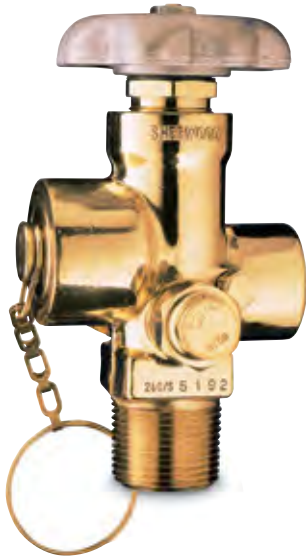


BV Series

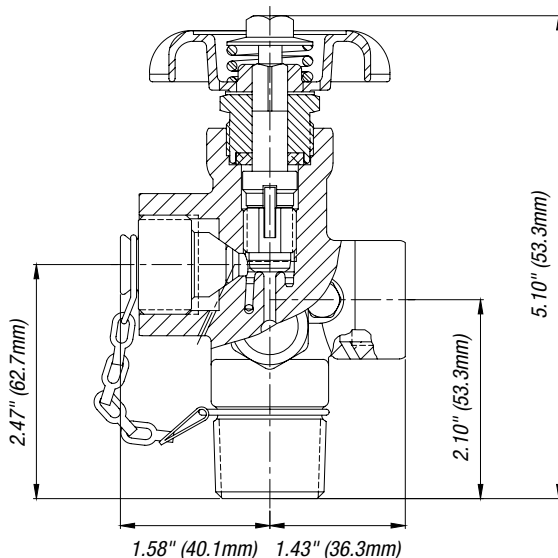
Hi/Lo Valves with Built-In Regulators



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.

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 680PW-2) supplied separately to cylinder filling plants only



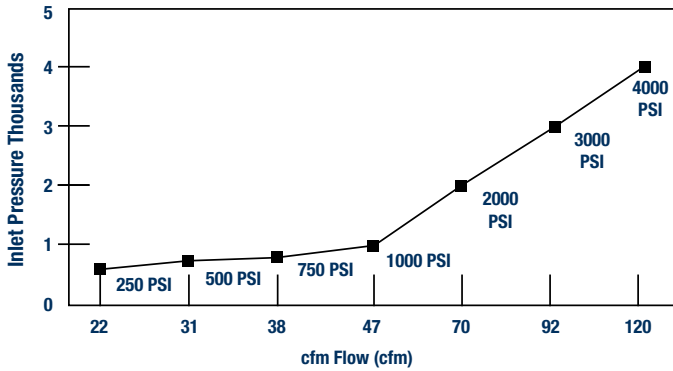
BV6861-65-XXXT

For Product Markings Reference, see **F** on page 66.

BV Series

Hi/Lo Valves with Built-In Regulators

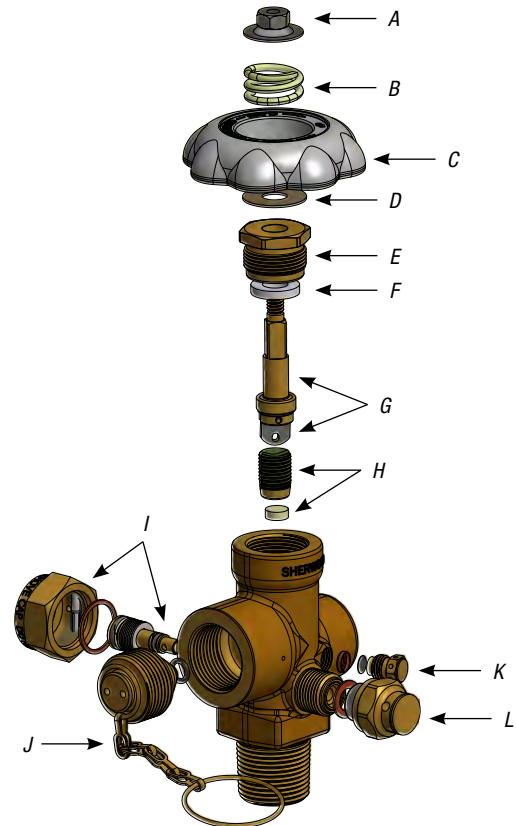
BV Series Regulated Outlet Flow



Parts Breakdown for BV Series

- A.** Handwheel Nut **47-1003**
- B.** Handwheel Spring **45-1012**
- C.** Handwheel **1401**
- D.** Handwheel Washer **1413**
- E.** Bonnet **1250-2**
- F.** Packing **1250-6**
- G.** Stem & Tang Assembly **1250-30**
- H.** Plug & Seat Assembly **1250B-40A**
- I.** Piston & Spring Assembly **Not sold separately**
- J.** Plug Assembly **680P-20 (Inert Gases)**
701P-20 (Oxygen)
- K.** Safety Plug Assembly **4000-60-29**
- L.** Safety Cap Assembly **650-19F9-65**

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



Industrial Gas Valves

BV Series

Hi/Lo Valves with Built-In Regulators

Materials of Construction		
Sherwood Part Number	Part Description	Materials of Construction
N/A	Body	Brass C37700
N/A	Filter	Sintered Bronze 65–100 Micron
1250B-40 or 1250B-40A	Plug and Seat Assembly Plug Seat	Nylon Zytel 101 Naval Brass C48500 PTFE Coated
1250-2	Bonnet	Brass C37700
1401	Handwheel	Aluminum A380
47-1003	Nut	AISI 1010 Steel Corrosion Protective Coating
45-1012	Spring	Hard Drawn Spring Steel Cadmium or Zinc Plate
1413	Washer, Handwheel	High Density Gray Fiber Paraffin Coated
1250-6	Packing	Virgin PTFE
680P-20 (Inert Gases) 701P-20 (Oxygen)	Plug Assembly Ring Chain Plug O-Ring	Brass Wire Brass Brass C36000 Buna-N (680P-20) or Viton® (701P-20)
N/A	Pin	Carbon Steel C1215 Zinc Plated
N/A	Piston & Spring Assembly Piston Seat O-Ring Back-up Ring Spring Shim	Brass C36000 ½ Hard PTFE Viton® 75+ or -5 Durometer PTFE Stainless Steel 301 Passivated Brass C26000
N/A	Gasket	Copper Annealed Soft
4000-60-29	Safety Plug Assembly Body Retainer Burst Disc	Brass C36000 Copper C11000 Nickel 201
650-19F9-65	Safety Cap Assembly Gasket Burst Disc Safety Cap	Copper CDA 110 Nickel 201 Brass C36000

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

Ordering Information						
Sherwood Part Number	Gas Service	High Pressure Fill Port Connection	Regulated Outlet Connection	Regulated Outlet Pressure	Inlet	Cap & Plug
BV6861-STD-65-580T	Inert Gases	CGA 680 (high) .965–14 NGO RH Int.	CGA 580 (low)	700–1100 PSI @ 4500 PSI Inlet	¾"–14 NGT	Yes
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
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
BV70161-65-540	Oxygen	CGA 701 (high) 1.103–14 NGO RH Ext.	CGA 540 (low)	700–1100 PSI @ 4500 PSI Inlet	¾"–14 NGT 24 Threads Oversize	Yes
680PW-2	Spanner Wrench Tool					

