



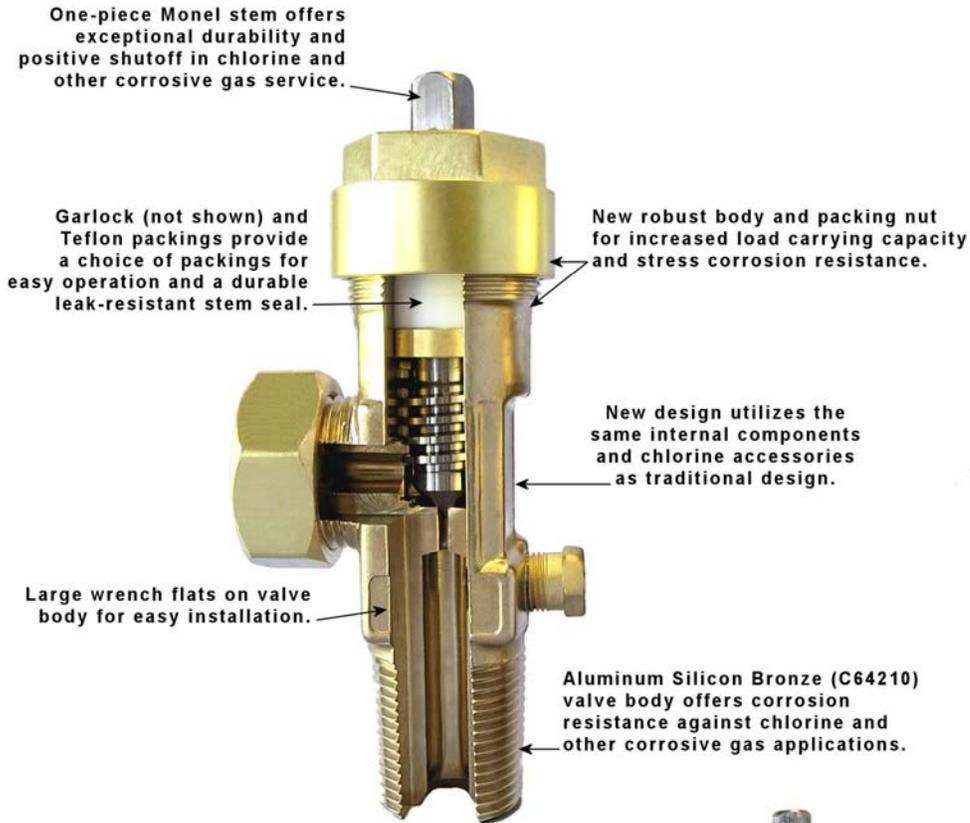
Chlorine Valves and Accessories



Chlorine Cylinder & Ton Container Valves

Standard Chlorine Institute Design & Alternate Design

ALTERNATE VALVE DESIGN vs. STANDARD CHLORINE INSTITUTE VALVE DESIGN FOR CHLORINE CYLINDER AND TON CONTAINER VALVES



Standard Chlorine Institute Valve →





**SPECIFICATIONS FOR BOTH STANDARD CHLORINE INSTITUTE VALVE
 AND ALTERNATE VALVE DESIGN**

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
Chlorine Institute Pamphlet 17	Cylinder and Ton Container Procedure for Chlorine Packaging and Valve Design Criteria
ISO 10297	International Standard for Cylinder Valves Design Specification
TPED	Transportable Pressure Equipment Directive Modules B & D

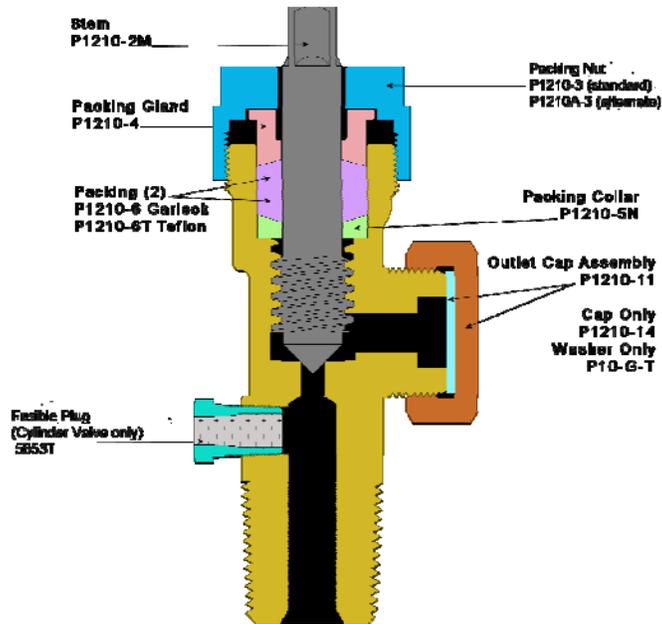
DESIGN SPECIFICATIONS	
Maximum Working Pressure	500 PSIG @ 70°F 34 BAR @ 21°C
Burst Pressure	7,200 PSIG 496 BAR
Operating Temperature	Min -50°F -45°C Max 149°F 65°C
Storage Temperature	Min -60°F -51°C Max 149°F 65°C
Leak Rate Internal/External	1 X 10 ⁻⁶ atm cc/s
Minimum Cycle Life	2,000 cycles
Cv Flow Factor	1210A .733 1214A 1.88

