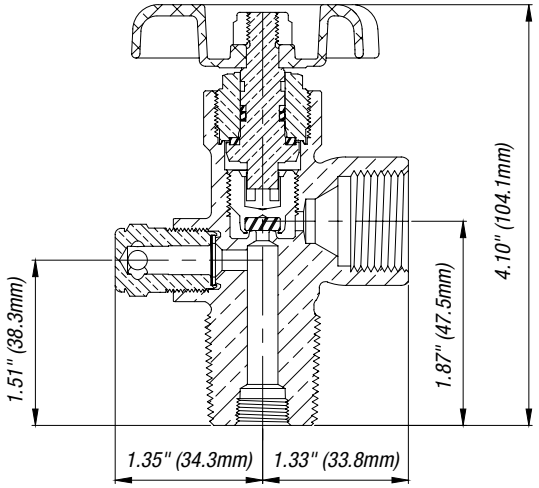
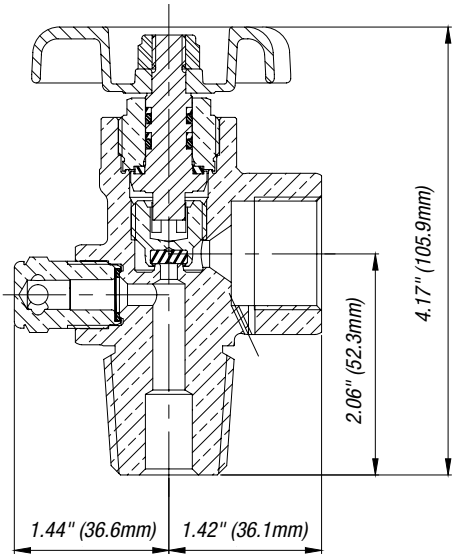
GV & GVHM Series

Global Industrial Gas Valves



GV Series

Up to 3000 PSI Working Pressure



GVHM Series

3000 PSI and Above Working Pressure

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

Key Features & Benefits

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

*For Product Markings Reference, see (A) on **page 66**.*

GV & GVHM Series

Global Industrial Gas Valves

Design Specifications		
	English	**Metric**
Maximum Working Pressure	GV: 3500 PSI GVHM: 6000 PSI	GV: 241 Bar GVHM: 413 Bar
Burst Pressure	GV: 10,000 PSI GVHM: 13,500 PSI	GV: 689 Bar GVHM: 931 Bar
Operating Temperature Range	-50˚ F → +149˚ F	-45˚ C → +65˚ C
Storage Temperature Range	-65˚ F → +155˚ F	-54˚ C → +68˚ C
Leak Rate Internal/External	GV: $1x10^{-3}$ atm cc/sec. GVHM: $1x10^{-4}$ atm cc/sec.	GV: $1x10^{-3}$ Bar mL/sec. GVHM: $1x10^{-4}$ Bar mL/sec.
Minimum Cycle Life	2000 Cycles	
Cv Flow Factor	Standard: .690 CO_2/Manifold: 1.23	
Closing Torque	20–30 in.-lbs.	2.2–3.3 N-m
Operating Torque	10–20 in.-lbs.	1.1–2.2 N-m
Bonnet Installation Torque	GV: 50–60 ft.-lbs. GVHM: 60–70 ft.-lbs.	GV: 68–81 N-m GVHM: 81–95 N-m
Handwheel Nut Installation Torque	15–35 in.-lbs.	1.7–3.9 N-m
PRD Installation Torque	GV: 25–35 ft.-lbs. GVHM: 40–50 ft.-lbs.	GV: 34–47 N-m GVHM: 54–68 N-m
PRD Flow Capacity	60 cfm @ 100 PSI	1700 L/min. @ 6.9 Bar

Materials of Construction		
Sherwood Part Number	**Part Description**	**Materials of Construction**
GV & GVHM Series Industrial and Chrome-Plated Valves		
N/A	Body	Forged Brass C37700; Chrome Plating When Applicable
N/A	Bonnet	Brass C36000; Chrome Plating When Applicable
1919A	Handwheel	Aluminum A380
1251-6	Handwheel Nut	Steel Class 8, Zinc Plating
N/A	Lower Plug	Brass C48500
N/A	Lower Plug Seat	Nylon Zytel 101
See Chart on Page 62	PRD	**Plug:** Brass C36000; Chrome Plating When Applicable **Rupture Disc:** Nickel Alloy 201; Copper C22000 **Webbed Seal Gasket:** Copper Dead Soft C11000
N/A	Stem	Brass C36000
G011EP	O-Ring	Ethylene Propylene (EPDM)
N/A	Back-up O-Ring	Ethylene Propylene (EPDM)
N/A	Thrust Washer	Delrin® 500 AF

