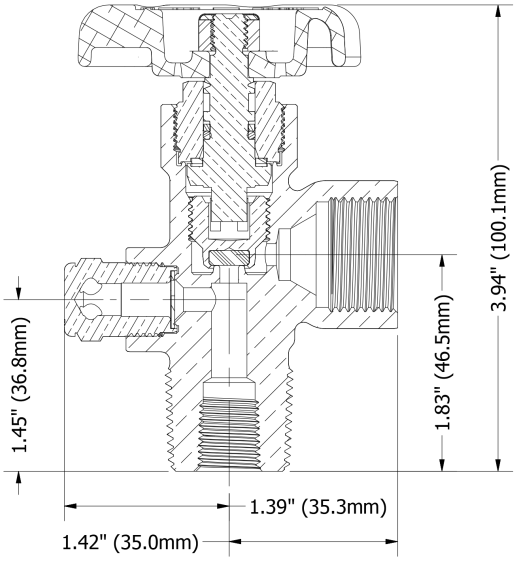
GSV & GSHV Series

Global Industrial Gas Valves

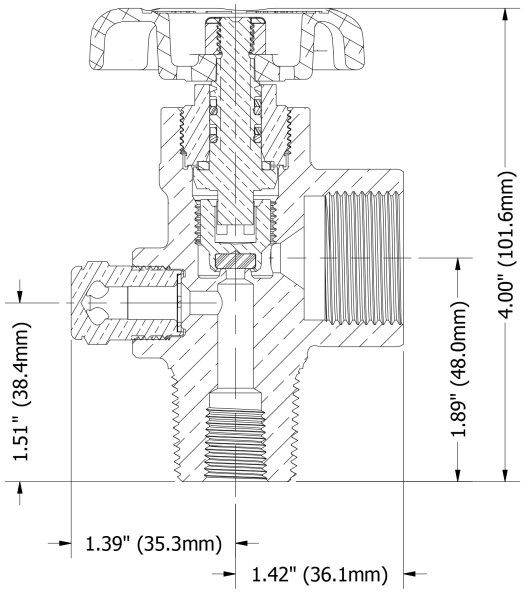
GSV58061-XX



GSV Series

Up to 3500 PSI Working Pressure

GSHV70361-XX



GSHV Series

Up to 6400 PSI Working Pressure

Designed for use in every country around the world, our Global Industrial Gas Valve, the GSV Series is designed to meet the newest revision of ISO 10297 and CGA V-9. For use in cylinders containing inerts, oxidizers and flammables.

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
- Improved 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 (GSV) or double O-ring (GSHV) 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
- Inlets tapped (1/4" NPT) for dip tube as required

For Product Markings Reference, see (A) on the following page

GSV Series

Global Industrial Gas Valves

Design Specifications		
	English	**Metric**
Maximum Working Pressure	3,500 PSI	241 Bar
Burst Pressure	10,000 PSI	689 Bar
Operating Temperature Range	-50˚ F →+149˚ F	-45˚ C →+65˚ C
Storage Temperature Range	-65˚ F →+155˚ F	-54˚ C →+68˚ C
Leak Rate Internal/External	$1x10^{-3}$ atm cc/sec.	$1x10^{-3}$ 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	50–60 ft.-lbs.	68-81 N-m
Handwheel Nut Installation Torque	15–35 in.-lbs.	1.7–3.9 N-m
PRD Installation Torque	25-35 ft.-lbs.	34–47 N-m
PRD Flow Capacity	60 cfm @ 100 PSI	1700 L/min. @ 6.9 Bar

