHW-KVMB95054-32	3360 PSI 165° fuse

Rev: 10/27/14, 7/1/13

Medical Valves

GV MRI Series: Global Valves for Use in MRI Environments

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

High Capacity Oxygen Valve designed for use in Magnetic Resonance Environments (MRI), specifically when installed on high-capacity aluminum cylinders.

KEY FEATURES & BENEFITS

- Supports aluminum cylinder capacity to 265 cu. ft. with various straight-threaded inlet sizes to fit your needs
- Special construction process significantly reduces magnetic attraction
- Tested and meets all known tests for MRI-compatible components used in conjunction with a magnetic resonance imager for Level 3 Tesla requirements
- Clearly identified for hospital settings with ASTM standard F 2503-05 markings
- Cleaned for oxygen service and oil free per CGA G-4.1
- 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 which provides excellent flow characteristics, ensures proper assembly and tamper resistance
- Metal-to-metal seal below bonnet threads prevents pressure in the threads at the top of the 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

Ordering Info GV MRI Series: Global Valves

Part Number	Gas Service @ 70˚ F	CGA	Outlet Thread Size	Inlet Thread Size
SHW-GV32051-XXMRI	0–3000 PSI	320	.825–14 NGO RH Ext.	1-1/8–12 UNF
SHW-GV32051-XX-75MRI	0–3000 PSI	320	.825–14 NGO RH Ext.	3/4–16 UNF
SHW-GV32651-XXMRI	0–3000 PSI	326	.825–14 NGO RH Ext.	1-1/8–12 UNF
SHW-GV32651-XX-75MRI	0–3000 PSI	326	.825–14 NGO RH Ext.	3/4–16 UNF
SHW-GV34651-XXMRI	0–3000 PSI	346	.825–14 NGO RH Ext.	1-1/8–12 UNF
SHW-GV34651-XX-75MRI	0–3000 PSI	346	.825–14 NGO RH Ext.	3/4–16 UNF
SHW-GV54051-XXMRI	0–3000 PSI	540	.903–14 NGO RH Ext.	1-1/8–12 UNF
SHW-GV54051-XX-75MRI	0–3000 PSI	540	.903–14 NGO RH Ext.	3/4–16 UNF
SHW-GV58051-XXMRI	0–3000 PSI	540	.165–14 NGO RH Int.	1-1/8–12 UNF
SHW-GV58051-XX-75MRI	0–3000 PSI	540	.165–14 NGO RH Int.	3/4–16 UNF

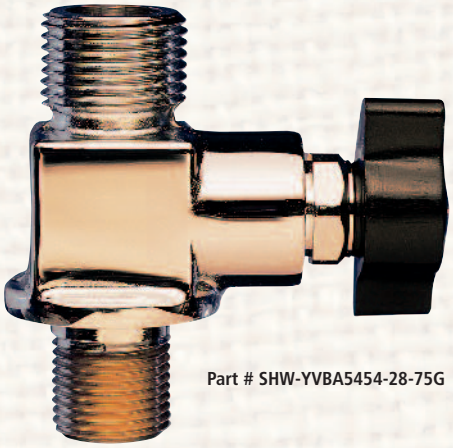
Rev: 10/27/14

Medical Valves

YVBA Series: Vertical Outlet Oxygen Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Compact and designed for home healthcare use on small medical aluminum and composite cylinders.



Part # SHW-YVBA5454-28-75G

KEY FEATURES & BENEFITS

- Compact design
- Chamber designed for easy operation
- Aluminum Silicon Bronze stem design for dependable service and long life
- Durable lower plug made of tough naval brass resists wear
- Lower plug is PTFE coated to add lubricity, which minimizes seizing and galling especially under high-pressure operation
- Internal bonnet gasket seal resists damage to chamber sealing area
- Compact molded Lexan® polycarbonate handwheel is easy to operate
- Single unit, compact Pressure Relief Device incorporates 165° F fusible metal backing to resist premature rupture and provide maximum cylinder protection
- Chrome plated for corrosion resistance and cosmetic appeal
- Cleaned for oxygen service and oil free per CGA G-4.1

Design Specifications

	English	Metric
Max. Working Pressure:	3000 PSI	207 Bar
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:	3–5 in.-lbs.	.3–.6 N-m
Closing Torque:	5–7 in.-lbs.	.6–.8 N-m
Bonnet Installation Torque:	25–30 ft.-lbs.	33.9–7.3 N-m
Pressure Relief Device Installation Torque:	50–65 in.-lbs.	5.6–7.3 N-m
Stem Nut Installation Torque:	Nut Flush with Top of Stem	

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
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

Materials of Construction

Part Number	Description	Materials of Construction
SHW-1-3606-14	Bonnet	Brass, UNS ASTMB-16-53 Chrome Plated
SHW-3506-10	Gasket	Copper
SHW-1389-2D	Handwheel	Lexan®
	Plug and Seat Assembly	
SHW-3506-9	Plug	Aluminum Silicon Bronze C34200
	Seat	Nylon, Zytel 101 or Celanese 1000-11
SHW-3506-18	Packing	Viton
SHW-3506-7	Packing	PTFE
SHW-9-3011A-2	Panel Mount Nut (as required)	Brass C36000, Chrome Plated
SHW-19-3506-11	Spring	Type 302 Stainless Steel, Passivated
SHW-9-3506-12	Stem	Aluminum Silicon Bronze Alloy #708-8 Nickel Plated
SHW-1-3506-8	Stem Nut	Brass C36000

Ordering Info YVBA Series: Vertical Outlet Oxygen Valves

3/4" UNF Straight Thread, Chrome

Part Number	Description
SHW-YVBA5454-28-75G	3000 PSI 165˚ fuse Plug with Gauge Port
SHW-YVBA5454-32-75G	3360 PSI 165˚ fuse Plug with Gauge Port
SHW-YVBA5454-48-75GH	5000 PSI 165˚ fuse Plug with Gauge Port & Handwheel Knob
SHW-YVBA5454-48-75G	5000 PSI 165˚ fuse Plug with Gauge Port

5/8" UNF Straight Thread, Chrome

Part Number	Description
SHW-YVBA5454-28-62	3000 PSI 165˚ fuse Plug
SHW-YVBA5454-32-62	3360 PSI 165˚ fuse Plug
SHW-YVBA5454-35-62	3775 PSI 165˚ fuse Plug
SHW-YVBA5454-38-62	4000 PSI 165˚ fuse Plug

Special features available:

- CG-1 Pressure Relief Devices without fusible metal
- Hex-style, exhaust-equalizing Pressure Relief Device plugs
- .750–16 UNF inlets with O-ring glands in conformance with military specifications
- Round, barrel-style Lexan® handwheel

Ordering Info Key Replacement Parts

Part Number	Description
SHW-19-3506-11	Spring
SHW-3506-9	Lower Plug
SHW-6521S	Handwheel

Ordering Info Inlet O-Ring for Straight Threaded YVB Valves

Part Number	Size	Material
SHW-G016B	.625 UNF	Buna-N
SHW-G016T	.625 UNF	Buna-N
SHW-G210A9	.750 UNF	Buna-N
SHW-G210T	.750 UNF	PTFE
SHW-G210J	.750 UNF	Viton®

Rev: 3/18/16, 10/27/14

Specialty Applications

YVA Series: High Pressure Line Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

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

Part # SHW-YVA3010A

Design Specifications

	English	Metric
Max. Working Pressure:	6000 PSI	414 Bar
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	

Standards Conformance

CGA V-9	Standard for Gas Cylinder Valves
A-A-59860	US General Services Administration Standards for Gas Cylinder Valves

Materials of Construction

Description	Materials of Construction
Body	Brass C37700 Chrome Plated
Bonnet	Brass, UNS ASTMB-16-53 Chrome Plated
Gasket	Copper
Handwheel	Lexan®
Handwheel Cap	Lexan
Lower Plug	Aluminum Silicon Bronze C64200
Lower Plug Seat	Nylon: Zytel 101 or Celanese 1000-11
Packing (3506-18)	Viton®
Packing (3506-7)	PTFE
Panel Mount Nut (as required)	Brass C36000, Chrome Plated
Spring	Type 302 Stainless Steel, Passivated
Stem	Aluminum Silicon Bronze Alloy #708-8 Nickel Plated
Stem Nut	Brass C36000

Ordering Info YVA Series: Line Valves, Chrome

Line Valves, Chrome

Part Number	Description
SHW-YVA3010	1/4" NPT x 1/4" NPT
SHW-YVA3010A	1/4" NPT x 1/4" NPT, Panel Mount

Rev: 10/28/14

Medical Valves

OxyGen 1 Series:
Oxygen Valves with Integrated Pressure Regulators

VC Model

KEY FEATURES & BENEFITS

Compact, Easy-to-Use Design

- Designed for ambulatory service applications, combines on/off with reduced pressure for direct patient care
- 35% lower profile than comparable models provides more efficient racking and storage capabilities.
- 15%-25% lighter weight than comparable models combined with ergonomically designed shroud with integral carrying handle improves mobility and reduces user fatigue.
- Ergonomically designed shroud with carrying handles improves mobility and reduces user fatigue
- Shroud circumference is sized to fit within the foot-print diameter of standard Medical-E cylinders.

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 Oxy-Gen I unit is assigned a unique serial number for positive identification.
- Cleaned for oxygen service and oil free per ASTM G-93

Convenient

- Pressure gauge located at the top of the unit is protected by the shroud-handle and provides excellent visibility through a full range of cylinder positions.
- Pressure gauge directly reads cylinder pressure. (no shut-off valves interrupt flow to the gauge)

Capable

- Protective shroud does not require removal during the filling process.
- Fill and evacuation rates are equivalent to standard medical post valves and deliver substantial time and money savings on the fill line.

Durable

- Shroud material is made of a durable high performance Nylon/ABS polymer blend and exhibits excellent toughness and chemical and UV resistance.
- Non-rotating valve seat extends seat life and reduces the potential of particulates generated by rotating seats.

Rev: 10/28/14

OxyGen 1 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

OXY-GEN 1 SYSTEMS ARE AVAILABLE IN TWO DISTINCT FLOW RANGES

From the gentlest pediatric treatment to the most demanding life preserving EMS requirements, Sherwood offers an Oxy-Gen 1 system for every portable oxygen therapy application.

OXY-GEN 1 Model STANDARD FLOW

Flow Range
- 0 - 15 L/Min

Flow Adjustments
0, 1/4, 1/2, 1, 2, 3, 4, 6, 8, 10, 12, 15 Liter/Minute

Applications
- Hospital – Pediatrics

OXY-GEN 1 Model HIGH FLOW

Flow Range
- 0 25 L/Min

Flow Adjustments
0, 1/4, 1/2, 1, 2, 3, 4, 6, 8, 10, 15, 25 Liter/Minute

Applications
- EMS/EMR

OPTIONS AND DESIGN FEATURES

Fill Connection
- CGA-540 Outlet (TL2051 VC fill adapter required for model Oxy-Gen-1VC

Cylinder Service Pressure Options
- 0 - 2015 psig
- 0 - 2216 psig
- 0 - 3000 psig

Outlet Connection
- Barbed fitting for 1/4" I.D. hose

Optional 50 PSI DISS Connection

Inlet Thread Options
- 3/4-16 UNF-2A O-Ring Seal
- 5/8-18 UNF-2A O-Ring Seal
- 1/2-14 NGT Tapered Thread

Optional Eductor Tube

MRI TESTED TO 3 TESLA

(in conjunction with a standard aluminum Medical-E cylinder)

CLASSIFIED AS MR CONDITIONAL PER ASTM F 2503-05

Medical Valves

OxyGen 1 Series: Valve / Regulator Combination

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

The Oxy-Gen 1 Valve / Regulator is Available in Two Select Models

Oxy-Gen-1V

DESIGN FEATURES AND BENEFITS

- Filling process with standard CGA-540 fill connection.
- Flow control knob also acts as the principal shut-off device.
- Standard post valve stem configuration is compatible with existing fill plant drive tools.
- Fill and evacuation rates are similar to standard post medical valve statistics.
- Unique single-control operational design is therapist friendly.
- Sherwood quality, craftsmanship, premium materials and service are standard features of every Oxy-Gen-1V produced.