MATERIALS OF CONSTRUCTION FOR CHLORINE CYLINDER AND TON CONTAINER VALVES

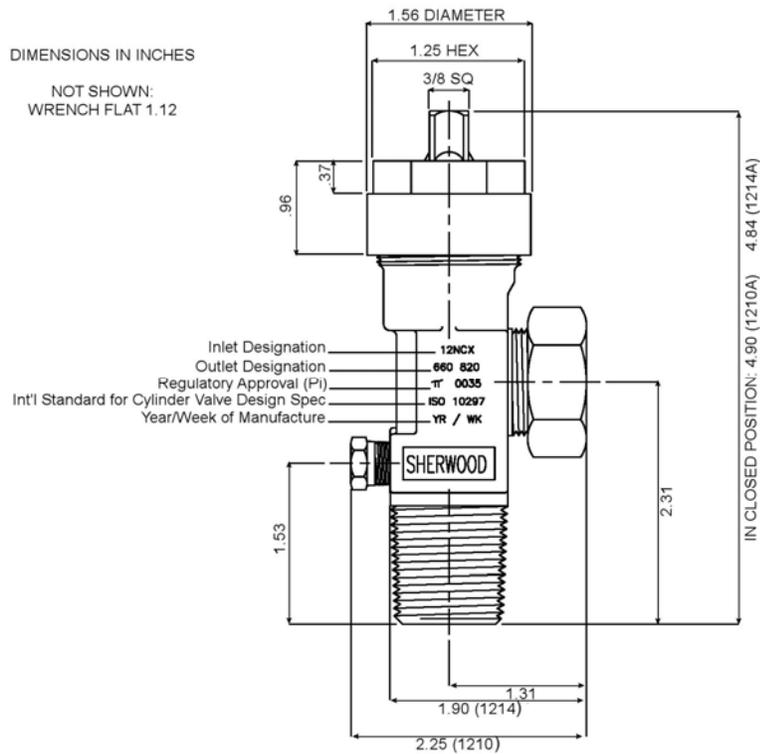
Body	Aluminum Silicon Bronze C64210
Stem	Monel [®] ASTM B164-84 Type UNS NO4400 or NO4405
Packing Nut	UNS Alloy CDA C36000
Packing Collar	Naval Brass C48500
Packing Gland	Brass C36000
Packing	Teflon [®] or Garlock 6130 [®]
Outlet Cap	Brass C36000
Outlet Cap Gasket	Teflon [®]
Fusible Plug PRD	Naval Brass C48500 (with 165°F fusible metal)

TORQUE VALUES FOR CHLORINE CYLINDER AND TON CONTAINER VALVES

5 - 6 Ft. Lbs.	Operating Torque (new or reconditioned valve)
25 - 35 Ft. Lbs.	Packing Nut Installation Torque
10 - 12 Ft. Lbs.	Stem Installation Torque (new or reconditioned valve with refaced seat)
12 - 15 Ft. Lbs.	Fusible Plug Installation Torque



DIMENSIONS FOR CHLORINE CYLINDER AND TON CONTAINER VALVES





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 1 $\frac{1}{4}$ socket or hex box wrench, remove the packing nut by turning it counter clockwise.
2. Using a $\frac{3}{8}$ 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 $\frac{7}{16}$ 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 chamber bore for dirt, debris and damage. Blow out the valve body chamber using clean, dry compressed air or nitrogen to remove these contaminants.
2. Examine all internal and external threads for damage or deterioration due to wear or corrosion. Special attention 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 $\frac{1}{8}$ 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 corroded to the point where safe operation, valve performance or leak integrity may be compromised. Special attention should be given to wear grooves in the nose of the stem. Stems with grooves $\frac{1}{64}$ 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 $\frac{1}{64}$ 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 $\frac{3}{8}$ 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 $1\frac{1}{4}$ 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 $\frac{7}{16}$ socket and a proper torque wrench, tighten the fusible plug to 12-15 ft. lbs. or $1\frac{1}{2}$ - 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.



FUSIBLE METAL PLUGS

- Manufactured in accordance with Chlorine Institute specifications.

- Naval brass and 165°F fusible alloy.

FUSIBLE PLUGS FOR CYLINDER VALVES

5853T	1/8 - 27 NGT	7/16 Hex
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5853X1T	1/8-27 NGT (oversized 1st thrd.)	
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FUSIBLE PLUGS FOR TON CONTAINERS

1333-N1 (N2, N3, N4)	3/4 - 14 NGT (CL1, CL2, CL3, CL4)	1 1/4 Hex
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1303-N1 (N2, N3, N4)	1 - 11 1/2 NGT (CL1, CL2, CL3, CL4)	1 1/4 Hex
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FUSIBLE 303 STAINLESS STEEL PLUG

1304-303	3/4 - 14 NGT	1 1/4 Hex
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YOKE

- Complies with Chlorine Institute specifications.
- Forged steel with zinc plating.
- New design allows for easy parts replacement.
- Replaces 628A yoke.