Materials of Construction	
Part Description	**Materials of Construction**
Body	Forged Brass C37700; Chrome Plating When Applicable
Bonnet	Brass C36000; Chrome Plating When Applicable
Handwheel	Aluminum A380
Handwheel Nut	Steel Class 8, Zinc Plating
Lower Plug	Brass C48500
Lower Plug Seat	Nylon Zytel 101
PRD	**Plug:** Brass C36000; Chrome Plating When Applicable **Rupture Disc:** Nickel Alloy 201; Copper C22000 **Webbed Seal Gasket:** Copper Dead Soft C11000
Stem	Brass C36000
O-Ring	Ethylene Propylene (EPDM)
Back-up O-Ring	PTFE
Thrust Washer	Delrin® 500 AF

NOTE: GSV Series valves are not for use with CNG applications. For CNG Service, see NGSV Series

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

Inlet O-Ring for Straight Threaded GSV 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

Replacement Parts	
Sherwood Part Number	**Description**
1251-6	Handwheel Nut
1919A	Handwheel
P625-19X9-XX	Pressure Relief Device Unitized Assembly Includes: Plug, Rupture Disc and Webbed Seal Washer

GSHV Series

Global Industrial Gas Valves

Design Specifications		
	English	**Metric**
Maximum Working Pressure	6,400 PSI	441 Bar
Burst Pressure	13,500 PSI	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	$1x10^{-4}$ atm cc/sec.	$1x10^{-4}$ Bar mL/sec.
Minimum Cycle Life	2000 Cycles	
Cv Flow Factor	Standard: .690	
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	60–70 ft.-lbs.	81–95 N-m
Handwheel Nut Installation Torque	15–35 in.-lbs.	1.7–3.9 N-m
PRD Installation Torque	40–50 ft.-lbs.	54–68 N-m
PRD Flow Capacity	60 cfm @ 100 PSI	1700 L/min. @ 6.9 Bar

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

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

Materials of Construction	
Part Description	**Materials of Construction**
Body	Forged Brass C37700; Chrome Plating When Applicable
Bonnet	Brass C36000; Chrome Plating When Applicable
Handwheel	Aluminum A380
Handwheel Nut	Steel Class 8, Zinc Plating
Lower Plug	Brass C48500
Lower Plug Seat	Nylon Zytel 101
PRD	**Plug:** Brass C36000; Chrome Plating When Applicable **Rupture Disc:** Nickel Alloy 201; Copper C22000 **Webbed Seal Gasket:** Copper Dead Soft C11000
Stem	Brass C36000
O-Ring	Ethylene Propylene (EPDM)
Back-up O-Ring	PTFE
Thrust Washer	Delrin® 500 AF

Replacement Parts	
Sherwood Part Number	**Description**
1251-6	Handwheel Nut
1919A	Handwheel
P625-19X9H-XX	Pressure Relief Device Unitized Assembly Includes: Plug, Rupture Disc and Webbed Seal Washer

NOTE: GSHV Series valves are not for use with CNG applications. For CNG Service, see NGSHV Series

