

# STANVAL

## **CAST STEEL PRESSURE SEAL VALVES**

*Gate, Globe, & Swing Check*

**Pressure Class:**  
**ASME 600# - 2500#**

**Size Range:**  
**2" - 24"**

**API 600**

**ASME B16.34**



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## ORDERING GUIDE

### Example: 6" Figure #7907-I-5-GO

7	90	7	-	I	-	5	-	GO
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1.	2.	3.	4.	5.	6.
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6" gate valve, PSB, ANSI Class 900, BW, WC6 body, 13CR full stellite trim, bevel gear operator

#### 1. MODEL

- 7 - ASME/ANSI B16.34 Pressure Seal Bonnet Gate Valve
- 8 - ASME/ANSI B16.34 Pressure Seal Bonnet Globe Valve
- 9 - ASME/ANSI B16.34 Pressure Seal Bonnet Swing Check Valve
- 12 - ASME/ANSI B16.34 Pressure Seal Bonnet Tilting Disc Check Valve
- 14 - ASME/ANSI B16.34 Pressure Seal Bonnet Piston Check Valve
- 16 - ASME/ANSI B16.34 Pressure Seal Bonnet Stop Check Valve

#### 2. RATING

- 60 - ANSI Class 600
- 90 - ANSI Class 900
- 150 - ANSI Class 1500
- 250 - ANSI Class 2500

#### 3. END CONNECTION

- 0 - RF Flanged
- 7 - Buttweld
- 9 - Ring Joint

#### 4. MATERIAL (BODY AND BONNET)

- |         |           |
|---------|-----------|
| A - WCB | K - C5    |
| B - WCC | L - C12   |
| C - LCC | M - CF8   |
| D - LCB | N - CF8M  |
| E - LC1 | O - CF3   |
| F - LC2 | P - CF3M  |
| G - LC3 | Q - CF8C  |
| H - WC1 | R - CN7M  |
| I - WC6 | S - CG8M  |
| J - WC9 | T - C12A  |
|         | X - Other |

#### 5. MATERIAL (TRIM)

- 1 - 13CR
- 2 - 304SS
- 2H - 304SS Full Stellite
- 2S - 304SS 1/2 Stellite
- 5 - 13CR Full Stellite
- 8 - 13CR 1/2 Stellite
- 9 - Monel
- 10 - 316SS
- 10H - 316SS Full Stellite
- 11 - Monel 1/2 Stellite
- 12 - 316SS 1/2 Stellite
- 13 - Alloy 20
- 14 - Alloy 20 1/2 Stellite
- 15 - 304LSS
- 15H - 304LSS Full Stellite
- 15S - 304LSS 1/2 Stellite
- 16 - 316LSS
- 16H - 316LSS Full Stellite
- 16S - 316LSS 1/2 Stellite
- 17 - 347SS
- 17H - 347SS Full Stellite
- 17S - 347SS 1/2 Stellite
- 19 - Hastelloy C
- 19H - Hastelloy C Full Stellite
- 19S - Hastelloy C 1/2 Stellite
- 20 - Inconel
- 20H - Inconel Full Stellite
- 20S - Inconel 1/2 Stellite
- O - Other

#### 6. OPERATOR

- Handwheel Operator
- GO - Bevel Gear Operator
- B - Bare Stem

#### 7. SPECIAL REQUIREMENTS

- N - NACE MR-01-75
- Y - "Y" Pattern
- Z - API 600
- S - Supply Complete Information

# STANDARD FEATURES

## DESIGN

STANVAL pressure seal valves are intended for high pressure, high temperature application in all types of fluid except where serve coking is a factor.

The design and material selections provide excellent service in nuclear steam generating stations, industrial and chemical plants and thermal power plants. Our pressure seal valves provide the most efficient flow passage and sealing features possible resulting in significant weight savings, ease of installation and maintenance features. Manufacturing and quality assurance procedures include extra controls on dimensional, nondestructive examination and testing of critical areas such as the gasket sealing, butt-weld ends, and stellite sealing surfaces.

## CONSTRUCTION

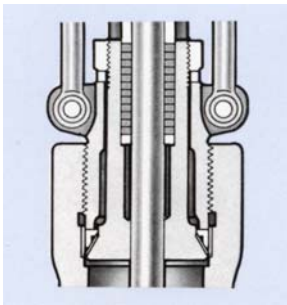
### 1. BODY AND BONNET

**BODY:** Flow areas are designed for minimum turbulence and pressure drop.

**BONNET:** Ample stuffing box and stellite stem guide and back seat shoulder are provided for accurate guiding of the stem and back seat. Cast body and bonnet quality requirements are considered in design of STANVAL valves

### BONNET TYPE

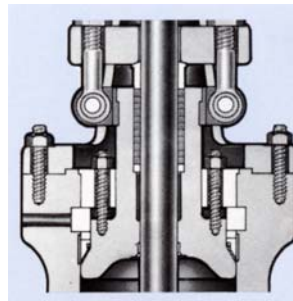
#### Type A



**GATE**  
Class 600, 900, 1500 & 2500  
Size 4" & smaller

**GLOBE**  
Class 600, 900, 1500  
Size 4" & smaller  
Class 2500  
Size 3" & smaller

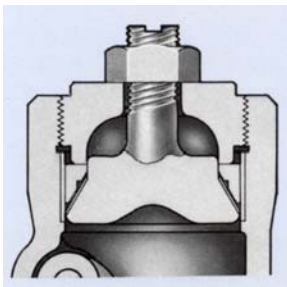
#### Type B



**GATE**  
Class 600, 900, 1500 & 2500  
Size 6" & larger

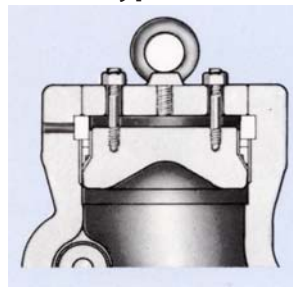
**GLOBE**  
Class 600, 900, 1500  
Size 6" & larger  
Class 2500  
Size 4" & larger

#### Type C



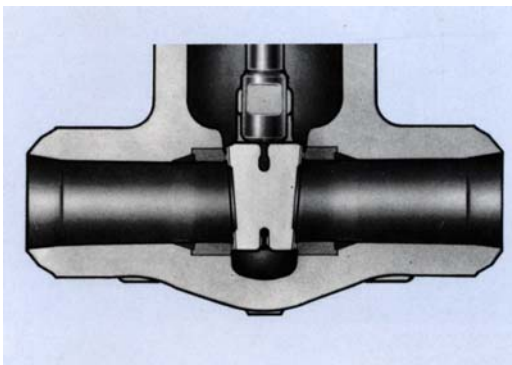
**SWING CHECK**  
Class 600, 900 & 1500  
Size 4" & smaller  
Class 2500  
Size 3" & smaller

#### Type D



**SWING CHECK**  
Class 600, 900 & 1500  
Size 6" & larger  
Class 2500  
Size 4" & larger

### 2. WEDGE (GATE VALVE)



The flexible wedge is a one piece, fully guided cast wedge with a central hub to allow the seating faces to move relative to each other thus compensating for distortion of the body seats due to thermal expansion or piping loads. Seat ring and wedge seating surface are set at a nine degree angle from vertical to minimize sliding contact of the wedge and seat ring during opening and closing.