Oxy-Gen-1VC

DESIGN FEATURES AND BENEFITS

- Check valve design prevents pressure to the fill connection during therapy applications.
- Filling process requires a special 540 connection tool to over-ride the back check mechanism.
- Master shut-off valve isolates pressure from both the regulator and connection outlet.
- Protective shroud shields the master shut-off valve from unintended operation of the hand-wheel.
- Sherwood quality, craftsmanship, premium materials and service are standard features of every Oxy-Gen-1VC produced.

OXY-GEN 1 Fill Shut Off Valves
1/2" NGT Tapered Thread

Part Number	Safety	Description
SHW-VRAM4TV-32-15	3360 PSI	0-15 LPM CGA 540
SHW-VRAM4TV-32-15D	3360 PSI	0-15 LPM CGA 540 with DISS Connection

3/4" - 16 UNF Straight Thread

Part Number	Safety	Description
SHW-VRAM5TV-32-75-15	3360 PSI	0-15 LPM CGA 540, "V" Valve Regulating
SHW-VRM5V-32-75-15	3360 PSI	0-15 LPM CGA 540
SHW-VRAM5TV-32-75-25	3360 PSI	0-25 LPM CGA 540
SHW-VRAM5TV-32-75-15D	3360 PSI	0-15 LPM CGA 540 with DISS Connection, "V" Valve Regulating
SHW-VRM5V-32-75-15D	3360 PSI	0-15 LPM CGA 540 with DISS Connection
SHW-VRM5V-32-75-25D	3360 PSI	0-25 LPM CGA 540 with DISS Connection

Fill Tool for OXY-GEN 1

Part Number	Description
SHW-TL2051VC	Sherwood Fill Tool for OXY-GEN1 Master Valve

OXY-GEN 1 "VC" Master Shut Off Valves
3/4" - 16 UNF Straight Thread

Part Number	Safety	Description
SHW-VRAM5TVC-32-75-15	3360 PSI	0-15 LPM, CGA 540
SHW-VRAM5TVC-32-75-15D	3360 PSI	0-15 LPM, CGA 540 with DISS Connection
SHW-VRAM4TVC-32-15	3360 PSI	0-15 LPM, CGA 540
SHW-VRAM4TVC-32-15D	3360 PSI	0-15 LPM, CGA 540

Rev: 3/18/16, 10/28/14; 7/1/13

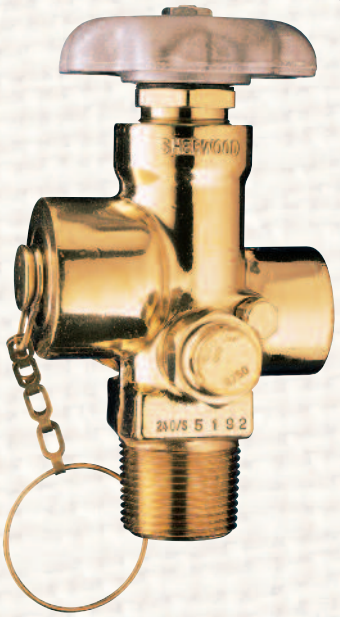
Industrial Gas Valves

BV Series:

Hi/Lo Valves with Built-In Regulators

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Designed for use in larger capacity lightweight 4500 PSI cylinders, the BV Series features an integral regulator that reduces gas pressure on the 3000 PSI max outlet to 700–1000 PSI, enabling field use of a common UL® Rated 3000 PSI regulator.



Valves with other size inlets and outlets are special production.

Please call Ratermann for availability.

KEY FEATURES & BENEFITS

- Unique dual outlet design enables use of lower or higher cylinder Working Pressure from the same valve/cylinder package
- Provides quick fill capability — no special filling or withdrawal adapters needed
- Strong, durable forged brass body manufactured by Sherwood to specifications stricter than most commercial forging specifications
- High-temperature aluminum alloy handwheel with large drainage holes
- Integral stainless steel tang helps prevent internal stem breakage
- Durable lower plug made of tough naval brass resists wear
- Lower plug is PTFE coated to add lubricity, which minimizes seizing and galling especially under high-pressure operation
- Internally threaded chamber design promotes longer life and helps protect valve body chamber threads from damage
- Nickel 201 rupture disc resists premature rupture that may be caused by corrosive ambient environments
- Inert PTFE packing provides leak-free stem seal, long cycle life and resistance to corrosion
- Regulator designed for long service life and tested to in excess of 16,000 cycles
- Pressure Relief Device strategically located in regulated pressure outlet prevents cylinder pressure from reaching downstream equipment
- Pressure Relief Device supplied standard for 4500 PSI cylinder with a test pressure of 1.5 times Working Pressure
- Regulated Outlet Pressure Relief Device rupture pressure is 2800–3000 PSI
- High-pressure outlet plug removal tool (Part Number SHW-680PW-2) supplied separately to cylinder filling plants only

Materials of Construction

Part Number	Description	Materials of Construction
N/A	Body	Brass C37700
N/A	Filter	Sintered Bronze 65–100 Micron
SHW-1250B-40 or SHW-1250B-40A	Plug and Seat Assembly Plug Seat	 Nylon Zytel 101 Naval Brass C48500 PTFE Coated
SHW-11250-2	Bonnet	Brass C37700
SHW-1401	Handwheel	Aluminum A380
SHW-47-1003	Nut	AISI 1010 Steel Corrosion Protective Coating
SHW-45-1012	Spring	Hard Drawn Spring Steel Cadmium or Zinc Plate
SHW-1413	Washer, Handwheel	High Density Gray Fiber Parrafin Coated
SHW-1250-6	Packing	Virgin PTFE
SHW-680P-20	Plug Assembly Ring Chain Plug O-Ring	 Brass Wire Brass Brass C36000 Buna-N
N/A	Pin	Carbon Steel C1215 Zinc Plated
N/A	Piston & Spring Assembly Piston Seat O-Ring Back-up Ring Spring Shim	 Brass C36000 1/2 Hard PCTFE Viton 75+ or -5 Durometer PTFE Stainless Steel 301 Passivated Brass C26000
N/A	Gasket	Copper Annealed Soft
SHW-4000-60-29	Safety Plug Assembly Body Retainer Burst Disc	 Brass C36000 Copper C11000 Nickel 201
SHW-650-19F9-65	Safety Cap Assembly Gasket Burst Disc Safety Cap	 Copper CDA 110 Nickel 201 Brass C36000

Hi/Lo Pressure Regulating Dual Outlet Valve
Regulated Outlet Pressure: 700 - 1100 PSIG @ 4500 PSIG Inlet

High Pressure Outlet Pressure Rating: 5,500 PSI Max

Part Number	Regulated Outlet	High Pressure Outlet Fill Port	Inlet Threads
SHW-BV6861-65-580T	CGA 580	CGA 680	3/4-14 NGT +24 Oversize
SHW-BV70161-65-540	CGA 540	CGA 701	3/4-14 NGT +24 Oversize

Accessory

Part Number	Description
SHW-680PW-2	Spanner Wrench Tool

Hi/Lo Valves with Built-in Regulators

Part Number	Gas Service	High Pressure Fill Port Connection	Regulated Outlet Connection	Regulated Outlet Pressure	Inlet	Cap & Plug
SHW-BV6861-65-580T	Inert Gases	CGA 680 (high) .965–14 NGO RH Int.	CGA 580 (low)	700–1100 PSI @ 4500 PSI Inlet	¾"–14 NGT 24 Threads Oversize	Yes
SHW-BV6861-65-580TL	Inert Gases	CGA 680 (high) .965–14 NGO RH Int.	CGA 580 (low)	700–1100 PSI @ 4500 PSI Inlet	¾"–14 NGT	No

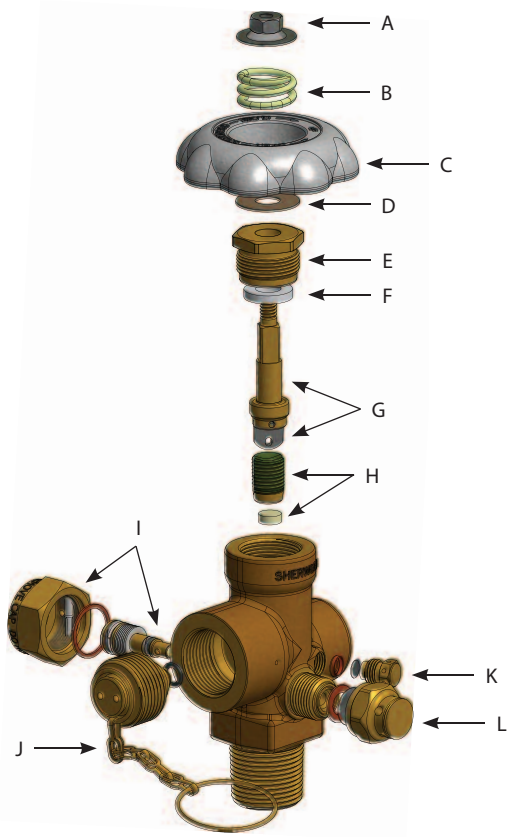
Rev: 10/28/14

Industrial Gas Valves

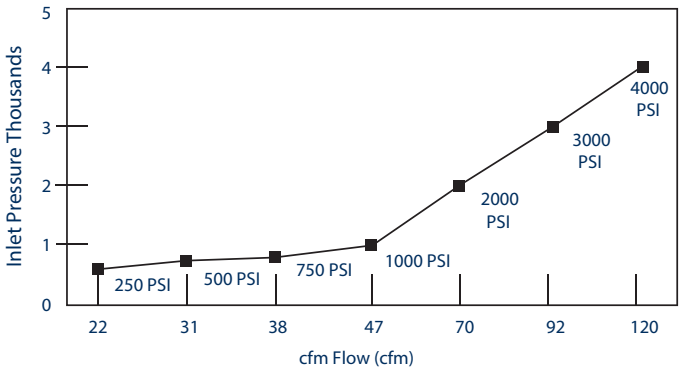
BV Series: Hi/Lo Valves with Built-In Regulators

Parts Breakdown for BV Series

Description		Part Number
A.	Handwheel Nut	SHW-47-1003
B.	Handwheel Spring	SHW-45-1012
C.	Handwheel	SHW-1401
D.	Handwheel Washer	SHW-1413
E.	Bonnet	SHW-1250-2
F.	Packing	SHW-1250-6
G.	Stem & Tang Assembly	SHW-1250-30
H.	Plug & Seat Assembly	SHW-1250B-40A
I.	Piston & Spring Assembly	Not sold separately
J.	Plug Assembly	SHW-680P-20
K.	Safety Plug Assembly	SHW-4000-60-29
L.	Safety Cap Assembly	SHW-650-19F9-65



BV Series Regulated Outlet Flow



Design Specifications	English	Metric
Test Pressure	4500 PSI	310 Bar
Proof Pressure	20,000 PSI	1379 Bar
Regulated Outlet Pressure @ 4500 PSI inlet Pressure	700–1100 PSI	48–76 Bar
Operating Temperature Range	-50° F → +120° F	-45° C → +49° C
Storage Temperature Range	-65° F → +155° F	-54° C → +68° C
Minimum Cycle Life	5000 Cycles	5000 Cycles
Operating Torque	20–30 in.-lbs.	2.2–3.4 N-m
Closing Torque	10–20 in.-lbs.	1.1–2.2 N-m
Bonnet Installation Torque	70–80 ft.-lbs.	95–108.4 N-m
Safety Cap Installation Torque	30–40 ft.-lbs.	40.6–54.2 N-m
Stem Nut Installation Torque	Nut flush with top of stem	Nut flush with top of stem
650-19 Series PRD Installation Torque	30–40 ft.-lbs.	40.3–53.7 N-m
4000-60-29 PRD Installation Torque	70–80 in.-lbs.	94.3–107.7 N-m

Standards Conformance	
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
A-A-59860	U.S. General Services Administration Standards for Gas Cylinder Valves