Industrial Gas Valves

GSV & GSHV Series

Global Industrial Gas Valves

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

Ordering Information

Sherwood Part Number	Gas Service @ 70° F	CGA Outlet	Outlet Thread Size	Inlet Thread Size
Carbon Dioxide				
GSV32041-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	½" NGT
GSV32061-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	¾" NGT
GSV32081-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	1" NGT
GSV32025E1-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	25E ISO
GSV32051-XX-75	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	.750–16 UNF
GSV32051-XX	0 PSI–3000 PSI	320	.825–14 NGO RH Ext.	1.125–12 UNF
Nitrous Oxide				
GSV32641-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	½" NGT
GSV32661-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	¾" NGT
GSV32681-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	1" NGT
GSV32625E1-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	25E ISO
GSV32651-XX-75	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	.750–16 UNF
GSV32651-XX	0 PSI–3000 PSI	326	.825–14 NGO RH Ext.	1.125–12 UNF
Air				
GSV34641-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	½" NGT
GSV34661-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	¾" NGT
GSV34681-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	1" NGT
GSV34625E1-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	25E ISO
GSV34651-XX-75	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	.750–16 UNF
GSV34651-XX	0 PSI–3000 PSI	346	.825–14 NGO RH Ext.	1.125–12 UNF
GSHV34761-XX	3001 PSI–4700 PSI	347	.825–14 NGO RH Ext.	¾" NGT
GSHV70261-XX	4701 PSI–6400 PSI	702	1.125–14 NGO RH Int.	¾" NGT
Carbon Monoxide and Hydrogen				
GSV35045-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	½" NGT
GSV35065-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	¾" NGT
GSV35085-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	1" NGT
GSV35025E5-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	25E ISO
GSV35055-XX-75	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	.750–16 UNF
GSV35055-XX	0 PSI–3000 PSI	350	.825–14 NGO LH Ext.	1.125–12 UNF
GSHV69565-XX	3001 PSI–4700 PSI	695	1.045–14 NGO LH Int.	¾" NGT
GSHV70365-XX	4701 PSI–6400 PSI	703	1.125–14 NGO LH Int.	¾" NGT
Oxygen				
GSV54041-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	½" NGT
GSV54061-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	¾" NGT
GSV54081-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	1" NGT
GSV54051-XX-75	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	.750–16 UNF
GSV54051-XX	0 PSI–3000 PSI	540	.903–14 NGO RH Ext.	1.125–12 UNF
GSHV57761-XX	3001 PSI–3500 PSI	577	.960–14 NGO RH Ext.	¾" NGT
GSHV70161-XX	3501 PSI–4700 PSI	701	1.103–14 NGO RH Ext.	¾" NGT
Argon, Helium, Krypton, Neon, Nitrogen and Xenon				
GSV58041-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	½" NGT
GSV58061-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	¾" NGT
GSV58081-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	1" NGT
GSV58025E1-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	25E ISO
GSV58051-XX–75	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	.750–16 UNF
GSV58051-XX	0 PSI–3000 PSI	580	.965–14 NGO RH Int.	1.125–12 UNF
GSHV68061-XX	3001 PSI–4700 PSI	680	1.045–14 NGO RH Int.	¾" NGT
GSHV67761-XX	4701 PSI–6400 PSI	677	1.030–14 NGO LH Ext.	¾" NGT
Sulfur Hexafluoride				
GSV59041-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	½" NGT
GSV59061-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	¾" NGT
GSV59081-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	1" NGT
GSV59025E1-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	25E ISO
GSV59051-XX–75	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	.750–16 UNF
GSV59051-XX	0 PSI–3000 PSI	590	.965–14 NGO LH Int.	1.125–12 UNF

Oversize Inlets: 4 and 7 (low-pressure) and 24 (high-pressure) threads oversize inlets: To order, add -4, -7 or -24 to the end of the Part Number. For example, GSV34661-XX becomes GSV34661-XX-7

Chrome plating: To order, add letter "A" after letters GSV or GSHV in the Part Number. For example, GSV34661-XX becomes GSVA34661-XX.

Lexan® polycarbonate handwheels: To order, add suffix LX to the end of the Part Number. For example. GSV34661-XX becomes GSV34661-XXLX.

Fusible backed pressure relief devices: For 165˚ F or 212˚ F nominal melting temperatures, change 1 in the Part Number to 4 (165˚ F) or to 5 (212˚ F) (e.g. GSV35061-XX becomes GSV35064-XX for 165˚ F, or GSV35065-XX for 212˚ F).