Wedging actions help effect a tight seal in low differential pressure services. Flexible wedge construction resists wedge sticking or binding in services where the valve may be closed when hot and opened when cold. Seating surfaces are stellite to provide high cycle capability

## STANDARD FEATURES

### 3. DISC (GLOBE & SWING CHECK VALVE)

Globe and check type discs are accurately fitted and guided to minimize vibration. Seating surfaces are stellite.

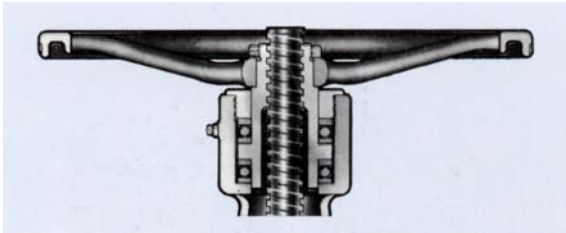
### 4. HAMMER BLOW TYPE HAND WHEEL AND BALL BEARING TYPE YOKE SLEEVE

#### HAMMER BLOW TYPE HAND WHEEL

All globe valves are equipped with hammer blow type hand wheel. Two integrally cast lugs on the upside of hand wheel simultaneously strike a steel crossbar which is connected directly to valve stem on smaller sizes or to the yoke sleeve on large sizes.

#### BEARING INSERT TYPE YOKE SLEEVE

Large, high pressure valves can require a tremendous amount of torque to open and close the valve. Use of ball bearings in the yoke sleeve reduce the operating torque of these difficult-to-operate valves by as much as 50 percent.



Class	GATE	GLOBE
600	Size 6" & Larger	Size 6" & Larger
900	Size 2", 2½" & 6" Larger	
1500	Size 2" & Larger	Size 3" & Larger
2500		

### 5. STANDARD PRESSURE SEAL DESIGN

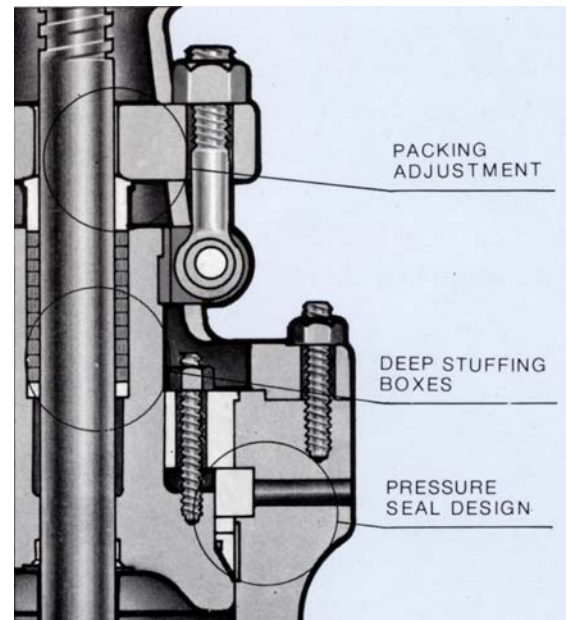
The segmental thrust ring absorbs all the thrust applied by internal pressure. A hardened stainless steel protective ring prevents deformation of the top surface of the soft metallic gasket. The gasket can be removed freely without the sealing surface of the body damaging.

### 6. PACKING ADJUSTMENT

All gate and globe valves are provided with a two piece packing gland to minimize the possibility of scoring the stem if the gland is tightened unevenly. Eye bolt remains fastened to the bonnet. They swing out of the way to simplify packing replacement and are oriented so they can be adjusted from one side of the valve.

### 7. DEEP STUFFING BOXES.

Deep stuffing boxes are standard on gate and globe valves. The design provides extra packing for a more reliable stem seal, or sufficient depth for packing with an optional lantern ring in the middle. When equipped with a lantern ring, a tapped and plugged hole is provided. When specified, it can be fitted with a ball grease injector.



## MOTOR OPERATED & BEVEL GEAR OPERATED VALVES

### MOTOR OPERATED VALVES

All STANVAL valves can be equipped with electric, pneumatic motor operators. Customers are asked, when ordering, to specify the following requirements that may enable us to supply the correct size of operator.

1. Medium
2. Working temperature
3. Working pressure
4. Differential pressure across the valve
5. Nominal diameter of the valve
6. Type of actuator
7. Voltage and frequency, or air pressure
8. Closing time
9. The need for position indicators or position transmitter etc.
10. Number and type of any auxiliary contact required.
11. Special classes of insulation
12. Waterproof or explosion proof



### BEVEL GEAR OPERATED VALVES

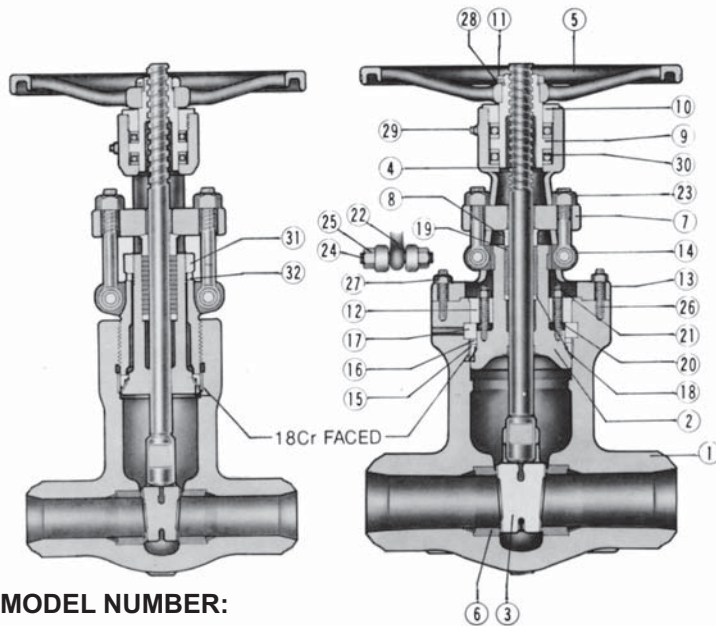
STANVAL bevel gear, valve operators are directly mounted to the gate and globe valves which receive the thrust loads. This results in easy manual opening and closing of the valves. The unit is of compact design with integral thrust bearings.