Chlorine Gas Valves Basic & Robust Valves

Technical Information

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

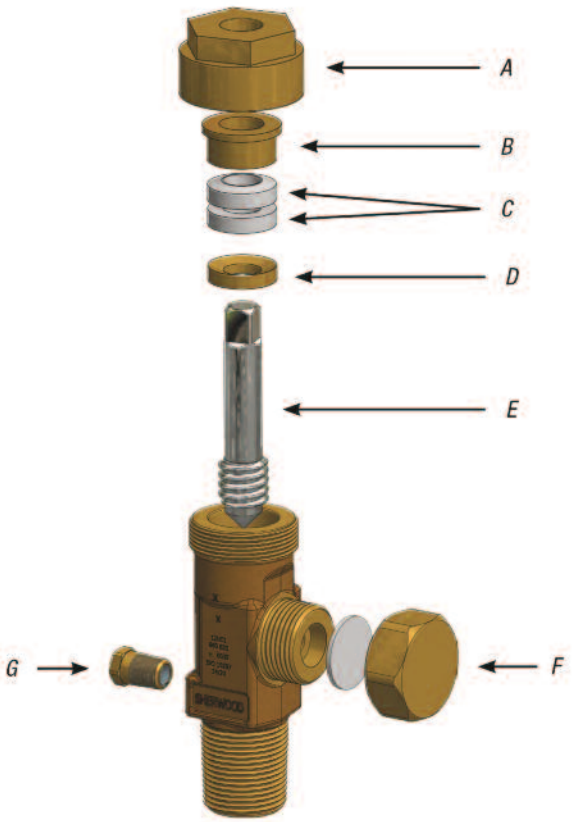
Specifications	English	Metric
Maximum Working Pressure	500 PSI	34 BAR
Burst Pressure	7200 PSI	496 BAR
Operating Temperature Range	-50° F → +149° F	-45° C → +65° C
Storage Temperature Range	-60° F → +149° F	-51° C → +65° C
Leak Rate Internal/External	1×10^{-6} atm cc/s	1×10^{-6} mL/sec
Operating Torque	5–6 ft.-lbs.	6.8–8.1 N-m
Closing Torque	25 ft.-lbs.	33.9 N-m
Packing Nut Installation Torque	25–35 ft.-lbs.	33.9–47.4 N-m
Stem Installation Torque	10–12 ft.-lbs.	13.5 – 16.3 N-m
Fusible Plug Installation Torque	12–15 ft.-lbs.	16.3–20.3 N-m
Yoke Torque	Not to exceed 35 ft.-lbs.	Not to exceed 47.4 N-m
Minimum Cycle Life	2000 Cycles	2000 Cycles
Cv Flow Factor	1210A .733 1214A 1.88	1210A .733 1214A 1.88

Materials of Construction	
Description	**Materials of Construction**
Body	Aluminum Silicon Bronze C64210
Stem	Monel® ASTM B164-84 Type UNS NO4400 or NO4405
Packing Nut	Brass C36000
Packing Collar	Naval Brass C48500
Packing Gland	Brass C36000
Packing	PTFE or Garlock® 6130
Outlet Cap	Brass C36000
Outlet Cap Gasket	PTFE
Fusible Plug PRD	Naval Brass C48500 (with 165° F fusible metal)

Standards Conformance	
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 Standards
Chlorine Institute Pamphlet 17	Cylinder and Ton Container Procedure for Chlorine Packaging and Valve Design Criteria
ISO 11363-1	25E Inlet Thread Specifications
ISO 10297	International Standard for Cylinder Valves Design Specifications
TPED/ADR	Transportable Pressure Equipment Directive

Parts Breakdown for Chlorine Gas Valves

Description	Part Number
A. Packing Nut	**SHW-P1210-3 (Basic) or SHW-P1210A-3 (Robust)**
B. Packing Gland	**SHW-P1210-4**
C. Packing (2 required)	**SHW-P1210-6 (Garlock 6130) or SHW-P1210-6T (PTFE)**
D. Packing Washer	**SHW-P1210-5N**
E. Stem	**SHW-P1210-2M**
F. Outlet Cap Assembly Outlet Cap Only Outlet Cap Gasket	**SHW-P1210-11** **SHW-P1210-11** **SHW-P10-G-T**
G. Fusible Plug	**SHW-5853T Series (Cylinder Valve) SHW-1333 or SHW-1303 Series (Ton Container Valves)**



N-3/16/16

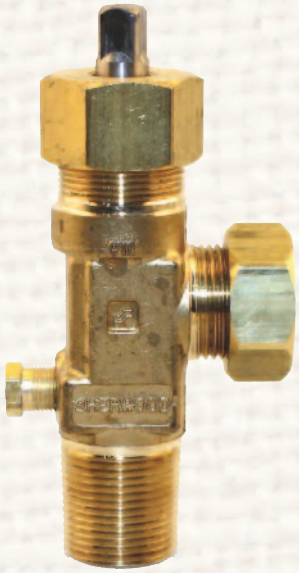
Chlorine Cylinder & Ton Container Basic Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

BASIC

KEY FEATURES & BENEFITS

- Manufactured in conformance to Chlorine Institute Pamphlet 17
- One-piece Monel® stem offers exceptional durability and positive shut-off in chlorine and other corrosive gas service
- Choice of PTFE (shown here) or Garlock® 6130 packing for easy operation and durable leak-resistant stem seal
- Large wrench flats on valve body for easy installation
- Robust Aluminum Silicon Bronze (C64210) valve body offers corrosion resistance



CGA 660 / 820 , CL-1 Thread,
158° Fuse-Metal Pressure Relief

Part # SHW-1210-B1

Part # SHW-1214X1-B1

Standard Chlorine Institute Valve Design
Cylinder Wrench Operated Packed Valves

3/4-14 NGT, PTFE Packing

Part Number	Description
SHW-1210X1-B1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210X1-B2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210X1-B3	CGA 660 / 820 , CL-3 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210X1-B4	CGA 660 / 820 , CL-4 Thread, 158° Fuse-Metal Pressure Relief

3/4-14 NGT, Garlock Packing

Part Number	Description
SHW-1210-B1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210-B2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210-B3	CGA 660 / 820 , CL-3 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210-B4	CGA 660 / 820 , CL-4 Thread, 158° Fuse-Metal Pressure Relief

Replacement Bodies for Chlorine Institute Cylinder Valves

Part Number	Description
SHW-P1210-30-B1T	3/4-14 NGT with Safety Plug, Tested, CL-1
SHW-P1210-30-B2T	3/4-14 NGT with Safety Plug, Tested, CL-2
SHW-P1210-30-B3T	3/4-14 NGT with Safety Plug, Tested, CL-3
SHW-P1210-30-B4T	3/4-14 NGT with Safety Plug, Tested, CL-4

Standard Chlorine Institute Valve Design
Ton Container Wrench Operated Packed Valves

3/4-14 NGT, PTFE Packing

Part Number	order	Description
SHW-1214X1-B1		CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1214X1-B2		CGA 660 / 820 , CL-2 Thread, No Pressure Relief
SHW-1214X1-B3		CGA 660 / 820 , CL-3 Thread, No Pressure Relief
SHW-1214X1-B4		CGA 660 / 820 , CL-4 Thread, No Pressure Relief

3/4-14 NGT, Garlock Packing

Part Number	Description
SHW-1214-B1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1214-B2	CGA 660 / 820 , CL-2 Thread, No Pressure Relief
SHW-1214-B3	CGA 660 / 820 , CL-3 Thread, No Pressure Relief
SHW-1214-B4	CGA 660 / 820 , CL-4 Thread, No Pressure Relief

Replacement Bodies for Chlorine Institute Cylinder Valves

Part Number	Description
SHW-P1214-1-B1T	3/4-14 NGT Tested, CL-1
SHW-P1214-1-B2T	3/4-14 NGT Tested, CL-2
SHW-P1214-1-B3T	3/4-14 NGT Tested, CL-3
SHW-P1214-1-B4T	3/4-14 NGT Tested, CL-4

Standard Chlorine Institute Valve Design
Cylinder Wrench Operated Packed Valves

1-11 1/2 NGT, PTFE Packing

Part Number	Description
SHW-1211X1-B1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1211X1-B2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief

1-11 1/2 NGT, Garlock Packing

Part Number	Description
SHW-1211-B1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1211-B2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief

Replacement Bodies for Chlorine Institute Cylinder Valves

Part Number	Description
SHW-P1211-30-B1T	1-11 1/2 NGT with Safety Plug, Tested, CL-1
SHW-P1211-30-B2T	1-11 1/2 NGT with Safety Plug, Tested, CL-2

Standard Chlorine Institute Valve Design
Ton Container Wrench Operated Packed Valves

1-11 1/2 NGT, PTFE Packing

Part Number	Description
SHW-1209X1-B1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1209X1-B2	CGA 660 / 820 , CL-2 Thread, No Pressure Relief

1-11 1/2 NGT, Garlock Packing

Part Number	Description
SHW-1209-B1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1209-B2	CGA 660 / 820 , CL-2 Thread, No Pressure Relief

Replacement Bodies for Chlorine Institute Cylinder Valves

Part Number	Description
SHW-P1209-1-B1T	1-11 1/2 NGT Tested, CL-1
SHW-P1209-1-B2T	1-11 1/2 NGT Tested, CL-2

Rev: 3/18/16, 7/1/13

Chlorine Cylinder & Ton Container Robust Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

The Sherwood Exclusive Robust Valve features a heavy-duty body and packing nut for increased load carrying capacity and resistance against stress corrosion and cracking.

ROBUST

Key Features & Benefits

- Approved per the Chlorine Institute Pamphlet 17 Alternate Design Criteria
- Design retains same outlet, inlets, pressure relief device, packing ring, packings, follower, outlet cap, wrenches, yoke and materials as the basic valve
- One-piece Monel® stem offers exceptional durability and positive shut-off in chlorine and other corrosive gas service
- Choice of PTFE (shown here) or Garlock® 6130 packing for easy operation and durable leak-resistant stem seal
- Large wrench flats on valve body for easy installation
- Robust Aluminum Silicon Bronze (C64210) valve body offers corrosion resistance

CGA 660 / 820 , CL-1 Thread,
158° Fuse-Metal Pressure Relief

Part # SHW-1210AX1-CL1

Alternate Valve Design
Cylinder Wrench Operated Packed Valves

3/4-14 NGT, PTFE Packing

Part Number	Description
SHW-1210AX1-CL1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210AX1-CL2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210AX1-CL3	CGA 660 / 820 , CL-3 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210AX1-CL4	CGA 660 / 820 , CL-4 Thread, 158° Fuse-Metal Pressure Relief

3/8-18 NPT, PTFE Packing

Part Number	Description
SHW-1210AX2-CL1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210AX2-CL1-CC	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief with Cap and Chain

3/4-14 NGT, Garlock Packing

Part Number	Description
SHW-1210A-CL1	CGA 660 / 820 , CL-1 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210A-CL2	CGA 660 / 820 , CL-2 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210A-CL3	CGA 660 / 820 , CL-3 Thread, 158° Fuse-Metal Pressure Relief
SHW-1210A-CL4	CGA 660 / 820 , CL-4 Thread, 158° Fuse-Metal Pressure Relief

Replacement Bodies for Chlorine Cylinder Valves

Part Number	Description
SHW-P1210A-1-CL1	3/4-14 NGT Robust Body with Safety Plug, Tested, CL-1
SHW-P1210A-1-CL2	3/4-14 NGT Robust Body with Safety Plug, Tested, CL-2
SHW-P1210A-1-CL3	3/4-14 NGT Robust Body with Safety Plug, Tested, CL-3
SHW-P1210A-1-CL4	3/4-14 NGT Robust Body with Safety Plug, Tested, CL-4

Alternate Valve Design
Ton Container Wrench Operated Packed Valves

3/4-14 NGT, PTFE Packing

Part Number	Description
SHW-1214AX1-CL1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1214AX1-CL2	CGA 660 / 820 , CL-2 Thread, No Pressure Relief
SHW-1214AX1-CL3	CGA 660 / 820 , CL-3 Thread, No Pressure Relief
SHW-1214AX1-CL4	CGA 660 / 820 , CL-4 Thread, No Pressure Relief

3/8-18 NPT, PTFE Packing

Part Number	Description
SHW-1214AX2-CL1-CC	CGA 660 / 820 , CL-1 Thread, No Pressure Relief with Cap and Chain

1/4-18 NPT, PTFE Packing

Part Number	Description
SHW-1214AX3-CL1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief

3/4-14 NGT, Garlock Packing

Part Number	Description
SHW-1214A-CL1	CGA 660 / 820 , CL-1 Thread, No Pressure Relief
SHW-1214A-CL2	CGA 660 / 820 , CL-2 Thread, No Pressure Relief
SHW-1214A-CL3	CGA 660 / 820 , CL-3 Thread, No Pressure Relief
SHW-1214A-CL4	CGA 660 / 820 , CL-4 Thread, No Pressure Relief

Replacement Bodies for Ton Container Valves

Part Number	Description
SHW-P1214A-1-CL1	3/4-14 NGT Robust Body Tested, CL-1
SHW-P1214A-1-CL2	3/4-14 NGT Robust Body Tested, CL-2
SHW-P1214A-1-CL3	3/4-14 NGT Robust Body Tested, CL-3
SHW-P1214A-1-CL4	3/4-14 NGT Robust Body Tested, CL-4

Rev: 3/18/16, 7/1/13

REPAIR INSTRUCTIONS FOR CHLORINE CYLINDER AND TON CONTAINER VALVES

DISASSEMBLY OF VALVE

A. Place the valve assembly into a vise or similar holding fixture. The holding fixture must securely grip the valve body on the wrench flats so no damage is done to the internal bores, external or internal threads, outlet, or fusible plug PRD.