Valve Part Numbering Matrix: Global Valves

GSV	A	X	0	6	1	-	38	B

Valve Category		
GSV	=	Global Valve
GSRPV	=	Global Residual Pressure Valve
GSHV	=	Global High-Pressure Valve
NGSV	=	Global Valve for Hydrocarbon-Based Gases
NGSHV	=	Global Valve for High-Pressure Hydrocarbon-Based Gases

Outlet Designation
Letter or Number from the Associated Specification

Plating		
(BLANK)	=	Unplated
A	=	Chrome Plated

Safety Type		
0	=	No Safety
1	=	Unbacked Frangible Disc
2	=	165° Fuse Plug
3	=	212° Fuse Plug
4	=	Backed Frangible Disc with 165° Fusible Metal
5	=	Backed Frangible Disc with 212° Fusible Metal
H	=	Backed Frangible Disc with 255° Fusible Metal

Safety Pressure		
28	=	3000 Max. PSI
32	=	3360 Max. PSI
35	=	3775 Max. PSI
38	=	4000 Max. PSI
39	=	4351 Max. PSI
43	=	4450 Max. PSI
46	=	4833 Max. PSI
47	=	4917 Max. PSI
48	=	5000 Max. PSI
55	=	5833 Max. PSI
63	=	6665 Max. PSI
65	=	6750 Max. PSI
71	=	7500 Max. PSI
78	=	8333 Max. PSI
85	=	9000 Max. PSI
95	=	10,000 Max. PSI
190	=	190 Bar
216	=	216 Bar
250	=	250 Bar
270	=	270 Bar
300	=	300 Bar

Special Features		
00	=	Safety Port Machined Safety Not Installed
B	=	Cleaned for O_2 Service and Bagged
CC	=	Cap and Chain
FT	=	Filter
GH	=	Gauge Hole
HC	=	Rubber Handwheel Cover
LX	=	Lexan® Handwheel
MA	=	Stamped: Argon
MB	=	Stamped: Air Breathing
MC	=	Stamped: Carbon Dioxide
MD	=	Stamped: CO_2 Med.
MG	=	Stamped: Acetylene
MM	=	Stamped: Carbon Monoxide
MN	=	Stamped: Nitrogen O.F.
MO	=	Stamped: Oxygen
MQ	=	Stamped: Oxygen-Hel. Med.
MR	=	Stamped: Air Industrial
MS	=	Stamped: Sulphur Hexafluoride
MY	=	Stamped: Hydrogen
M1	=	Stamped: Inert O.F.
M2	=	Stamped: Inert O.T.
M3	=	Stamped: Nitrous Oxide Med.
M4	=	Stamped: Oxygen Med.
M7	=	Stamped: 6000 PSI
T	=	¼" NPT Tapped Inlet
VS	=	Vented Flare Safety (Hydrogen)
-3	=	3 Threads Oversize
-4	=	4 Threads Oversize
-7	=	7 Threads Oversize
-24	=	24 Threads Oversize
When Inlet Designation is 5		
-50	=	.500–20 UNF Inlet Thread
-62	=	.625–18 UNF Inlet Thread
-75	=	.750–16 UNF Inlet Thread
-87	=	.875–14 UNF Inlet Thread

Outlet Code		
(NONE)	=	CGA Outlet
ABN	=	Brazil, ABNT
AS	=	Australia, AS2473
BS	=	British Standard
DIN	=	Germany
IND	=	Chile, INDURA
INF	=	Mexico, INFRA
IRA	=	Argentina, IRAM
JIS	=	Japan
NF	=	France
SMS	=	Sweden

Inlet Designation		
3	=	⅜"–18 NGT
4	=	½"–NGT
4FPT	=	¼"–18 NPT Female
5	=	Straight Thread, 1⅛"–12 UNF (Unless Changed by Special Feature)
6	=	¾"–14 NGT
7	=	¾"–14 SGT
8	=	1"–11½NGT
8MPT	=	½"–14 NPT
12FRT	=	¾"–14 NPT Female
17E	=	17,4 ISO/DIS 11116
25E	=	25,8 ISO/DIS & DIN 28,8
25P	=	M25 x 2
198	=	DIN W19,8
313	=	DIN W31,3
SP12	=	¾"–14 NPSM
V1	=	JIS 20 x 14
V2	=	JIS 28 x 14
V3	=	JIS 28 x 14 Reduced Length
W1	=	1-14 AS2473
W6	=	0.06-14 AS2473
W71	=	0.715-14 AS2473