628B	Yoke Assembly
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P628A-2	Replacement Stem
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P628A-3	Replacement Slotted Follower
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FLEX CONNECTORS

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

6414X11C	CGA 820 X CGA 820; 30 in.
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6414X2C	CGA 820 X CGA 820; 4 ft.
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6414C	CGA 820 X CGA 820; 6 ft.
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6414X1C	CGA 820 X CGA 820; 10 ft.
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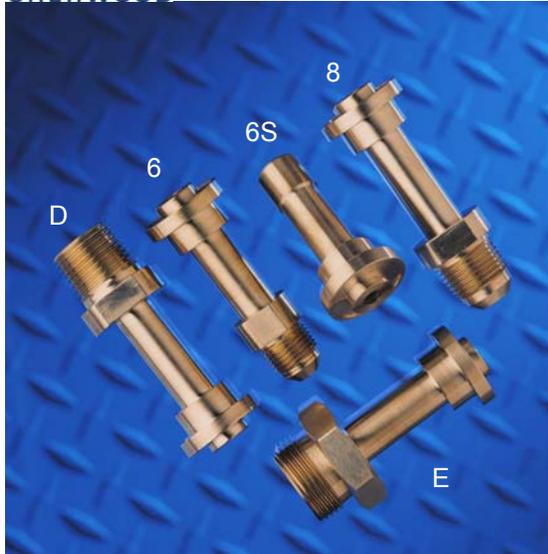
6414X5C	CGA 820 X CGA 820; 16 ft.
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6414X10C	CGA 820 X 5/8 - 18 UNF; 4 ft.
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6414X7C	CGA 820 X 5/8 - 18 UNF; 6 ft.
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6414X8C	5/8 - 18 UNF X 5/8 - 18 UNF; 4 ft.
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6414X9C	5/8 - 18 UNF X 5/8 - 18 UNF; 6 ft.
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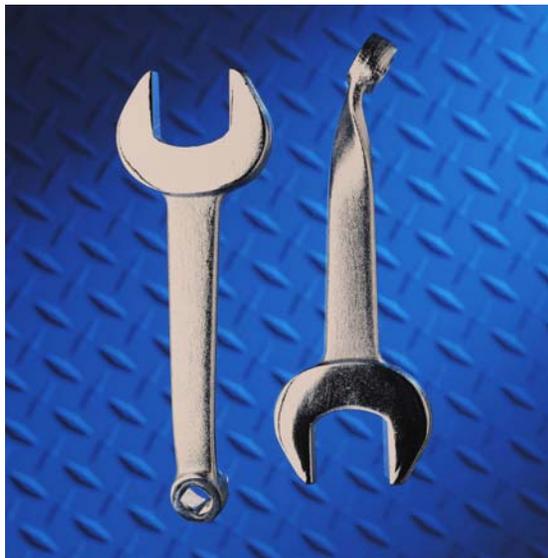


HIGH FLOW YOKE ADAPTERS

5888-6	3/8 SAE Flare
5888-6S	3/8 ODS
5888-8	1/2 SAE Flare
5888-D	1/2 - 14 NPT (male)
5888-E	1.030 - 14 NGO (male)

GASKETS FOR YOKE ADAPTERS

P10-CLAL	Lead Outlet Gasket (.937 OD)
P10-CLBL	Lead Outlet Gasket (.531 OD)



WRENCHES

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

635	Straight Shaft
635X3	Twisted Shaft

1534 / 1534A RESEATING TOOL

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

- 1534** For use with 1210 and 1214.
- 1534A** For use with 1210A and 1214A.



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.



SHERWOOD

For more information or to place an order:

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chlorine@sherwoodvalve.com
www.sherwoodvalve.com

Chlorine Distributors:

**John H Carter Co,
Breard-Gardner, Inc.**

Baton Rouge, LA
Phone: 225-272-4420
Fax: 225-273-4492
www.johnhcarter.com

Sidener Environmental

St. Louis, MO
Phone: 800-528-2887
Fax: 314-991-3527
http://www.sidener.net

International Distributors:

Chemtech International

Media, PA
Phone: 610-566-7177
Fax: 610-566-9198
www.chemtech-usa.com

Export Consultant Service, Inc.

Coraopolis, PA
Phone: 412-264-7877
Fax: 412-264-4543
www.exportconsultantservice.com

Master Distributors:

All Safe

Wyoming, MN
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Email: info@allsafe.net
www.allsafe.net

Evergreen Midwest Inc.

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Peter Skop Industries, Inc.

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www.psi-hp.com

Ratermann Manufacturing Inc.

Livermore, CA
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