### CHARACTERISTICS

1. The unit is of fully enclosed construction, filled with high pressure grease and ready for immediate use.
2. The unit results in easy valve operation and has a hammer blow device.
3. The stem nut is driven by involute splines. The stem nut may be easily removed from the unit for machining the threads.
4. The stem cover and stem plug are all optional equipment.



**GATE VALVES – CLASS 600, 900, 1500, and 2500**



**MODEL NUMBER:**

- Class 600 ..... 7607
- Class 900 ..... 7907
- Class 1500 ..... 71507
- Class 2500 ..... 72507

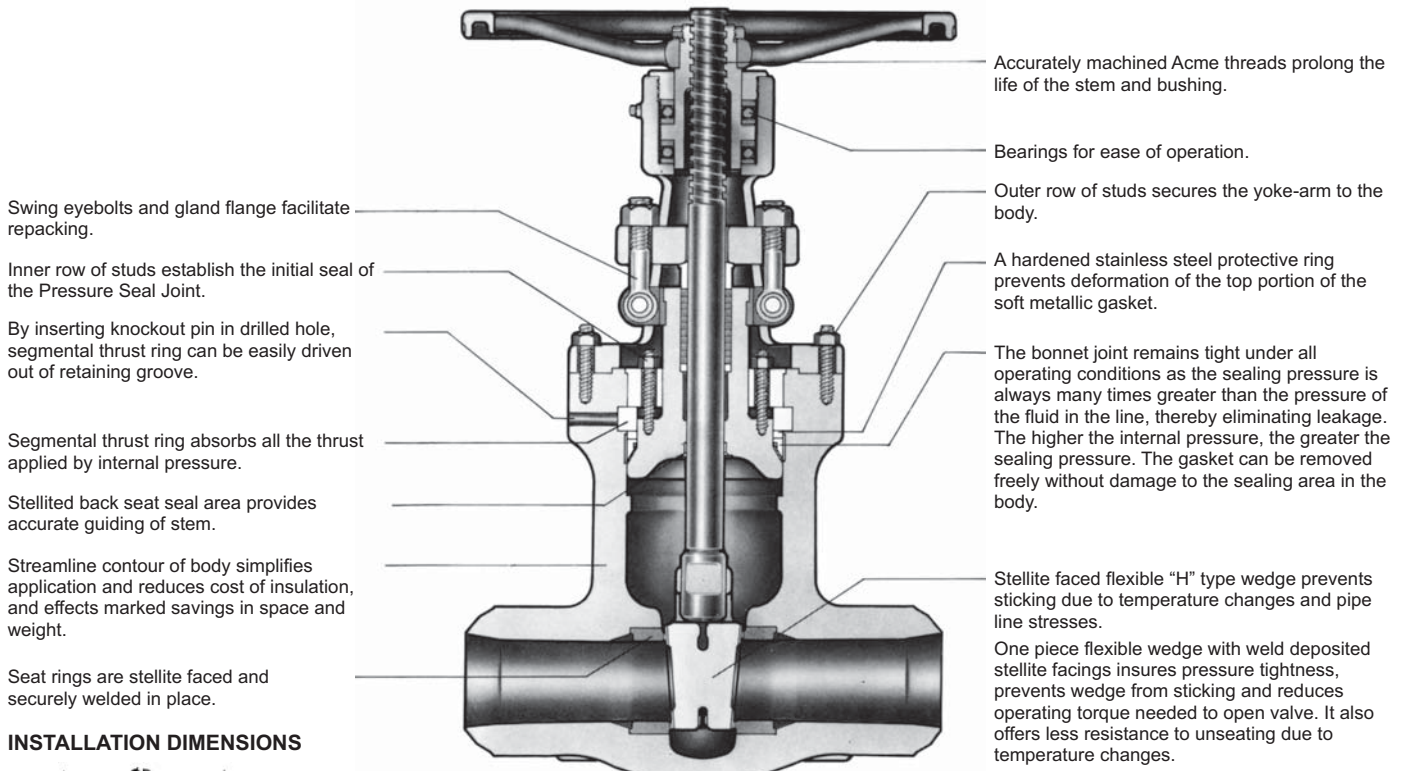
**SERVICE RECOMMENDATION**

1. Gate valves are normally used for on-off service. They are not recommended for throttling service.
2. Gate valves are normally installed in horizontal pipe runs with the valve stem vertically up. They can also be installed in vertical or horizontal pipe runs with the valve stem other than vertical, but special construction may be required depending on valve size, service, conditions, and material. When purchasing valves for other than the normal installation, valve orientation should be specified.
3. After closing a gate valve with sufficient force to develop shutoff, the stem should be backed off slightly (1/8 to 1/4 turn) to relieve stem load. This will enable the stem to expand slightly-without bending or damaging the valve and will not affect valve shutoff.