New Part Number Cross Reference

Previous PN Prefix	New PN Prefix	New PN Example
GV	GSV	GSV58061-32
GVHM	GSHV	GSHV70261-85
GVT	GSVT	GSVT30060
GRPV	GSRPV	GSRPV32061-28
NGV	NGSV	NGSV35065-32
NGVHM	NGSHV	NGSHV69565-55
NGRPV	NGSRPV	NGSRPV35061-38

Pressure Relief Device Numbering Matrix: Unitized Plug Series

1	-	P625	X	-	19	X	X	9	XX	-	XX	X	X

Surface Finish

(BLANK)	=	No Plating
1	=	Chrome Plating

Thread Diameter

.625

Material

(BLANK)	=	Brass

Pitch

19

Country

(BLANK)	=	None
E	=	European

Safety Disc

(BLANK)	=	None
C	=	Copper
N	=	Nickel

Type

(BLANK)	=	None
FL	=	Flare
H	=	High Pressure -46 Burst Pressure and Higher

Burst Pressure

28	=	3000 Max. PSI
32	=	3360 Max. PSI
35	=	3775 Max. PSI
38	=	4000 Max. PSI
39	=	4351 Max. PSI
43	=	4450 Max. PSI
46	=	4833 Max. PSI
47	=	4917 Max. PSI
48	=	5000 Max. PSI
55	=	5833 Max. PSI
63	=	6665 Max. PSI
65	=	6750 Max. PSI
71	=	7500 Max. PSI
78	=	8333 Max. PSI
85	=	9000 Max. PSI
95	=	10,000 Max. PSI
190	=	190 Bar
216	=	216 Bar
250	=	250 Bar
270	=	270 Bar
300	=	300 Bar