B. Chamber

1. Using a 1¼ socket or hex box wrench, remove the packing nut by turning it counter clockwise.

2. Using a ⅜ square socket or open end wrench, remove the stem from the valve chamber by turning it counter clockwise. The packing gland, the two packings, and the packing collar will be removed with the stem.

3. Remove the packing gland, the two packings, and the packing collar from the stem.

C. Outlet

1. Remove the outlet cap from the valve assembly by turning it counter clockwise.

D. Fusible Plug Pressure Relief Device (Cylinder Valves)

1. Using a $^{7}/_{16}$ socket or hex box wrench, remove the fusible plug PRD by turning it counter clockwise.

INSPECTION OF VALVE AND COMPONENTS

A. Valve Body

1. Inspect the valve body for cracks. If cracks are suspected, scrap the valve body. Inspect the valve body cham ber bore for dirt, debris and damage. Blow out the valve body chamber using clean, dry compressed air or nitro gen to remove these contaminants.

2. Examine all internal and external threads for damage or deterioration due to wear or corrosion. Special atten tion should be given to the threads closest to the outlet since they are the most vulnerable to corrosive attack.

3. Examine the valve body seat for excessive wear or corrosion build up. Wear creating a ⅛ x 90° or greater bevel should be eliminated with the 1534 reseating tool (1210/1214) or 1534A reseating tool(1210A/1214A). The valve has reached its end of life and should be replaced when the tool can no longer remove this bevel.

4. Clean the internal threads for the fusible plug to remove all thread luting compound.

5. If the valve body is damaged or corroded, do not attempt to repair. Order a new valve assembly.

B. Components

1. Scrap any component that is suspected of being cracked. Also, replace components damaged, worn or cor roded to the point where safe operation, valve performance or leak integrity may be compromised. Special atten tion should be given to wear grooves in the nose of the stem. Stems with grooves $^{1}/_{64}$ or greater in depth should be replaced.

2. Special attention should be given to the fuse plug for signs of leakage an extrusion of the fusible metal greater than $^{1}/_{64}$ which may adversely affect use of the emergency kit tool used to temporarily seal fusible metal leaks.

3. It is recommended that both of the packings be replaced before the valve is reassembled.

REPAIR INSTRUCTIONS FOR CHLORINE CYLINDER AND TON CONTAINER VALVES

ASSEMBLY OF VALVE

NOTE: All parts must be clean, free of oil, chips and other contaminants before beginning assembly. A properly calibrated torque wrench must be used. Over tightening will damage components and the valve body. Under tightening may result in leaks. Reassembly of a used valve should not begin until all the components of that valve have been examined to determine their combined effects on valve performance and operation.

A. Chamber

1. Insert the stem into the valve chamber and turning it clockwise, engage it one full thread. Engaging the stem more than one full thread may make installation of parts difficult.
2. Place the packing collar, flat side down, onto the stem.
3. Install two packings with the flat sides facing each other, and place them onto the stem.
4. Place the packing gland with the beveled end down onto the stem.
5. Tighten the stem using a ⅜ square socket and a torque wrench to 10-12 ft. lbs. to coin the seat in the body.
6. Press down on the packing gland until the two packings are completely below the top of the body.
7. Install the packing nut over the stem. Making sure the threads are properly engaged, tighten the packing nut to 25-30 ft. lbs. using a 1¼ socket and torque wrench.

B. Outlet

1. Install the outlet cap onto the valve assembly outlet, turning clockwise until hand tight.

C. Fusible Plug PRD (Cylinder Valve)

1. Apply a chlorine compatible thread luting compound onto the bottom threads of the fusible plug PRD.
2. Thread the fusible plug PRD, finger tight, making sure at least one thread is engaged in the body.
3. Using a $^{7}/_{16}$ socket and a proper torque wrench, tighten the fusible plug to 12-15 ft. lbs. or 1½ - 2 turns.

TESTING OF ASSEMBLED VALVE

NOTE: Only leak detection solutions compatible with chlorine should be used. Thus, only commercial or household detergents should be used that DO NOT contain ammonia, phosphates or other chemicals which are harmful to copper alloys and can initiate stress corrosion cracking of these alloys.

A. Test each reassembled valve by installing the valve securely in a suitable test fixture and pressurizing the valve with air, nitrogen or carbon dioxide to 500 psig.

B. With the outlet plugged or capped, open the valve assembly slowly and check for leaks through the valve body, past the stem and all threaded connections using a leak detection solution.

C. Close the valve assembly and remove the outlet cap assembly or plug. Pressurize the valve to 500 psig and check for seat leakage through the outlet.

C. If any leakage is detected, in the open or closed position, make necessary repairs and retest the valve before returning to service.

NOTE: Periodic retightening of the packing nut to 25-30 ft lbs. may be required to maintain a leak tight packing nut and stem seal. However, tightening more than is necessary or applying excessive torques will prematurely wear the packings and may damage the packing nut and the valve body threads.

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Fusible Metal Plugs

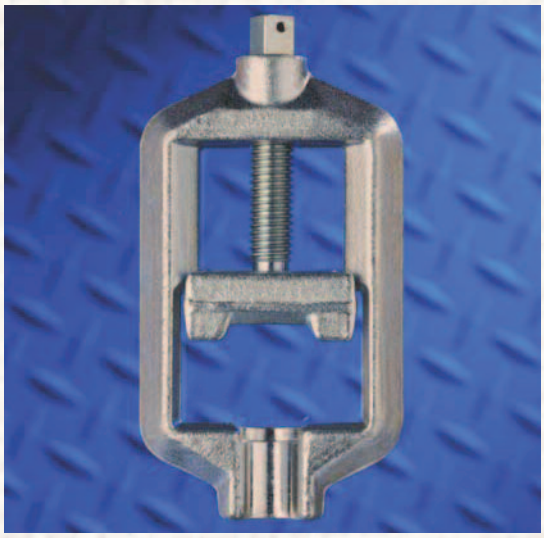
- Manufactured in accordance with Chlorine Institute specifications and CGA S-1.1.
- Materials: Brass C48500 and 165˚F fusible alloy

Fusible Plugs for Ton Container Valves

Part Number	Description	Hex Size
SHW-1303-N1	1"–11 1/2 NGT (CL)-1	1 1/4"
SHW-1303-N2	1"–11 1/2 NGT (CL)-2	1 1/4"
SHW-1303-N3	1"–11 1/2 NGT (CL)-3	1 1/4"
SHW-1303-N4	1"–11 1/2 NGT (CL)-4	1 1/4"
SHW-1333-N1	3/4"–14 NGT (CL)-1	1 1/4"
SHW-1333-N2	3/4"–14 NGT (CL)-2	1 1/4"
SHW-1333-N3	3/4"–14 NGT (CL)-3	1 1/4"
SHW-1333-N4	3/4"–14 NGT (CL)-4	1 1/4"

Fusible Metal Plugs for Cylinder Valves

Part Number	Description	Hex Size
SHW-5853T	1/8"–27 NGT	7/16"



Yoke

- Complies with Chlorine Institute specifications and CGA V-1.
- Material: Forged steel with zinc plating.
- CGA 820 connection

Yoke

Part Number	Description	Minimum Clearance
SHW-628B	Yoke Assembly	1 1/4"
SHW-P628A-2	Replacement Stem	1 1/4"
SHW-P628A-3	Replacement Slotted Follower	1 1/4"

Flex Connectors

- 3/8" OD, Zinc plated copper.
- Working pressure 500 psig.
- Provided with CGA 660 connector nuts for non-yoke applications.

Flex Connectors

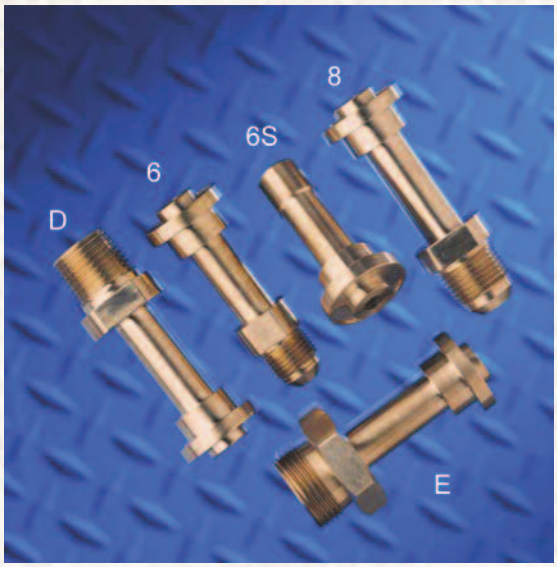
Part Number	Description	Length / Connectors
SHW-6414X11C	Flex Connectors	30 in. CGA 820 both ends
SHW-6414X2C	Flex Connectors	4 ft. CGA 820 both ends
SHW-6414C	Flex Connectors	6 ft. CGA 820 both ends
SHW-6414X1C	Flex Connectors	10 ft. CGA 820 both ends

Parts and Accessories

Part Number	Description
SHW-P10-G-T	Outlet Cap Gasket
SHW-P1210-11	Outlet Cap & Gasket
SHW-P1210-14	Outlet Cap Only
SHW-P1210-23	Outlet Cap & Chain
SHW-P1210-2M	Monel Stem
SHW-P1210-3	Pkng Nut, standard valve
SHW-P1210-4	Pkng Gland
SHW-P1210-5N	Pkng Washer
SHW-P1210-6	Garlock Pkng (2 required)
SHW-P1210-6T	PTFE Pkng 2 required
SHW-P1210A-3	Pkng Nut, new robust valve

Rev: 3/16/16

Chlorine Gas Valves Parts and Accessories



High Flow Yoke Adapters

- Material: Aluminum Silicon Bronze C64210

High Flow Yoke Adapters

Part Number	Description
SHW-5888-6	CGS 820 x 3/8" SAE Flare
SHW-5888-8	CGS 820 x 3/8" SAE Flare
SHW-5888-D	CGS 820 x 1/2"–14 NPT (male)
SHW-5888-E	CGS 820 x 660

Gaskets for Yoke Adapters

Part Number	Description
SHW-P10-CLAL	Lead Outlet Gasket (.937" OD)
SHW-P10-G-T	PTFE Outlet Gasket (.937" OD)

Wrenches

- Designed for use with 1210/1214 and 1210A/1214A chlorine valves and yokes.
- Material: Forged steel construction.
- Size: 1 1/4" open end; 3/8" stem square

Wrenches

Part Number	Description
SHW-635	Stem & Cap Wrench (Straight Shaft)
SHW-635X3	Stem & Cap Wrench (Twisted Shaft)

5928 Charging Valve

The 5928 valve is a modification of Sherwood's ton container valve. A chlorine adapter is soldered on the outlet to permit yoke attachment to all standard chlorine cylinder valves. A standard CGA 660 outlet connection has been machined where the cylinder inlet normally is to permit connection to the permanent chlorine charging or discharge line.

- Material: Aluminum Silicon Bronze C64210

5928 Charging Valve

Part Number	Description
SHW-5928	Charging Valve

Reseating Tool

Increase the life of the vlave with easy to use, manually operated, reseating tool.