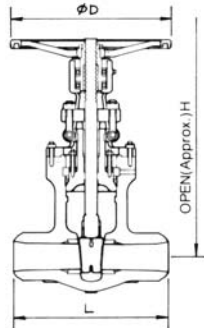
**STANDARD PARTS AND MATERIALS**

No.	PART NAME	CARBON STEEL	1 1/4 Chromium 1/2 Molybdenum	2 1/2 Chromium 1 Molybdenum	5 Chromium 1/2 Molybdenum	316 STAINLESS STEEL
1	BODY	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
2	BONNET	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
3	WEDGE	A216WCB + STL No.6	A217WC6 + STL No.6	A217WC9 + STL No.6	A217C5 + STL No.6	A351CF8M + STL No.6
4	STEM	A479-410	A479-410	A479-410	A479-410	A479-316
5	HAND WHEEL	A197 or WCB	A197 or WCB	A197 or WCB	A197 or WCB	A197 or WCB
6	BODY SEAT RING	C/S1020 + STL No.6	A182F11 + STL No.6	A182F22 + STL No.6	A182F5a + STL No.6	A182F316 + STL No.6
7	GLAND FLANGE	A283-D	A283-D	A283-D	A283-D	A283-D
8	PACKING GLAND	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	A479-316
9	YOKE SLEEVE	A439-D2C	A439-D2C	A439-D2C	A439-D2C	A439-D2C
10	YOKE CAP	C/S1020	C/S1020	C/S1020	C/S1020	C/S 1020 + Cr Plate
11	HAND WHEEL NUT	C/S1020	C/S1020	C/S1020	C/S1020	C/S 1020 + Cr Plate
12	BONNET CLAMP	C/S 1045	C/S1045	C/S1045	C/S1045	A351CF8M
13	YOKE	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
14	HINGE CLAMP	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
15	GASKET	SOFT STEEL	SOFT STEEL	SOFT STEEL	SOFT STEEL	316S.S
16	ADAPTER RING	A479-410	A479-410	A479-410	A479-410	A479-316
17	RETAINER	A479-410	A479-410	A479-410	A479-410	A479-316
18	STUFFING RING	A479-410	A479-410	A479-410	A479-410	A479-316
19	PACKING	Graphite	Graphite	Graphite	Graphite	Graphite
20	BONNET BOLT	A193-B7	A193-B16	A193-B16	A193-B16	A193-B8
21	NUT	A194-2H	A194Gr4	A194Gr4	A194Gr4	A194Gr8
22	GLAND BOLT	A307 B	A193-B7	A193-B7	A193-B7	A193-B8
23	NUT	A307B	A194-2H	A194-2H	A194-2H	A194-8
24	GLAND CLAMP BOLT	A307B	A193-B7	A193-B7	A193-B7	A193-B8
25	NUT	A307B	A194-2H	A194-2H	A194-2H	A194-8
26	YOKE BOLT	A193-B7	A193-B7	A193-B7	A193-B7	A193-B8
27	NUT	A194-2H	A194-2H	A194-2H	A194-2H	A194-8
28	SET SCREW	C/S1020	C/S1020	C/S1020	C/S1020	C/S1020
29	GREASE NIPPLE	STEEL	STEEL	STEEL	STEEL	STEEL
30	BEARING	STEEL	STEEL	STEEL	STEEL	STEEL
31	BONNET CLAMP	C/S 1045	C/S1045	C/S1045	C/S1045	A351CF8M
32	WASHER	A479-410	A479-410	A479-410	A479-410	A479-304

# GATE VALVES – CONSTRUCTION SPECIFICATION



**INSTALLATION DIMENSIONS**



**DESIGN DATA FEATURE**

1. Complies with requirement of applicable standard: ASME B 16.25, 16.34, MSS-SP-25, Optional API 600.
2. OS & Y construction, rising stem, non-rising handwheel.
3. Sealing surface of body seat ring and wedge in all sizes are hard face with stellite.
4. Flexible wedge with, TEE-HEAD STEM-TO-WEDGE connection.
5. Buttwelding end details of STANVAL std. will be prepared in accordance with ASME B 16.25.

**ACCESSORIES**

Accessories such as gear operators, actuators, bypasses, locking devices, and chainwheels are available to meet the customers requirements.

**CLASS 600 DIMENSIONS (mm/inch)**

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	254 10	304.8 12	457.2 18	585.2 23	711.2 28	812.8 32	889 35	990.6 39	1092.2 43	1193.8 47	1397 55
D	200 7.87	315 12.40	355 13.98	450 17.72	500 19.69	630 24.80	710 27.95	800 31.50	900 35.43	900 35.43	1092 43.00	1092 43.00
H	507 19.96	583 22.95	710 28	906 35.67	1161 45.71	1348 53.07	1528 60.16	1685 66.34	2006 78.98	2192 86.30	2480 97.63	2869 112.95

**CLASS 900 DIMENSIONS (mm/inch)**

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	304.8 12	355.6 14	508 20	660.4 26	787.4 31	914.4 36	990.6 39	1092.2 43	1219.4 48	1320.8 52	24
D	315 12.40	355 13.98	355 13.98	500 19.69	630 24.80	710 27.95	800 31.50	900 35.43	900 35.43	1092 43.00	1092 43.00	
H	586 23.07	628 24.72	740 29.13	946 37.24	1185 46.65	1455 57.28	1655 65.16	1775 69.88	2135 84.05	2318 91.26	2577 101.46	

**CLASS 1500 DIMENSIONS (mm/inch)**

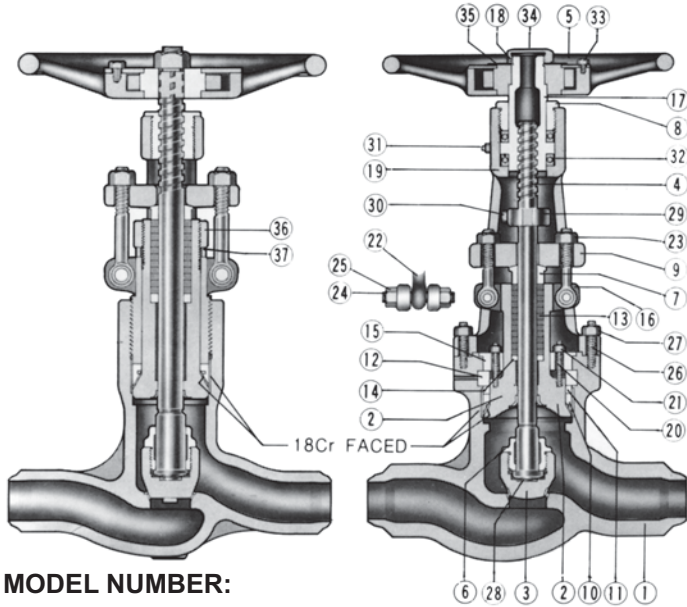
SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	304.8 12	406 16	559 22	711.2 28	863.6 34	990.6 39	1066.8 42	1193.8 47	1346.2 53	1473.2 58	
D	315 12.40	355 13.98	400 15.75	630 24.80	710 27.95	710 27.95	800 31.50	900 35.43	1092 43.00	1092 43.00	1296 51.02	
H	586 23.07	712 28.03	856 33.70	1061 41.77	1138.5 44.82	1397 55	1518 59.76	1640 64.57	2089 82.24	2247 88.46	2624 103.30	

**CLASS 2500 DIMENSIONS (mm/inch)**

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	279.4 11	368.3 14.5	457.2 18	610 24	762 30	914.2 36	1041.4 41	1118 44	1245 49	1397 55		
D	355 13.97	400 15.75	450 17.72	630 24.80	710 27.95	710 27.95	800 31.50	900 35.43	1092 43.00	1296 51.02		
H	674 26.53	692.5 27.26	805 31.69	1005 39.56	1341 52.79	1554 61.18	1689 66.49	1822 71.73	2298 90.47	2497 98.31		