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

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

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

NOTE: GV & GVHM Series valves are not for use with CNG applications. For CNG Service, see NGV and NGVHM Series on ***pages 45-47****.*
No mechanical addition of force is to be used with handwheel-style valves without the use of controlled torque.

GV & GVHM Series

Global Industrial Gas Valves

*For further ordering information, refer to the Selection of Pressure Relief Devices on **page 62**, the Pressure Relief Device Numbering Matrix on **page 65**, the Product Markings Reference on **page 66** and the Valve Part Numbering Matrix on **page 70**.*

Ordering Information

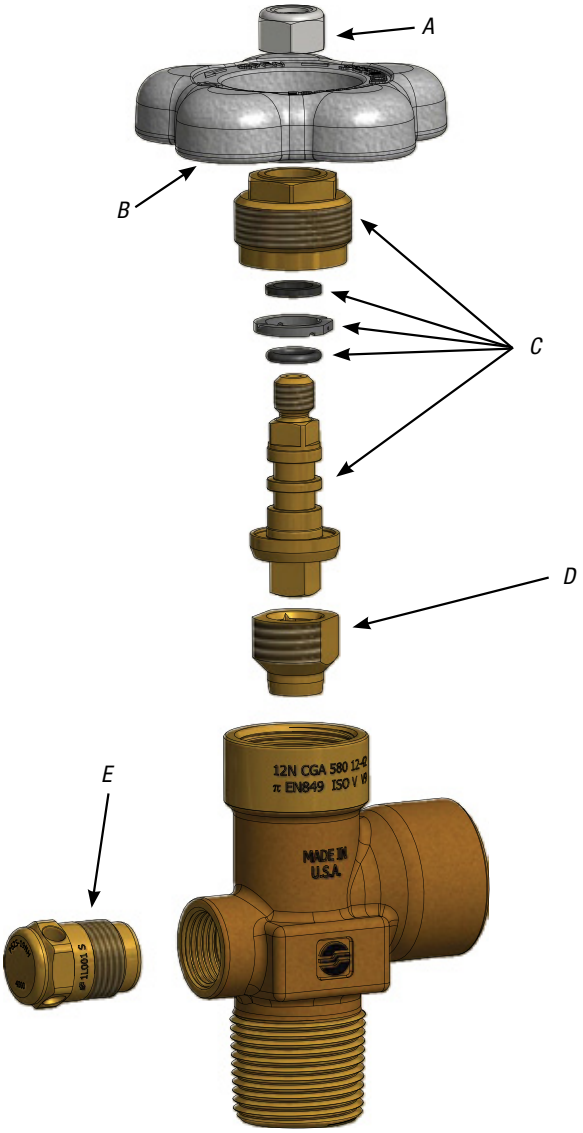
Sherwood Part Number	Gas Service @ 70° F	CGA Outlet	Outlet Thread Size	Inlet Thread Size
Carbon Dioxide				
GV32041-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	½"–14 NGT
GV32061-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	¾"–14 NGT
GV32081-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	1"–11½ NGT
GV32025E1-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	25E ISO
GV32051-XX-75	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	.750–16 UNF
GV32051-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	1.125–12 UNF
Nitrous Oxide				
GV32641-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	½"–14 NGT
GV32661-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	¾"–14 NGT
GV32681-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	1"–11½ NGT
GV32625E1-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	25E ISO
GV32651-XX-75	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	.750–16 UNF
GV32651-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	1.125–12 UNF
Air				
GV34641-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	½"–14 NGT
GV34661-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	¾"–14 NGT
GV34681-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	1"–11½ NGT
GV34625E1-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	25E ISO
GV34651-XX-75	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	.750–16 UNF
GV34651-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	1.125–12 UNF
GVHM34761-XX	3001 PSI–4700 PSI	347	.825–14 NGO RH Ext.	¾"–14 NGT
GVHM70261-XX	4701 PSI–6400 PSI	702	1.125–14 NGO RH Int.	¾"–14 NGT
Carbon Monoxide and Hydrogen				
GV35045-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	½"–14 NGT
GV35065-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	¾"–14 NGT
GV35085-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	1"–11½ NGT
GV35025E5-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	25E ISO
GV35055-XX-75	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	.750–16 UNF
GV35055-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	1.125–12 UNF
GVHM69565-XX	3001 PSI–4700 PSI	695	1.045–14 NGO LH Int.	¾"–14 NGT
GVHM70365-XX	4701 PSI–6400 PSI	703	1.125–14 NGO LH Int.	¾"–14 NGT
Oxygen				
GV54041-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	½"–14 NGT
GV54061-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	¾"–14 NGT
GV54081-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	1"–11½ NGT
GV54051-XX-75	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	.750–16 UNF
GV54051-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	1.125–12 UNF
GVHM57761-XX	3001 PSI–3500 PSI	577	.960–14 NGO RH Ext.	¾"–14 NGT
GVHM70161-XX	3501 PSI–4700 PSI	701	1.103–14 NGO RH Ext.	¾"–14 NGT
Argon, Helium, Krypton, Neon, Nitrogen and Xenon				
GV58041-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	½"–14 NGT
GV58061-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	¾"–14 NGT
GV58081-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	1"–11½ NGT
GV58025E1-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	25E ISO
GV58051-XX–75	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	.750–16 UNF
GV58051-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	1.125–12 UNF
GVHM68061-XX	3001 PSI–4700 PSI	680	1.045–14 NGO RH Int.	¾"–14 NGT
GVHM67761-XX	4701 PSI–6400 PSI	677	1.030–14 NGO LH Ext.	¾"–14 NGT
Sulfur Hexafluoride				
GV59041-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	½"–14 NGT
GV59061-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	¾"–14 NGT
GV59081-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	1"–11½ NGT
GV59025E1-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	25E ISO
GV59051-XX–75	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	.750–16 UNF
GV59051-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	1.125–12 UNF