1534 – For use with 1210 and 1214

1534A – For use with 1210A and 1214A

Reseating Tools

Part Number	Description
SHW-1534	Reseating Tool
SHW-1534A	Reseating Tool Robust Model

Rev: 3/16/16, 10/23/14

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

1206A Series
Packed Wrench-Operated Valves for Anhydrous Ammonia Applications

Designed for anhydrous ammonia applications, including commercial refrigeration, metal treating and chemical manufacturing.

Key Features & Benefits

- One-piece lead carbon steel, case-hardened, nickel-plated stem provides positive shut-off in corrosive gas service with exceptional durability
- One-piece PTFE packing promotes easy operation while providing a durable leak-resistant stem seal
- Designed to ensure a safe, long, trouble-free life under all service conditions
- Meets CGA standards
- SHW-1206AX5 compatible with both CGA 705 and 240 outlets
- SHW-1206AX9 compatible with CGA 240 outlet only
- Inlet Tap 1/4"–18 NPT

Part # SHW-1206AX5

Specifications	English	Metric
Maximum Working Pressure	3000 PSI	207 BAR
Burst Pressure	15,000 PSI	1034 BAR
Leak Rate	1 × 10^{-5} atm cc/s	1 × 10^{-5} mL/sec
Operating Temperature	-50° F → +130° F	-45° C → +54° C
Operating Torque	5–6.5 ft.-lbs.	6.8–8.8 N-m
Closing Torque	15 ft.-lbs.	20.3 N-m
Cv Flow Factor	0.733	0.733
Cycle Life	1000 Minimum	1000 Minimum

Standards Conformance	
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
A-A-59860	U.S. General Services Administration Standards for Gas Cylinder Valves

Materials of Construction

Part Number	Description	Materials of Construction
SHW-P1206A-2C	Stem	12L14 Carbon Steel with Nickel Plating
SHW-P1206-4C	Packing Nut	12L14 Carbon Steel with Zinc Plating
SHW-P1206-3C	Packing Gland	12L14 Carbon Steel with Zinc Plating
SHW-P5325-6T	Packing	PTFE
SHW-P1206-5C	Packing Washer	12L14 Carbon Steel with Zinc Plating
N/A	Seat	Tin (SN)
N/A	Body	303 Stainless Steel

Anhydrous Ammonia

Part Number	Description	CGA Outlet
SHW-1206AX5	Packed Ammonia Cylinder Valve	705, 240
SHW-1206AX9	Packed Ammonia Cylinder Valve with Lead Washer Recess	240
SHW-628X1	Ammonia Yoke	845
SHW-5877	Adapter	845

Part # SHW-628X1

Part # SHW-5877

N-3/18/16

Specialty Applications

Refrigerant Recovery Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Designed to assure the cleanest, driest refrigerant gas for the most efficient operation of any HVACR system. Meets the Clean Air Act of 1990 with the highest materials demands by the EPA.

Key Features & Benefits

- Replaceable bonnet and stem assembly
- PTFE coated anti-galling stem for ease of operation
- Replaceable color-coded handwheels
- Valves engineered and manufactured for durability and longevity, employing time-proven concepts, processes and methods
- Major component forged and machined from brass alloys controlled to exacting specifications of the Copper Development Association, Inc.

Vapor Service
Part # SHW-RVE6660V

Liquid Service
Part # SHW-RVE6660L

Materials of Construction

Description	PART # SHW-RVE6660L	PART # SHW-RVE6660V
Body	Brass C37700	Brass C37700
Bonnet & Stem Sub		
Bonnet	Brass C36000	Brass C36000
Upper Stem	Brass C36000	Brass C36000
Gasket	Nylon 101	Nylon 101
Lower Stem Sub	O-Ring: Buna N/Nitrile Lower Stem: Brass C36000 Seat: Nylon 101	O-Ring: Buna N/Nitrile Lower Stem: Brass C36000 Seat: Nylon 101
Handwheel	ASTM SC848 Aluminum Die Cast	ASTM SC848 Aluminum Die Cast
Decal Plate	Polyethylene Low Density	Polyethylene Low Density
Washer	Steel w/Zinc Plate	Steel w/Zinc Plate
Screw	Steel w/Zinc Plate	Steel w/Zinc Plate
Tube	Brass C36000	—
Thread Sealant	Everseal 183	Everseal 183

Key Replacement Parts for Vapor Service (PT # SHW-RVE6660V)

Part Number	Description
SHW-3250-9LH-KIT	Bonnet & Stem Assembly
SHW-1901B	Vapor Handwheel (blue)
SHW-3250-9V	Decal Plate (vapor)
SHW-J23B19RA	Washer
SHW-J12-F10-85AP	Screw

Key Replacement Parts for Liquid Service (PT # SHW-RVE6660L)

Part Number	Description
SHW-3250-9LH-KIT	Bonnet & Stem Assembly
SHW-1901R	Liquid Handwheel (red)
SHW-3250-9L	Decal Plate (liquid)
SHW-J23B19RA	Washer
SHW-J12-F10-85AP	Screw

N-3/18/16

Refrigerant Recovery Valves

SHW-YVE445FR Relief Valve

Key Features & Benefits

- For 1" NPT tank connection
- Up to 1000 lb. water capacity
- 260 PSI Working Pressure
- Start to discharge pressure: 390–520 PSI

Relief Valve
Part # SHW-YVE445FR

SHW-YVE3865FR Relief Valve

Key Features & Benefits

- Relief valve for half-ton, portable refrigerant tanks
- Up to 1000 lb. water capacity containers
- Cylinder Working Pressure up to 260 PSI
- Used in conjunction with vapor and liquid recovery valve sets
- Safety set pressure: 500 PSI
- Start to discharge pressure: 490–520 PSI

Relief Valve
Part # SHW-YVE3865FR

Materials of Construction

Description	Pt # SHW-YVE445FR Valves
Body	Brass C36000
Stem & Poppet Sub Bonnet	Brass C36000
Seat	Neoprene W
Nut	Steel w/Zinc Plating
Stem	Steel w/Zinc Plating
Thread Sealant	Titan 7271
Guide	Brass C36000
Washer	Brass C36000
Spring	302 Stainless Steel
Retainer	Brass C36000
Protective Closure	Polyethylene Low Density
Thread Sealant	Everseal 183

Materials of Construction

Description	Pt # SHW-YVE3865FR Valves
Body	Brass C36000
Poppet Assembly Poppet	Brass C36000
Seat	Neoprene W
Spring	302 Stainless Steel
Retainer	Brass C36000
Protective Closure	Polyethylene
Thread Sealant	Everseal 183

Refrigerant Recovery Valves

Part Number	Description	Tank Connection	CGA Outlet	Handwheel
SHW-RVE6660V	Vapor Service Valve	¾"–14 NGT	660	Blue to Indicate Vapor Service
SHW-RVE6660L	Liquid Service Valve	¾"–14 NGT	660	Red to Indicate Liquid Service
SHW-YVE445FR	Relief Valve	1" NPT	None	None
SHW-YVE3865FR	Relief Valve	1/4"–18 NPT	None	None

Specialty Applications

Refrigerant Cylinder Valves

SHW-1014 Valve Series

Key Features & Benefits

- Diaphragm refrigerant cylinder valve for use in refrigerant recovery applications
- Integral Pressure Relief Device (CG-7)
- Diaphragm construction with sulfur-free neoprene seat

Refrigerant Cylinder Valve
Part # SHW-1014-B

Refrigerant Recovery Valves

Part Number	CGA	Outlet	Inlet	Safety	Extra Features
SHW-1014-B	165	¼" SAE Flare	¼"–18 NGT	400 PSI	—
SHW-11014-C	165	¼" SAE Flare	3/8"–18 NGT	400 PSI	—
SHW-11014-CB	165	¼" SAE Flare	3/8"–18 NGT	400 PSI	Cleaned For Oxygen Service and Oil Free Per CGA G-4.1
SHW-11014X2-B	165	¼" SAE Flare	¼"–18 NGT	600 PSI	Cleaned For Oxygen Service and Oil Free Per CGA G-4.1
SHW-11014X2-C	165	¼" SAE Flare	3/8"–18 NGT	600 PSI	Cleaned For Oxygen Service and Oil Free Per CGA G-4.1

Refrigerant Cylinder Valves

SHW-1031X19-CL1

Diaphragm Packless Refrigerant Valve with ¼ NPT Tapped Inlet and PCTFE Seat

Key Features & Benefits

- Cylinder valve for use with refrigerant gases
- Diaphragm construction with unique PCTFE seat
- Cylinder Working Pressure up to 250 PSI
- Pressure Relief Device (CG-7) start to discharge pressure: 450 PSI

Diaphragm Packless Refrigerant Valve
Part # SHW-1031X19-CL1

Materials of Construction

Description	Pt # SHW-YVE445FR Valves
Body	Brass C37700
Stem	Brass C36000
Screw	Steel w/Zinc Plating
Handwheel	Zamak #3 Zinc Die Cast
Bonnet	Brass C36000
Diaphragms	Brass C36000
Protective Closure	316 Stainless Steel
Seat Holder	Brass C36000
Seat	PCTFE
Spring	302 Stainless Steel
Safety Cap	Brass C36000
Safety Spring	Music Wire w/Zinc Plating
Safety Seat Holder	Brass C36000
Safety Seat	Neoprene W

Refrigerant Recovery Valves

Part Number	CGA	Outlet	Inlet	Safety	Features
SHW-1031X19-CL1	660	1"–14 NGO RH Ext.	¾"–14 NGT	450 PSI	1/4" Tapped Inlet, PCTFE Seat

N-3/18/16

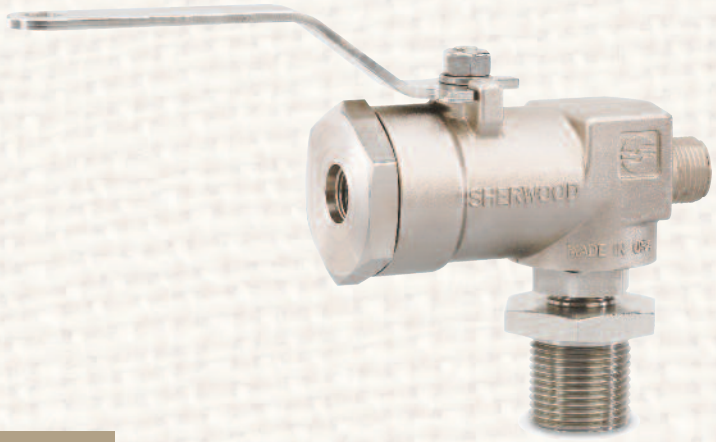
Alternative Energy Valves

NBV Series: CNG Ball Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

KEY FEATURES & BENEFITS

- Designed for Type III and Type IV CNG (compressed natural gas) cylinders used in bulk gas cylinder storage stacks, gas vehicle cylinder stacks and fast-fill cylinder stacks
- Full-flow quarter-turn ball valve for fast filling with minimal cylinder neck valve constriction
- Saves commissioning time and reduces joint inspections
- Stem designed so that it cannot be blown out



Design Specifications

	English	Metric
Max. Working Pressure:	3675 PSI	253 Bar
Burst Pressure:	15,000 PSI	1034 Bar
Operating Temperature Range:	-20˚ F→ +140˚ F	-29˚ C → +60˚ C
Leak Rate:	$1x10^{-4}$ atm cc/sec	$1x10^{-4}$ Bar mL/sec
Cv 90˚ Fitting:	4.99 at 100 PSI 22.48 at 500 PSI	4.99 at 7 Bar 22.48 at 34 Bar
Operating Torque:	40 in.-lbs.	4.5 N-m
Body	Brass, Nickel Plated	Brass, Nickel Plated
Ball Seal	Delrin®	Delrin®
O-Rings	Buna-N	Buna-N
Bonnet Torque	45–55 ft.-lbs.	61–74.5 N-m
PRD Torque	30–40 ft.-lbs.	40.7–54.2 N-m
Handwheel Nut Torque	30–40 in.-lbs.	2.8–5 N-m
Jam Nut Torque on Fitting	47–57 ft.-lbs.	64.8–77.2 N-m