**GLOBE VALVES – CLASS 600, 900, 1500, and 2500**



**MODEL NUMBER:**

- Class 600 ..... 8607
- Class 900 ..... 8907
- Class 1500 ..... 81507
- Class 2500 ..... 82507

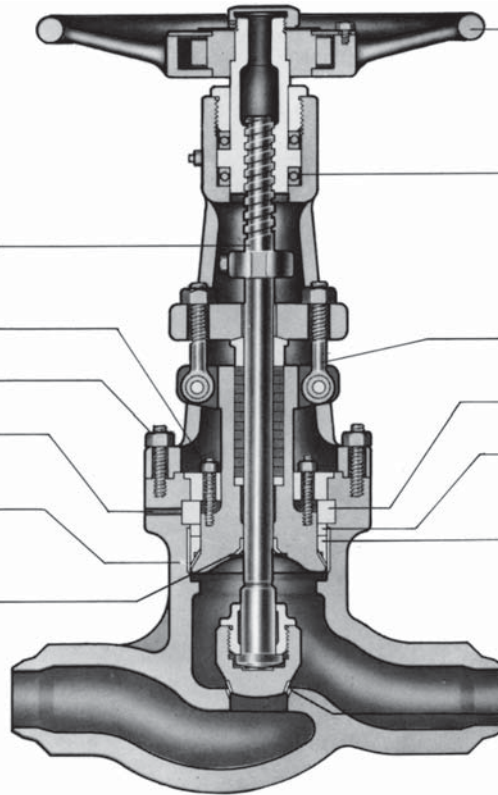
**SERVICE RECOMMENDATION**

1. Globe valves are normally installed with flow and pressure under the disc. Always check with the factory before installing valves with flow in the other direction.  
Under certain service conditions or when valves are equipped with cylinders or electric motor actuators, there may be a cost advantage in designing and installing the valves with flow over the disc. If actuators are sized for these conditions, care must be taken to assure valves are installed correctly.
2. Globe valves are suitable for most throttling applications; however, they should not be used for prolonged throttling at less than 10% open. This can cause excessive vibration, noise and damage to disc and seats.  
Use of smaller valves with lower flow capacity may avoid damage. Continuous severe throttling applications may require a control valve.

**STANDARD PARTS AND MATERIALS**

No.	PART NAME	CARBON STEEL	1 1/4Chromium 1/2 Molybdenum	2 1/2Chromium 1 Molybdenum	5Chromium 1/2Molybdenum	316 STAINLESS STEEL
1	BODY	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
2	BONNET	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
3	DISC	A216WCB+STL No.6	A217WC6+STL No.6	A217WC9+STL No.6	A217C5+STL No.6	A351CF8M+STL No.6
4	STEM	A479-410	A479-410	A479-410	A479-410	A479-316
5	HAND WHEEL	A216WCB	A216WCB	A216WCB	A216WCB	A216WCB
6	LOCK NUT	A479-410	A479-410	A479-410	A479-410	A479-316
7	PACKING GLAND	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	C/S 1020 + Cr Plate	A479-316
8	YOKE CAP	C/S1020	C/S1020	C/S1020	C/S1020	C/S 1020 + Cr Plate
9	GLAND FLANGE	A283-D	A283-D	A283-D	A283-D	A351-CF8
10	GASKET	SOFT STEEL	SOFT STEEL	SOFT STEEL	SOFT STEEL	316S S
11	ADAPTER RING	A479-410	A479-410	A479-410	A479-410	A479-316
12	RETAINER	A479-410	A479-410	A479-410	A479-410	A479-316
13	PACKING	Graphite	Graphite	Graphite	Graphite	Graphite
14	STUFFING BOX RING	A479-410	A479-410	A479-410	A479-410	A479-410
15	BONNET CLAMP	C/S1045	C/S1045	C/S1045	C/S1045	A351CF8M
16	HINGE CLAMP	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
17	YOKE SLEEVE	A439-D2C	A439-D2C	A439-D2C	A439-D2C	A439-D2C
18	HAND WHEEL NUT	C/S1020	C/S1020	C/S1020	C/S1020	C/S1020 +CrPlate
19	YOKE	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
20	BONNET BOLT	A193-B7	A193-B16	A193-B16	A193-B16	A193-B8
21	NUT	A194-2H	A194Gr4	A194Gr4	A194Gr4	A194Gr8
22	GLAND BOLT	A307B	A193-B7	A193-B7	A193-B7	A193-B8
23	NUT	A307B	A194-2H	A194-2H	A194-2H	A194-8
24	GLAND CLAMP BOLT	A307B	A193-B7	A193-B7	A193-B7	A193-B8
25	NUT	A307B	A194-2H	A194-2H	A194-2H	A194-8
26	YOKE BOLT	A193-B7	A193-B7	A193-B7	A193-B7	A193-B8
27	NUT	A194-2H	A194-2H	A194-2H	A194-2H	A194-8
28	DISC THRUST PAD	A479-410	A479-410	A479-410	A479-410	A479-316
29	STOPPER	A216WCB	A217WC6	A217WC9	A217C5	A351-CF8
30	STOPPER BOLT	A307B	A307B	A307B	A307B	A193-B8
31	NIPPLE	STEEL	STEEL	STEEL	STEEL	STEEL
32	BEARING	STEEL	STEEL	STEEL	STEEL	STEEL
33	BOLT	A307B	A307B	A307B	A307B	A307B
34	SET SCREW	C/S1020	C/S 1020	C/S1020	C/S1020	C/S1020
35	NAME PLATE	S.S Plate	S.S Plate	S.S plate	S.S Plate	S.S Plate
36	BONNET CLAMP	C/S 1045	C/S 1045	C/S 1045	C/S 1045	A479-304
37	WASHER	A479-410	A479-410	A479-410	A479-410	A479-304

# GLOBE VALVES – CONSTRUCTION SPECIFICATION



Accurately machined Acme threads prolong the life of the stem and bushing.

Inner row of studs establish the initial seal of the Pressure Seal Joint.

Outer row of studs secures the yoke-arm to the body.

By inserting knockout pin in drilled hole, segmental thrust ring can be easily driven out of retaining groove.

Streamline contour of body simplifies application and reduces cost of insulation, and effects marked savings in space and weight.

Stellited back seat seal area provides accurate guiding of stem.