NOTE: For GV and GVHM Series options, see following page.

Parts Breakdown for GV or GVHM Series Industrial and Chrome-Plated Valves

A. Handwheel Nut	**1251-6**
B. Handwheel	**1919A**
C. Bonnet and Stem Assembly Includes: Bonnet, Back-Up O-Ring*, O-Ring*, Thrust Washer, Stem	**1400-30-XXX** (GV) **1400-32GVH-XXX** (GVHM)**
D. Lower Plug and Seat Assembly Includes: Lower Plug and Seat	**1400-40** (Standard) **1400-40A** (CO_2 /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.*



*For further ordering information, refer to the Selection of Pressure Relief Devices on **page 62**, the Pressure Relief Device Numbering Matrix on **page 65**, the Product Markings Reference on **page 66** and the Valve Part Numbering Matrix on **page 70**.*

GV Key Replacement Parts	
Sherwood Part Number	**Description**
GV Kits, Brass	
1400-30-101KIT	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube
GV Kits, Plated	
1-1400-30-101KIT	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube

GVHM Key Replacement Parts	
Sherwood Part Number	**Description**
GVHM Kits, Brass	
1400-32GVH-100KIT	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen
1400-32-GVH-101KIT	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube
GVHM Kits, Plated	
1-1400-32GVH-100KIT	Each kit includes 25 Bonnet and Stem Assemblies, Turmoxygen
1-1400-32-GVH-101KIT	Each kit includes 25 Bonnet and Stem Assemblies, Christo-Lube

Ordering Options (Refer to Ordering Information on previous page for base part numbers.)
Oversize Inlets: 4 and 7 (low-pressure) and 24 (high-pressure only) threads oversize inlets: To order, add -4, -7 or -24 to the end of the Part Number. For example, GV34661-XX becomes GV34661-XX-7.
Chrome plating: To order, add letter "A" after letters GV or GVHM in the Part Number. For example, GV34661-XX becomes GVA34661-XX.
Lexan® polycarbonate handwheels: To order, add suffix LX to the end of the Part Number. For example. GV34661-XX becomes GV34661-XXLX.
Fusible backed Pressure Relief Devices in 165° F or 212° F nominal melting temperatures:

NOTE: For CNG service valves, see NGV & NGVHM Series on pages 45–47.