Ordering Info NBV Series: CNG Ball Valves

Part Number	Inlet	Outlet	Safety
SHW-NBV1000	1-1/8"–12 UNF	9/16"–18 UNF2B	CG-5
SHW-NBV1000A	1-1/8"–12 UNF	9/16"–18 UNF2B	No PRD
SHW-NBV1001	3/4"–14 NGT	9/16"–18 UNF2B	No PRD
SHW-NBV1002	1/2"–14 NGT	9/16"–18 UNF2B	No PRD
SHW-NBV1003	3/4"–14 NGT	9/16"–18 UNF2B	No PRD

Materials of Construction

Description	Materials of Construction
Handle	304 Stainless Steel
Nut	304 Stainless Steel
Lock Washer	316 Stainless Steel
Stem	316 Stainless Steel
Bonnet	Brass C36000
O-Ring – Bonnet	Buna-N
Backup Ring – Stem	PTFE
O-Ring – Stem	Buna-N
Stem Washers	Delrin® AF
Ball Seals	Tecaform 13 HPV
Safety (Optional)	
Safety Plug	Brass C36000
Safety Disc	Nickel
Safety Washer	C11000 Copper
Safety Fuse Metal	165˚ or 212˚ Eutectic Alloy
Fitting Subassembly	
Fitting	316 Stainless Steel
Nut	316 Stainless Steel
Washer	316 Stainless Steel
O-Ring – Fitting	Buna-N
Ball	316 Stainless Steel
Body	Brass C37000

N-10/25/14

Master Valves 430 Series for Manifold Piping

High Pressure Master Shut-Off Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Part # SHW-430C-F

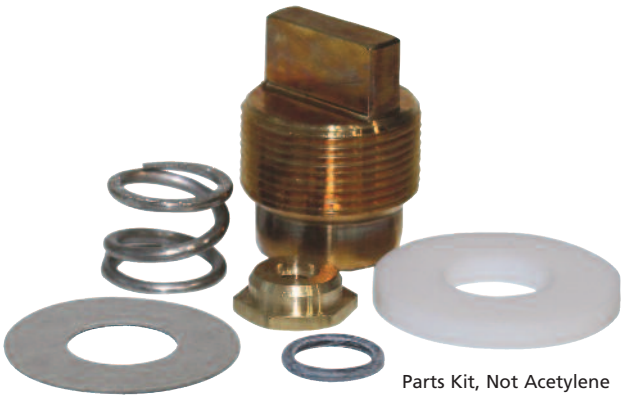
High-pressure shut-off valves designed for heavy-duty use on tube trailers, manifold systems and other piping systems. Valves are suitable for use with oxygen, acetylene, nitrogen, argon, helium, hydrogen, carbon dioxide, nitrous oxide and other inert gases.

Design Features

- Safer - There is less chance of ignition from oxygen compression due to a toroidal seat insert that minimizes the area of fluoroplastic material subject to oxygen impact forces.
- Heat Absorbing Metal Surfaces encapsulating all but the shut-off surface of the seat insert and serving as a heat sink reducing the chance of acetylene ignition.
- Longer Life of Downstream Equipment reduces the forces against regulators and other auxiliary equipment due to the sudden surge of high pressure gas when the valve is opened quickly.
- Controlled Flow - When the valve is opened quickly, dynamic forces directed against downstream equipment are reduced by a skirt on the lower stem shrouding the raised body seat. Controlled flow feature protects auxiliary equipment from sudden surges of high pressure gas when valve is opened.
- Full Flow is achieved when handle is turned two full turns.
- Forged Brass Body with Copper Alloy Parts – 430C lower stem, C64200 aluminum-silicon-bronze not for acetylene; 430CX lower stem, C36000 free cutting brass for acetylene.
- Pressure Seal Design with hand wheel spring applies upward force against upper stem and packing to ensure stem seal even at low gas pressures. This pressure seal bonnet design assures positive seal.
- O-ring Moisture Seal on Upper Stem protects against environmental contamination.
- PCTFE Seat Insert and PTFE Packing has been used successfully for over 30 years in master shut-off valve applications.
- Large Bar Handle for ease of operation.
- Pressure Ratings – 6000 PSIG – non-corrosive gases except oxygen; 4840 PSIG – oxygen; 3000 PSIG – UL rating at 120F.
- Aluminum Silicon Bronze lower stem provides extra long-life and durability during operation.
- Inert PTFE packing provides leak-free stem seal, long cycle life and resistance to corrosion.

Specifications	English	Metric
Max Working Pressure	6000 PSIG	413 Bar
UL Maximum Working Pressure	3000 PSI	207 Bar
Max Working Pressure, Oxygen	5500 PSI @ 120˚ F	379 Bar @ 49˚ C
Burst Pressure	18,000 PSI	1241 Bar
Leak Rate	$1x10^{-3}$ atm cc/sec	$1x10^{-3}$ Bar mL/sec
Operating Temperature	-50˚ F→ +130˚ F	-45˚ C → +54˚ C
Cv Flow Factor	3.16	3.16

High Pressure Master Shut-Off Valves: Parts for 430 Series Manifold Piping



Parts Kit, Not Acetylene
Part # SHW-P430C-32

PRODUCT NOTES:

** "CW" valves include Brass Washer SHW-P430CX13-20.*

Seat Holder Notes:

- SHW-P430CX12-10 (Aluminum Silicon bronze) - not for acetylene or MAPP gases
- SHW-P430CX1-10A (Brass) – for all non-corrosive non-liquefied gases.

Pressure Ratings Notes:

A. 6000 PSIG at 70F except 5500 PSIG @ 120F for oxygen and 3000 PSIG @ 120F for UL applications.
B. 6000 PSIG valve should be cleaned for oxygen service with oxygen pressure not exceeding 5500 PSIG @ 120F.
C. 3000 PSIG @ 120F; UL recognized component

Replacement Parts Kits for SHW-P430C-32W

Contains one of each component listed below.

Part Number	Description
SHW-P430-13	Handwheel Gasket
SHW-P1200-7	Handwheel Nut
SHW-P1200-11	Handwheel Spring
SHW-P430CX13-20	Washer
SHW-P430CX12-21K (ASB)	Lower Stem and Seal Insert Assembly
SHW-P430B-27-13	Stem O-Ring
SHW-P430-6T	PTFE Packing

Replacement Parts Kits for SHW-P430C-32W

Contains one of each component listed below.

Part Number	Description
SHW-P430-13	Handwheel Gasket
SHW-P1200-7	Handwheel Nut
SHW-P1200-11	Handwheel Spring
SHW-P430CX13-20	Washer
SHW-P430CX1-21AK (Brass)	Plug and Seat Assembly
SHW-P430B-27-13	Stem O-Ring
SHW-P430-6T	PTFE Packing

Kits

Part Number	Description
SHW-P430CX1-32W	Includes the P430CX13-20
SHW-P430C-32W	Includes the P430CX13-20

Rev: 3/18/16

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Materials of Construction

Part Description	Materials of Construction
Body	Forged Brass C37700
Packing	PTFE
Handwheel Washer	High Density Fiber
Packing Nut	Brass C36000
Stem	Brass C36000
Handle	Forged Brass C37000
O-Ring	Neoprene
Seat Assembly	
Seat Holder	Aluminum Silicon Bronze C64200
Seat Holder (430CX1 Series)	Brass C36000
Seat	PCTFE
Spring Nut Plated	Brass C36000
Spring	302 Stainless Steel
Lubricant	Fluorolube
Washer	Brass C36000

High Pressure Master Shut-Off Valves

Part Number	Outlet Thread Size	Inlet Thread Size	Seat Holder*	Pressure Ratings (see Notes A,B,C below)
SHW-430CW-F	1"–11½ NPSM (Male)	1"–11½ NPSM (Male)	P430CX12-10	B
SHW-430CW-M	½"–14 NPT (Female)	½"–14 NPT (Female)	P430CX12-10	B
SHW-430CW-MS	½" Pipe Socket Weld	½" Pipe Socket Weld	P430CX12-10	B
SHW-430CW-N	¾"–14 NPT (Female)	¾"–14 NPT (Female)	P430CX12-10	B
SHW-430CW-NS	¾" Pipe Socket Weld	¾" Pipe Socket Weld	P430CX12-10	B
SHW-430CWX1-F	1"–11½ NPSM (Male)	1"–11½ NPSM (Male)	P430CX1-10A	A
SHW-430CWX1-M	½"–14 NPT (Female)	½"–14 NPT (Female)	P430CX1-10A	A
SHW-430CWX1-MS	½ " Pipe Socket Weld	½ " Pipe Socket Weld	P430CX1-10A	A
SHW-430CWX1-N	¾"–14 NPT (Female)	¾"–14 NPT (Female)	P430CX1-10A	A
SHW-430CWX1-NS	¾" Pipe Socket Weld	¾" Pipe Socket Weld	P430CX1-10A	A
SHW-430CWX9-FM	½"–14 NPT (Female)	1"–11½ NPSM (Male)	P430CX12-10	B
SHW-430CWX10-F	1"–11½ NSPM, LH (Male)	1"–11½ NSPM, LH (Male)	P430CX12-10	C

* SHW-P430CX12-10 (Aluminum Silicon Bronze) is not for use with acetylene or MAPP gases; SHW-P430CX1-10A (Brass) is for use with all non-corrosive, non-liquefied gases. To order brass washer replacement part, use part number SHW-P430CX13-20.

NOTES:

A. 6000 PSI @ 70˚ F except 5500 PSI @ 120˚ F for oxygen and 3000 PSI @ 120˚ F for UL® applications.

B. 6000 PSI valve is cleaned for oxygen service with oxygen pressure not exceeding 5500 PSI @ 120˚ F.

C. 3000 PSI @ 120˚ F; UL® Recognized component.

N-3/18/16

Specialty Valve 5074 Series: Brass Diaphragm Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Brass Diaphragm Valves

Sherwood's 5074 Series is designed for various high purity gases, UHP mixtures and pure gas applications.

Design Features

- Standardized anti-extrusion pin feature prevents seat extrusion and cold flow of the polymeric seat
- Available in multiple seat material configurations to accommodate all high purity gas applications
- Increased flow (Cv) to aid in reducing vent and purge times
- Low operating torque design to ensure ease of operation during filling and use
- Available w/unitized pressure relief device which is equipped w/a webbed washer design to protect the burst disc from damage during transportation & replacement
- Optional inlet threads for dip tube assembly
- Available with standard CGA connections as well as International inlets and outlets

Brass Packless Diaphragm Valves

Valve Series	5074 Tapered	5074X15 Straight Thread	5074 International Series
Inlets	3/4" – 14NGT	1 1/8"-12 UNF 3/4"-16 UNF	BS 341, DIN 477, JIS, ISO All other available upon request
Outlets	CGA	CGA	CGA, DISS, BS 341, DIN 477, JIS, ISO All other available upon request
Seat Material	Nylon 6/6 PCTFE PVDF	Nylon 6/6 PCTFE PVDF	Nylon 6/6 PCTFE PVDF

Pressure Relief Device

Burst Pressure @ 165° F	A – 3000 PSIG B – 3360 PSIG C – 3775 PSIG D – 4000 PSIG
Burst Disc Material	Nickel 200 – Standard Copper
Type (per to CGA S1.1 latest edition)	None, where prohibited CG-1 Burst Disc Only CG-4 Burst Disc w/ 165° F Fuse Metal CG-5 Burst Disc w/ 212° F Fuse Metal

- "XX" denotes safety disc rupture pressure based on D.O.T. cylinder service pressure.
  Example: 5074-580B for a 3360 burst disc (See chart below)

PRD Burst Pressure Chart

SUFFIX	PSIG
A	3000
B	3360
C	3775
D	4000

- Limitation Note - Maximum cylinder fill pressure (including overfill) for all 5074 Series valves is: 3520 PSI @ 70° F 4000 PSI @ 120° F

Specifications

Max Service Pressure:	3000 PSIG	200 Bar
Temperature Range:	-50° F→ 130° F	-45° C → 54° C
Leak Rate @ 2000 PSIG (138 bar):	$1x10^{-7}$ atm cc/sec	$1x10^{-7}$ Bar mL/sec
Closing Torque:	50 in-lbs @ 2000 PSIG	5.6 N-m @ 138 bar
Cv:	.635	.635

Optional Features

Outlet:
Tapped for 5/16-24 UNF flow restrictor

Inlet Tap:
Available in 1/4", NPT or 10 mm

ORDERING INFORMATION for 5074 Series

5074 [X] - (CGA) [X] [X]

X =
- R = Tapped for Flow Restrictor
- T = Tapped for Inlet Dip Tube
- X15 = 1 1/8"-12 UNF Inlet (Straight Thread)
- X75 = 3/4"-16 UNF Inlet (Straight Thread)

PSIG
- A = 3000 PSIG
- B = 3360 PSIG
- C = 3775 PSIG
- D = 4000 PSIG

X = Temperature
- M = 165° Fuse Metal
- W = 212° Fuse Metal

Rev: 10/21/14

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

1214Y Series: ASB Packed Valves

Aluminum Silicon Bronze Valves

Sherwood's 1214 Series is designed for use in applications using chlorine gas, chlorine liquids, corrosive gases, insecticides & fumigants, preservatives and bleaching agents.