All globe valves are equipped with hammer blow type hand wheels. Two integrally cast lugs on the upside of the hand wheel simultaneously strike a steel crossbar.

Bearings for ease of operation.

Swing eyebolts and gland flange facilitate repacking.

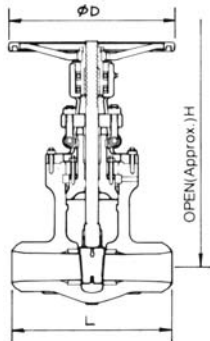
Segmental thrust ring absorbs all the thrust applied by internal pressure.

A hardened stainless steel protective ring prevents deformation of the top portion of the soft metallic gasket.

The bonnet joint remains tight under all operating conditions as the sealing pressure is always many times greater than the pressure of the fluid in the line, thereby eliminating leakage. The higher the internal pressure, the greater the sealing pressure. The gasket can be removed freely without damage to the sealing area in the body.

Integral body seatface are stellite.

## INSTALLATION DIMENSIONS



## DESIGN DATA FEATURE

1. Comply with requirement of applicable standard: ASME B 16.25, 16.34, MSS-SP-25, Optional API 600.
2. OS & Y construction, rising stem, non-rising hammerblow handwheel.
3. Buttwelding end details of STANVAL std. will be prepared in accordance with ASME B 16.25.

## ACCESSORIES

Accessories such as gear operators, actuators, bypasses, locking devices, and chainwheels are available to meet the customers requirements.

## CLASS 600 DIMENSIONS (mm/inch)

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	254 10	304.8 12	457.2 18	585.2 23	711.2 28	812.8 32	889 35	990.6 39	1092.2 43	1193.8 47	1397 55
D	200 7.87	315 12.40	355 13.98	450 17.72	500 19.69	630 24.80	710 27.95	800 31.50	900 35.43	900 35.43	1092 43.00	1092 43.00
H	507 19.96	583 22.95	710 28	906 35.67	1161 45.71	1348 53.07	1528 60.16	1685 66.34	2006 78.98	2192 86.30	2480 97.63	2869 112.95

## CLASS 900 DIMENSIONS (mm/inch)

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	304.8 12	355.6 14	508 20	660.4 26	787.4 31	914.4 36	990.6 39	1092.2 43	1219.4 48	1320.8 52	24
D	315 12.40	355 13.98	355 13.98	500 19.69	630 24.80	710 27.95	800 31.50	900 35.43	900 35.43	1092 43.00	1092 43.00	
H	586 23.07	628 24.72	740 29.13	946 37.24	1185 46.65	1455 57.28	1655 65.16	1775 69.88	2135 84.05	2318 91.26	2577 101.46	

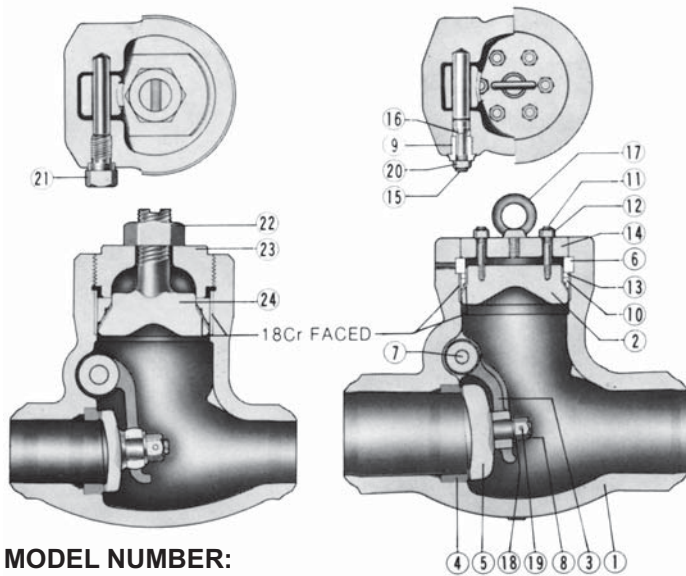
## CLASS 1500 DIMENSIONS (mm/inch)

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	215.9 8.5	304.8 12	406 16	559 22	711.2 28	863.6 34	990.6 39	1066.8 42	1193.8 47	1346.2 53	1473.2 58	24
D	315 12.40	355 13.98	400 15.75	630 24.80	710 27.95	710 27.95	800 31.50	900 35.43	1092 43.00	1092 43.00	1296 51.02	
H	586 23.07	712 28.03	856 33.70	1061 41.77	1138.5 44.82	1397 55	1518 59.76	1640 64.57	2089 82.24	2247 88.46	2624 103.30	

## CLASS 2500 DIMENSIONS (mm/inch)

SIZE	50	80	100	150	200	250	300	350	400	450	500	600
L	279.4 11	368.3 14.5	457.2 18	610 24	762 30	914.2 36	1041.4 41	1118 44	1245 49	1397 55		
D	355 13.97	400 15.75	450 17.72	630 24.80	710 27.95	710 27.95	800 31.50	900 35.43	1092 43.00	1296 51.02		
H	674 26.53	692.5 27.26	805 31.69	1005 39.56	1341 52.79	1554 61.18	1689 66.49	1822 71.73	2298 90.47	2497 98.31		

**CHECK VALVES – CLASS 600, 900, 1500, and 2500**



**MODEL NUMBER:**

- Class 600 ..... 9607
- Class 900 ..... 9907
- Class 1500 ..... 91507
- Class 2500 ..... 92507

**SERVICE RECOMMENDATION**

1. Swing Check valves shall operate in a manner which avoids:
  - a) The formation of an excessively high surge pressure as a result of the valve closing.
  - b) Rapid fluctuating movements of the valve closure member.

To avoid the formation of an excessively high surge pressure as a result of the valve closing, the valve must close fast enough to prevent the development of a significant reverse flow velocity which on sudden shut-off is the source of the surge pressure. Thus, the closing speed of the valve should closely match the speed by which the forward flow retards.

Rapid fluctuating movements of the closure member must be avoided to prevent excessive wear of the moving valve parts which could result in early failure of the valve.