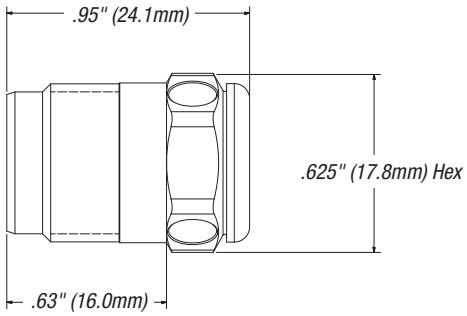
Fuse Metal

(BLANK)	=	None
M	=	165˚ F
W	=	212˚ F

Cleaned for Oxygen Service

(BLANK)	=	None
B	=	Cleaned and Bagged

Pressure Relief Devices



P625-19X9-XXX

Ordering Information

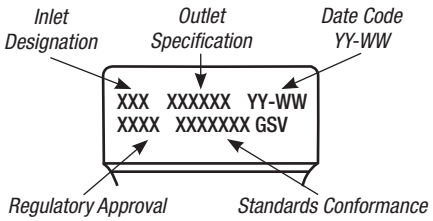
Pressure Relief Device				Cylinder Working Pressure			Disc Rupture Range PSI @ 160° F	
CG-1 Frangible Disc No Fuse Metal	CG-4 * Frangible Disc 165° F Fuse Metal	CG-5 * Frangible Disc 212° F Fuse Metal	-XX	D.O.T. Spec 3A 3AA 3AL Cylinders PSI	D.O.T. Exemption Cylinders PSI	International Cylinders Bar	Min.	Max.
GSV Low Pressure								
P625-19N9-28	P625-19C9-28M	P625-19C9-28W	-28	1800	—	—	2700	3000
P625-19N9-32	P625-19C9-32M	P625-19C9-32W	-32	2015	—	—	3025	3360
P625-19N9-35	P625-19C9-35M	P625-19C9-35W	-35	2265	—	—	3400	3775
P625-19N9-38	P625-19C9-38M	P625-19C9-38W	-38	2400	—	—	3600	4000
P625-19N9-39	P625-19C9-39M	P625-19C9-39W	-39	—	—	200	3915	4350
P625-19N9-43	P625-19C9-43M	P625-19C9-43W	-43	2670	—	—	4005	4450
P625-19N9-46	P625-19C9-46M	P625-19C9-46W	-46	2900	—	—	4350	4833
P625-19N9-47	P625-19C9-47M	P625-19C9-47W	-47	2950	—	—	4425	4917
GSHV High Pressure								
P625-19N9H-48	—	P625-19C9H-48W	-48	3000	—	230	4500	5000
P625-19N9H-55	—	P625-19C9H-55W	-55	3500/3600	—	—	5250	5833
P625-19N9H-63	—	P625-19C9H-63W	-63	4000	—	—	6000	6665
P625-19N9H-65	—	P625-19C9H-65W	-65	—	4500	300	6075	6750
P625-19N9H-71	—	P625-19C9H-71W	-71	—	5000	—	6750	7500
P625-19N9H-78	—	P625-19C9H-78W	-78	5000	—	—	7500	8333
P625-19N9H-85	—	P625-19C9H-85W	-85	—	6000	—	8100	9000
P625-19N9H-95	—	P625-19C9H-95W	-95	6000	—	—	9000	10,000

** Copper disc must be used for hydrogen service.*

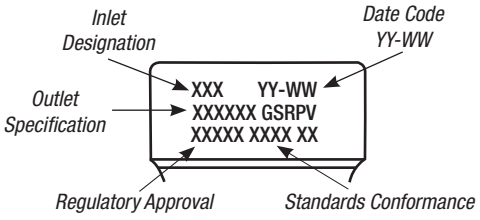
Pressure relief devices come standard with a nickel disc. For copper disc option with CG-4 and CG-5, use an "C" in place of the "N" in the part number. For chrome-plated CG1 PRDs, add "1" before Part Number. For example, P625-19N9H-XX becomes 1-P625-19N9H-XX.

Product Markings Reference

A GSV, GSHV, GSV Acetylene, GSVT and NGSV Series



B GSRPV and NGSRPV Series



Inlet Code	
Inlet Code	**Inlet Thread Designation**
4FPT	¼"–18 NPT Female
06N	⅜"–18 NGT
8MPT	½"–14 NPT
08N	½"–14 NGT
12FPT	¾"–14 NPT Female
12N	¾"–14 NGT
12S	¾"–14 SGT
16N	1"–11½ NGT
U8	½"–20 UNF
U10	⅝"–18 UNF
SP12	¾"–14 NPSM
U12	¾"–16 UNF
U14	⅞"–14 UNF
U18	1⅛"–12 UNF
17E	17,4 ISO/DIS 11116
198	DIN 477 W18,8 x 1/14
25E	25,8 ICO/DSI 10920.2 & DIN 477 28.8 x 1/14
313	DIN 477 W31,3 x 1/14
V1	20 X 14 JIS B 8246
V2	28 X 14 JIS B 8246
V3	28 X 14 JIS B 8246 (Reduced Length)
W6	0.06–14 AS2473
W71	0.715–14 AS2473
W1	1–14 AS2473
18P	M18 x 1,5
25P	M25 x 2

Outlet Codes	
Code	**Description**
CGA	CGA Outlet
ABN	Brazil, ABNT
AS	Australia, AS2473
BS	British Standard
DIN	Germany
IND	Chile, Indura
INF	Mexico, INFRA
IRA	Argentina, IRAM
JIS	Japan
NF	France
SMS	Sweden

NOTE: Date codes include the last two digits of the year manufactured and two digits to represent the week manufactured. For example, the year is represented as "19" for 2019 or "20" for 2020. For example, the week is represented as "01" for first week of the year manufactured and "10" for tenth week of the year manufactured.