Design Features

- Aluminum silicon bronze valve body offers proven resistance against various corrosive gases
- One-piece monel stem provides positive shutoff in corrosive gas service with exceptional durability
- PTFE packing promotes easy operation while providing a durable leak-resistant stem seal
- Optional tapped inlet threads for dip tube assembly
- Available with standard CGA connections as well as International inlets and outlets
- Available with unitized pressure-relief device having fuse metal backing

** Optional offering: Internal packing nut allowing for increased wall thickness and secondary seal cap*

Pressure Relief Device

Burst Pressure @ 165˚ F	A – 3000 PSIG B – 3360 PSIG C – 3775 PSIG D – 4000 PSIG
Burst Disc Material	Platinum-Clad Nickel
Type (per to CGA S-1.1 latest edition)	None, where prohibited CG-2 Fuse Plug 165˚ F Fuse Metal CG-4 Burst Disc w/ 165˚ F Fuse Metal CG-5 Burst Disc w/ 212˚ F Fuse Metal

Specifications

Max Service Pressure:	3000 PSIG	200 Bar
Temperature Range:	-50˚ F→ 120˚ F	-45˚ C → 49˚ C
Leak Rate @ 2000 PSIG (138 bar):	$1x10^{-5}$ atm cc/sec	$1x10^{-5}$ Bar mL/sec
Closing Torque @ 2000 PSIG (138 bar):	15 ft.-lbs.	5.6 N-m

Aluminum Silicon Bronze Valves

Part Number	Description
SHW-1214Y9R-330PAM	CGA 330, 3/4"-14NGT, 3000 PSI 165˚ Fuse
SHW-1214Y9R-330PBM	CGA 330, 3/4"-14NGT, 3360 PSI 165˚ Fuse
SHW-1214Y9R-330PCM	CGA 330, 3/4"-14NGT, 3775 PSI 165˚ Fuse
SHW-1214Y9R-330PDM	CGA 330, 3/4"-14NGT, 4000 PSI 165˚ Fuse
SHW-1214Y24	CGA 330, 3/4"-14NGT, 1/4" Inlet Tap No Safety
SHW-1214Y26B	CGA 330, 3/4"-14NGT, 1/4" Inlet Tap No Safety, Cap & Chain 02 Cleaned
SHW-1214Y41B	CGA 330, 3/4"-14NGT, Secondary Seal Cap, Oxygen Cleaned, Outlet Cap & Chain
SHW-1214F6	CGA 660, 3/4"-14NGT, 3/16 Seat Diameter, No Safety
SHW-1214Y20T	CGA 660, 3/4"-14NGT, 1/4" Inlet Tap 3360 PSI 165˚ Fuse
SHW-1214Y44	CGA 679, 3/4"-14NGT, Secondary Seal Cap, Oxygen Cleaned, No Safety
SHW-1214Y3-SB	CGA 670/679, 3/4"-14NGT, No Safety, with SS Packing Nut

5983 Series: 303 Stainless Steel Packed Valves

303 SS Packed Valves

Sherwood's 5983L Series is designed for use in specialty gas service, corrosive gases and tube trailer applications.

Features

- 303 stainless steel, spring-loaded, packed wrench-operated valves
- Live loaded packing design provides constant load to ensure stem seal for the life of the valve
- Valve body designed to withstand severe internal and external conditions
- One-piece stainless steel stem provides positive shutoff in corrosive gas service with exceptional durability
- PTFE packing promotes easy operation while providing a durable leak-resistant stem seal

Specifications

Max Service Pressure:	3000 PSIG	200 Bar
Temperature Range:	-50˚ F→ 130˚ F	-45˚ C → 54˚ C
Leak Rate:	$1x10^{-5}$ atm cc/sec	$1x10^{-5}$ Bar mL/sec
Closing Torque @ 2000 PSIG (138 Bar):	15 ft.-lbs.	20.3 N-m
Cv:	0.733	0.733

303 Stainless Steel Packed Valves

Part Number	Description
SHW-5983L-330	CGA 330 outlet, 3/4-14 NGT INLET, No Safety, Live Loaded
SHW-5983L-350	CGA 350 outlet, 3/4-14 NGT INLET, No Safety, Live Loaded
SHW-5983L-660	CGA 660 outlet, 3/4-14 NGT INLET, No Safety, Live Loaded

Rev: 3/16/16, 10/21/14

Specialty Valves
6074 Series: 303 SS Packless Diaphragm Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

303 Stainless Steel Diaphragm Packless Valves

Sherwood's 6074 Series is designed for a variety of applications, including analytical & instrumentation gases, EPA protocol gases, environmental monitoring and medical applications using pharmaceutical gases.

Features

- Standardized anti-extrusion pin feature prevents seat extrusion and cold flow of the polymeric seat
- Available in multiple seat material configurations to accommodate all high-purity gas applications
- Increased flow (Cv) to aid in reducing vent and purge times
- Low operating torque design ensures ease of operating during filling and use
- Available with unitized pressure-relief device having fuse-metal backed or unbacked burst disc
- Optional inlets equipped for dip tube assembly
- Available with standard CGA connections as well as International inlets and outlets

303 Stainless Steel Diaphragm Packless Valves

Valve Series	Inlets	Outlets	Seated Material
6074 Series	3/4" - 14 NGT 3/8" - 14 NGT 1/2" - 14 NGT	CGA	PCTFE, PVDF
6074X15E Series	1-1/8" - 12 UNF-2A	CGA	PCTFE, PVDF
6074 International Series	BS 341, DIN 477, ISO; All Others Available upon Request	BS 341, DIN 477, ISO; All Others Available upon Request	PCTFE, PVDF

Pressure Relief Device

Burst Pressure @ 165° F	A – 3000 PSIG B – 3360 PSIG C – 3775 PSIG D – 4000 PSIG
Burst Disc Material	Nickel 200 – Standard 316L Stainless Steel Platinum-Clad Nickel
Type (per to CGA S1.1 latest edition)	None, where prohibited CG-1 Burst Disc Only CG-2 Fuse Plug 165° F Fuse Metal CG-4 Burst Disc w/ 165° F Fuse Metal CG-5 Burst Disc w/ 212° F Fuse Metal

Specifications

Max Service Pressure: 3000 PSIG	200 Bar
Temperature Range: -50° F→ 130° F	-45° C → 54° C
Leak Rate: $1x10^{-7}$ atm cc/sec	$1x10^{-7}$ Bar mL/sec
Closing Torque: 50 in.-lbs. @ 2000 PSIG	5.6 N-m @ 138 Bar
Cv with Restrictor: .326	.326
Cv without Restrictor: .635	.635

Optional Features

Aluminum Handwheel:
Available in Red, Blue or Rubber Coated, and Chrome Plated 6 or 8 Lobed

Outlet:
Tapped for 5/16", -24 UNF Flow Restrictor

Inlet Tap:
Available in 1/4", NPT or 10 mm

Electropolishing of Gas Wetted Areas

ORDERING INFORMATION for 6074 Series

6074 [X] (CGA) [X] [X] [X] - [C]

X =
- E = Electropolish
- G = 25E
- K = Kynar (PVDF Seat)
- R = Tapped for Flow Restrictor
- T = Tapped for Inlet Dip Tube
- V = Vespel Seat
- X15 = 1 1/8"-12 UNF

Material
- Nickel Burst Disc
- P = Platinum Burst Disc
- S = Stainless Burst Disc

PSIG
- A = 3000 PSIG
- B = 3360 PSIG
- C = 3775 PSIG
- D = 4000 PSIG

Temperature
- M = 165° Fuse Metal
- W = 212° Fuse Metal

Additional Options
- C = Add to Part # for Cap and Chain

N-10/21/14

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

316L Stainless Steel Diaphragm Valves

Sherwood's 6674 Series is used in corrosive gas applications, cylinder phosphine gas, atmospheric and purging gases, dopant gases and reactant gases.

Features

- Crimped seat feature with anti-extrusion pin prevents seat extrusion and cold flow of the polymeric seat
- Available in multiple seat material configurations to accommodate all high-purity gas applications
- Increased flow (Cv) to aid in reducing vent and purge times
- Low operating torque design ensures ease of operation during filling and use
- Available with unitized pressure-relief device having fuse-metal backed or unbacked burst disc
- Available with standard CGA connections as well as international inlets and outlets

316L Stainless Steel Diaphragm Valves

Valve Series	Inlets	Outlets	Seated Material
6674 Series	3/4" - 14 NGT	CGA	PCTFE, PVDF
6674 International Series	ISO, BS 341, DIN 477; All Others Available upon Request	ISO, BS 341, DIN 477, JIS	PCTFE, PVDF

Pressure Relief Device

Burst Pressure @ 165° F	A – 3000 PSIG B – 3360 PSIG C – 3775 PSIG D – 4000 PSIG
Burst Disc Material	Stainless Steel – Standard Nickel 200 – Optional Platinum-Clad Nickel – Optional
Type (per to CGA S1.1 latest edition)	None, where prohibited CG-4 Burst Disc w/ 165° F Fuse Metal CG-5 Burst Disc w/ 212° F Fuse Metal

Specifications

Max Service Pressure:	
2400 PSIG	165 Bar
Temperature Range:	
-50° F→ 130° F	-45° C → 54° C
Leak Rate @ 2000 PSIG (138 Bar):	
$1x10^{-7}$ atm cc/sec	$1x10^{-7}$ Bar mL/sec
Closing Torque:	
50 in.-lbs. @ 2000 PSIG	5.6 N-m @ 138 Bar
Cv with Restrictor:	
.326	.326
Cv without Restrictor:	
.635	.635

Optional Features

Add a "R" or "T" to part number for options. *For example, a 6674-330 with a tapped inlet would be 6674T-330.*

R = Outlet Tapped for 5/16" Flow Restrictor

T = Inlet Tap Available in 1/4" NPT, 10mm

Electropolish for Gas Wetted Areas

ORDERING INFORMATION for 6674 Series

6674 [X] (CGA) [X] [X] [X] - [C]

X =
- E = Electropolish
- G = 25E
- K = Kynar (PVDF Seat)
- R = Tapped for Flow Restrictor
- T = Tapped for Inlet Dip Tube
- V = Vespel Seat
- X15 = 1 1/8"-12 UNF

Material
- Nickel Burst Disc
- P = Platinum Burst Disc
- S = Stainless Burst Disc

PSIG
- A = 3000 PSIG
- B = 3360 PSIG
- C = 3775 PSIG
- D = 4000 PSIG

Temperature
- M = 165° Fuse Metal
- W = 212° Fuse Metal

Additional Options
- C = Add to Part # for Cap and Chain

Rev: 3/16/16, N-10/23/14

Specialty Valve

6411 Series: Diaphragm Packless Lecture Bottle Valves

RATERMANN MANUFACTURING, INC. SHERWOOD MASTER DISTRIBUTOR

Diaphragm Packless Lecture Bottle Valves

Sherwood's 6411 Series is designed specifically with corrosive gases in mind and with a durable construction for the specialty gases and gas mixtures used in laboratories.

Features

- Proven leak-tight diaphragm seal
- Forged brass, aluminum silicon bronze and 303 stainless steel bodies withstand severe service conditions
- Low operating torque design ensures ease of operation during filling and use
- Available with standard CGA connections

Diaphragm Packless Lecture Bottle Valves

Valve Series	Inlets	Outlets	Metallic Seat Material
6411 Brass Series	3/8" - 18 NGT	CGA 170 CGA 180	303 Stainless Steel
6411X3 ASB Series	3/8" - 18 NGT	CGA 180	303 Stainless Steel
6411X7 303 Series	3/8" - 18 NGT	CGA 180	303 Stainless Steel

Specifications

Max Service Pressure: 3000 PSIG	200 Bar
Temperature Range: -50° F→ 120° F	-45° C → 49° C
Leak Rate: $1x10^{-7}$ atm cc/sec	$1x10^{-7}$ Bar mL/sec
Closing Torque: 50 in.-lbs. @ 2000 PSIG	2.24 N-m @ 138 Bar
Cv: 0.2 min.	0.2 min.