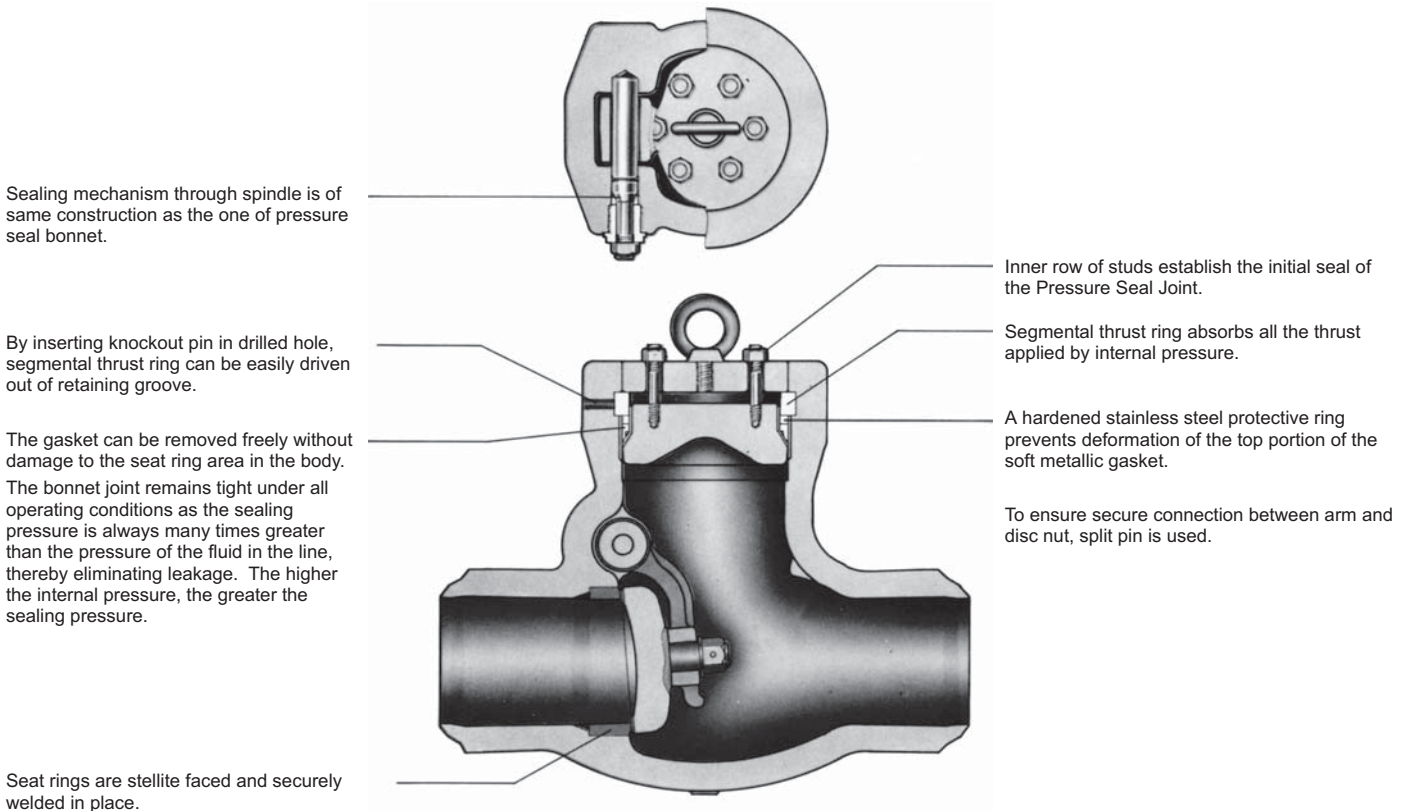
Such movements can be avoided by sizing the valve for a flow velocity which forces the closure member firmly against a stop.

2. Swing check valves may also be mounted in the vertical position, provided the disc is prevented from reaching the stalling position. However, the closing moment of the disc due to its weight is very small in the fully open position, so the valve will tend to close late. To overcome slow response to retarding flow, the disc may be provided with a lever-mounted weight or spring loaded.

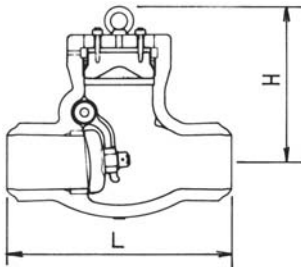
**STANDARD PARTS AND MATERIALS**

No.	PART NAME	CORBON STEEL	1 1/4Chromium- 1/2Molybdenum	2 1/2Chromium- 1Molybdenum	5Chromium 1/2Molybdenum	316 STAINLESS STEEL
1	BODY	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
2	COVER	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
3	ARM	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
4	BODY SEAT RING	C/S1020+STLNo.6	A182F11+STLNo.6	A182-F22+STLNo.6	A182F5a+STLNo.6	A240-316+STL No.6
5	DISC	A216WCB+STLNo.6	A217WC6+STL No.6	A217WC9+STL No.6	A217WC5+STLNo.6	A351CF8M+STL No.6
6	RETAINER	A479-410	A479-410	A479-410	A479-410	A479-316
7	PIN	A479-410	A479-410	A479-410	A479-410	A479-316
8	DISC NUT	A194Gr8	A194Gr8	A194Gr8	A194Gr8	A194Gr8M
9	PLUG	A307B	A479-304	A479-304	A479-304	A479-316
10	GASKET	SOFT STEEL	SOFT STEEL	SOFT STEEL	SOFT STEEL	316 S S
11	COVER CLAMP BOLT	A193 B7	A193-B16	A193 B16	A193-B16	A193-B8
12	NUT	A194-2H	A194-Gr4	A194Gr4	A194Gr4	A194-Gr8
13	ADAPTER RING	A479-410	A479-410	A479-410	A479-410	A479-316
14	COVER CLAMP	C/S1045	C/S 1045	C/S1045	C/S1045	A351CF8
15	SEALING BOLT	A479-410	A479-410	A479-410	A479-410	A479-316
16	GASKET RING	SOFT STEEL	SOFT STEEL	SOFT STEEL	SOFT STEEL	SOFT STEEL
17	EYE BOLT	A105	A105	A105	A105	A105
18	WASHER	A479-410	A479-410	A479-410	A479-410	A479-316
19	SPLIT PIN	A580-304	A580-304	A580-304	A580-304	A580-304
20	SEALING NUT	A194 -2H	A194-2H	A194-2H	A194-2H	A194-Gr8
21	PLUG BOLT	A307B	A479-304	A479-304	A479-304	A479-316
22	COVER NUT	A194-2H	A194-2H	A194-2H	A194-2H	A479-304
23	COVER	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M
24	BONNET	A216WCB	A217WC6	A217WC9	A217C5	A351CF8M

# CHECK VALVES – CONSTRUCTION SPECIFICATION



**INSTALLATION DIMENSIONS**



**DESIGN DATA FEATURE**

1. Comply with requirement of applicable standard: ASME B 16.25, 16.34, MSS-SP-25, Optional API 600.
2. Buttwelding end details of STANVAL std. will be prepared in accordance with ASME B 16.25.