BRASS

STAINLESS STEEL

ASB
Aluminum Silicon Bronze

N-10/23/14

Specialty Valve

1032 Series: Low Pressure Brass Diaphragm Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Low Pressure Diaphragm Valves

Sherwood's 1032 Series is designed for use in liquefied gas applications, including refrigerants and flammables, and is especially suitable for propane, butane and fuel-gas applications but also sterilant gas applications.

Features

- High-density forged brass body and two non-perforated stainless steel diaphragms for durability
- Spring-loaded Type CG-7 safety for use on liquified gas cylinders having water capacities not exceeding 254 lbs.
- Nylon seat insert and controlled stem travel assure positive shut-off and long, wear-resistant service
- Inlet and outlet connections comply with CGAV-1 Specifications
- Assembly torque: Bonnet 60 ft-lbs

Part # SHW-1032X9-375

Part # SHW-1032E

Low Pressure Brass Diaphragm Valves

Part Number	Outlet Connection	Inlet Connection	Inlet Tap	Safety Type	Start to Discharge Setting (PSIG)	Seat Material	PRD Material	Special Features
SHW-1032E	510	3/4"-14NGT	–	CG-7	375	Nylon	Buna-N	Low Profile
SHW-1032X5	510	3/4"-14NGT	1/4"-18 NPT	CG-7	375	PCTFE	PTFE	–
SHW-1032X8	510	3/4"-14NGT	1/8"-27 NPT	CG-3	212° F	PTFE	–	–
SHW-1032X9-375	510	3/4"-14NGT	–	CG-7	375	Nylon	Buna-N	Dip Tube, Charge Port
SHW-1032X9-450	510	3/4"-14NGT	–	CG-7	450	Nylon	Buna-N	Dip Tube, Charge Port
SHW-1042X6	510	3/4"-14NGT	1/4"-18 NPT	No PRD	–	PCTFE	–	–
SHW-1042X6T	510	3/4"-14NGT	1/4"-18 NPT	No PRD	–	PTFE	–	–

N-10/23/14

Dual Outlet Valves DF Series

DF Series: Alternative Fuel Valves

RATERMANN MANUFACTURING, INC.
SHERWOOD MASTER DISTRIBUTOR

Key Features and Benefits

- Dual outlet valves for fuel gas manifold use
- Dual outlet design allows for manifolding without use of adapters or tees, eliminating multiple joints
- Location of outlets above valve seat enables individual cylinder isolation without shutting off manifold
- Designed for direct manifold connections, reducing components and leak points
- Crimped seat feature prevents seat extrusion and cold flow of the polymer seat
- Available in multiple seat material configurations to accommodate all high-purity gas applications
- Increased flow (Cv) to aid in reducing vent and purge times
- Low operating torque design to ensure ease of operation during filling and use
- Available with unitized Pressure Relief Device having fuse-metal backed or unbacked burst disc
- Available with standard CGA connections as well as international inlets and outlets

Design Specifications	English	Metric
Maximum Working Pressure	6250 PSI	431 Bar
Burst Pressure	20,000 PSI	1379 Bar
Storage Temperature Range	-65˚ F → +155˚ F	-54˚ C → +68˚ C
Operating Temperature Range	-50˚ F → +120˚ F	-46˚ C → +49˚ C
Minimum Cycle Life	5000 Cycles	
Operating Torque	15–25 in.-lbs.	1.7–2.8 N-m
Closing Torque	25–35 in.-lbs.	2.8–3.9 N-m
Bonnet Installation Torque	45–55 ft.-lbs	61–74.5 N-m
Pressure Relief Device Installation Torque	30–40 ft.-lbs.	40.7–54 N-m
Stem Nut Installation Torque	Nut Flush with Top of Stem	

Part # SHW-DF11665-48FKF

Part # SHW-DF11665-55FKF

Part # SHW-DFN11550-00HFKP

Dual Outlet Valves

Horizontal, 3/4 14 NGT

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DF11565-28HFKF	3000 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-32HFKF	3360 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-35HFKF	3775 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-38HFKF	4000 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-43HFKF	4350 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-48HFKF	5000 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT
SHW-DF11565-55HFKF	5833 PSI 212° fuse	Horizontal	1/4-18 NPT	3/4-14 NGT

Horizontal, 1-1/8 UNF, Chrome Plated

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DFN11555-55HFKP	5833 PSI 212° fuse	Horizontal	1/4-18 NPT	1-1/8 UNF
SHW-DFN11555-95HFKP	10,000 PSI 212° fuse	Horizontal	1/4-18 NPT	1-1/8 UNF

Horizontal, 1-1/8 UNF, Chrome Plated

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DFN11550-00HFKP	NO Safety	Horizontal	1/4-18 NPT	1-1/8 UNF

Horizontal, 3/4-14 NGT, Stamped for Canada

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DF16660-00HFKFC	NO Safety	Horizontal	7/16-20 UNF	3/4-14 NGT

Horizontal, European 25E

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DF11525E5-28HKKF	3000 PSI 212° fuse	Horizontal	1/4-18 NPT	European 25E
SHW-DF11525E5-32HKKF	3360 PSI 212° fuse	Horizontal	1/4-18 NPT	European 25E
SHW-DF11525E5-35HKKF	3775 PSI 212° fuse	Horizontal	1/4-18 NPT	European 25E
SHW-DF11525E5-38HKKF	4000 PSI 212° fuse	Horizontal	1/4-18 NPT	European 25E

Upright, 3/4 14 NGT

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DF11661-28FKF	3000 PSI	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11661-32FKF	3360 PSI	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11661-35FKF	3775 PSI	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11661-38FKF	4000 PSI	Upright	1/4-18 NPT	3/4-14 NGT

Upright, 3/4-14 NGT

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DF11665-28FKF	3000 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11665-32FKF	3360 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11665-35FKF	3775 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11665-38FKF	4000 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11665-48FKF	5000 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT
SHW-DF11665-55FKF	5833 PSI 212° fuse	Upright	1/4-18 NPT	3/4-14 NGT

Upright, 1-1/8 UNF, Chrome Plated

Part Number	Safety	Orientation	Outlet	Inlet
SHW-DFN11650-00KP	NO Safety	Upright	1/4-18 NPT	1-1/8 UNF
SHW-DFN16650-00HFKP	NO Safety	Upright	7/16-20 UNF	1-1/8 UNF

Rev: 3/15/16, 7/1/13

FasTest® Medical Oxygen Connectors

Part # QFT-MED540M

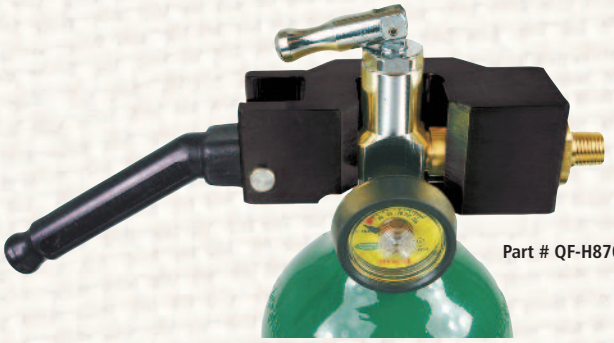
Medical Oxygen Connector

For Carry Handle Style CGA 540 Connection

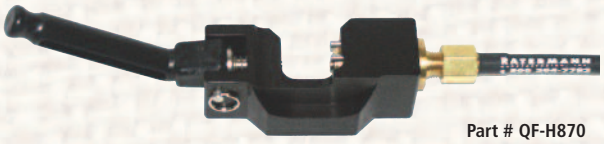
Part # QFT-MED540M

Part # QFT-MED540F

Medical Oxygen Post Valve Quick Fill

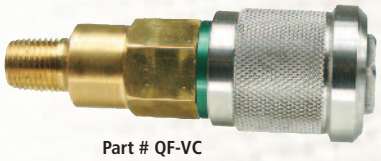


Part # QF-H870



Part # QF-H870

VariQuik – For Medical Gas Filling



Part # QF-VC

Part # QF-VAM

INCREASE PRODUCTIVITY OF YOUR FILL RACKS

Safety Features

- The VariQuik System has a visual indicator that is visible when properly connected. Once the connection is made, the adapter will push back from the coupler, leaving a small gap. This will lock the sleeve.

For Changing Lines from

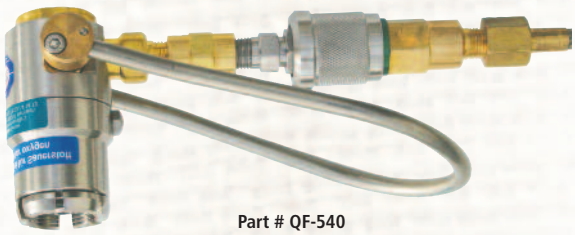
- Medical CGA 540
- Medical CGA 870 Post Style
- QF Med

Part # QF-H870

Part # QF-VC

Part # QFT-MED540M

Part # QFT-MED540F



Part # QF-540

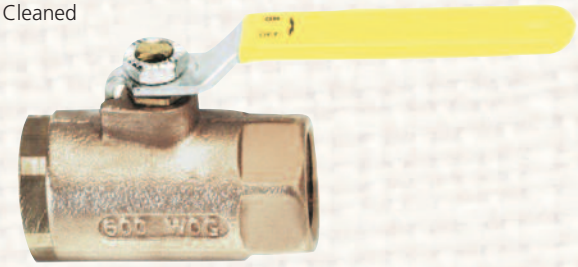
Ball Valves

Bronze Ball Valves

FEATURES

- Two Piece Body
- Reinforced Seats
- Blow-out-proof stem design
- Adjustable packing gland
- Stainless Steel Ball and Stem
- 600 PSIG
- Oxygen Cleaned

ALL STAINLESS STEEL BALL & STEM



Bronze Ball Valves

Part #	Connection
ABV-14-OX	1/4" NPT
ABV-38-OX	3/8" NPT
ABV-12-OX	1/2" NPT
ABV-34-OX	3/4" NPT
ABV-1-OX	1" NPT

3-Way Diversion Bronze Ball Valve

FEATURES

- Two Piece Body
- Reinforced Seats
- Blow-out-proof stem design
- Adjustable packing gland
- Stainless Steel Ball and Stem
- 400 PSIG
- Oxygen Cleaned

3-Way Diversion Bronze Ball Valve

Part #	Connection
ABV-3W14-OX	1/4" NPT
ABV-3W38-OX	3/8" NPT
ABV-3W12-OX	1/2" NPT
ABV-3W34-OX	3/4" NPT
ABV-3W1-OX	1" NPT

3-Way Diversion Stainless Steel Ball Valve

FEATURES

- Reinforced Seats
- Meets NACE MR-01-75
- Blow-out-proof stem design
- Adjustable packing gland
- Stainless Steel Ball and Stem
- 800 PSIG
- Oxygen Cleaned

3-Way Diversion Stainless Steel Ball Valve

Part #	Connection
ABV-3WSS14-OX	1/4" NPT
ABV-3WSS38-OX	3/8" NPT
ABV-3WSS12-OX	1/2" NPT
ABV-3WSS34-OX	3/4" NPT
ABV-3WSS1-OX	1" NPT

Ball Valves, Carbon Steel with Vented Ball

FEATURES

- Forged Construction
- Raised Handle Stops
- Blowout proof stem design
- Adjustable packing gland
- Zinc phosphate corrosion protection
- Stainless Steel Ball and Stem
- Vented Ball
- 2,000 PSIG

Ball Valves, Carbon Steel with Vented Ball

Part #	Connection
ABV-C14-SV-SSBS	1/4" F NPT
ABV-C38-SV-SSBS	3/8" F NPT
ABV-C12-SV-SSBS	1/2" F NPT
ABV-C34-SV-SSBS	3/4" F NPT
ABV-C1-SV-SSBS	1" F NPT