**ACCESSORIES/OPTIONAL DESIGNS**

Counterweight features are available as an accessory. Tilting disc or hydrofoil designs are also available to meet the customers requirements. Drains and bypasses are available as specified by the customer.

**CLASS 600 DIMENSIONS (mm/inch)**

SIZE	50	2	80	3	100	4	150	6	200	8	250	10	300	12	350	14	400	16	450	18	500	20	600	24
L	177.8	7	254	10	304.8	12	457	18	584	23	711.2	28	813	32	889	35	990.6	39	1092.2	43	1193.8	47	1397	55
H	191	7.52	248	9.76	308	12.13	365	14.37	410	16.14	465	18.31	510	20.08	561	22.09	618	24.33	673	26.50	730	28.74	785	30.91

**CLASS 900 DIMENSIONS (mm/inch)**

SIZE	50	2	80	3	100	4	150	6	200	8	250	10	300	12	350	14	400	16	450	18	500	20	600	24
L	215.9	8½	304.8	12	355	14	508	20	660.4	26	787	31	914.4	36	990.6	39	1092.2	43	1219.2	48	1320.8	52	1549.4	61
H	243	9.57	242	9.53	340	13.39	400	15.75	460	18.11	535	21.06	610	24.02	685	26.97	754	29.69	829	32.64	898	35.35	973	38.31

**CLASS 1500 DIMENSIONS (mm/inch)**

SIZE	50	2	80	3	100	4	150	6	200	8	250	10	300	12	350	14	400	16	450	18	500	20	600	24
L	215.9	8½	304.8	12	406.4	16	559	22	711.2	28	864	34	990.6	39	1066.8	42	1193.8	47	1536.7	60½	1663.7	65½	1943.1	76½
H	243	9.57	300	11.81	350	13.78	404	15.91	490	19.29	575	22.64	682	26.85	752	29.61	802	31.57	877	34.53	937	36.89	1032	40.63

**CLASS 2500 DIMENSIONS (mm/inch)**

SIZE	50	2	80	3	100	4	150	6	200	8	250	10	300	12	350	14	400	16	450	18	500	20	600	24
L	279.4	11	368.3	14½	457	18	610	24	762	30	914.4	36	1041.4	41										
H	260	10.24	350	13.78	405	15.94	450	17.72	522	20.55	600	23.62	684	26.93										

# PRESSURE-TEMPERATURE RATINGS – Steel, Nickel & Other Alloys

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## COLD WORKING PRESSURE, psig

Class	Temp °F	A216	A217	A217	A217	A217	A351	A351	A351	A351	A352	A352	A352
		WCB	C5	C12	WC6	WC9	CF8	CF8M	CF3	CF3M	CN7M	LCB	LC3
		A105			A182	A182	A182	A182					A350
					F11	F22	F304	F316					LF3
<b>600</b>	-20 to 100	1480	1500	1000	1500	1500	1440	1440	1440	1440	1200	1390	1500
	200	1350	1500	1000	1425	1430	1200	1240	1200	1240	1115	1315	1500
	300	1315	1455	970	1345	1355	1055	1120	1055	1120	1045	1275	1455
	400	1270	1410	940	1315	1295	940	1030	940	1030		1235	1410
	500	1200	1330	885	1285	1280	875	955	875	955		1165	1330
	600	1095	1210	805	1210	1210	830	905	830	905		1065	1210
	650	1075	1175	785	1175	1175	815	890	815	890		1045	1175
	700	1065	1135	755	1135	1135	805	865	805	865			1440
	750	1010	1065	710	1065	1065	795	845	795	845			
	800	825	995	675	1015	1015	790	830	790	830			
	850	535 <sup>A</sup>	880	650	975	975	780	810		810			
	900	345 <sup>A</sup>	705	600	900	900	770	790					
	950	205 <sup>A</sup>	520	495	755	755	750	775					
	1000	105 <sup>A</sup>	385	390	445	535	645	725					
	1050		280	250	275	400	620	720					
	1100		205	150	190	225	515	645					
	1150		140	100			390	550					
	1200		90	70			310	410					
	1250						220	365					
	1300						165	275					
	1350						125	205					
1400						95	150						
1450						70	115						
1500						50	85						
<b>900</b>	-20 to 100	2220	2250	2250	2250	2250	2160	2160	2160	2160	1800	2085	2250
	200	2025	2250	2250	2135	2150	1800	1860	1800	1860	1670	1970	2250
	300	1970	2185	2185	2020	2030	1410	1540	1410	1540	1570	1915	2185
	400	1900	2115	2115	1975	1945	1410	1540	1410	1540		1850	2115
	500	1795	1995	1995	1925	1920	1310	1435	1310	1435		1745	1995
	600	1640	1815	1815	1815	1815	1245	1355	1245	1355		1600	1815
	650	1610	1765	1765	1765	1765	1225	1330	1225	1330		1570	1765
	700	1600	1705	1705	1705	1705	1210	1295	1210	1295			
	750	1510	1595	1595	1595	1595	1195	1270	1195	1270			
	800	1235	1490	1525	1525	1525	1180	1245	1180	1245			
	850	805 <sup>A</sup>	1315	1460	1460	1460	1165	1215		1215			
	900	515 <sup>A</sup>	1060	1350	1350	1350	1150	1180					
	950	310 <sup>A</sup>	780	1110	1130	1130	1125	1160					
	1000	155 <sup>A</sup>	575	875	670	805	965	1090					
	1050		420	565	410	595	925	1080					
	1100		310	340	290	340	770	965					
	1150		205	225			585	825					
	1200		135	155			465	620					
	1250						330	545					
	1300						245	410					
	1350						185	310					
1400						145	225						
1450						105	175						
1500						70	125						

A – Permissible, but not recommended for prolonged usage above about 800° F.  
 B – For welding end valves only, flanged end ratings terminate at 1000° F

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# PRESSURE-TEMPERATURE RATINGS – Steel, Nickel & Other Alloys

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## COLD WORKING PRESSURE, psig

Class	Temp °F	A216 WCB	A217 C5	A217 C12	A217 WC6	A217 WC9	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M	A352 CN7M	A352 LCB	A352 LC3
		A105			A182 F11	A182 F22	A182 F304	A182 F316					A350 LF3
<b>1500</b>	-20 to 100	3705	3750	3750	3750	3750	3600	3600	3600	3600	3000	3470	3750
	200	3375	3750	3750	3560	3580	3000	3095	3000	3095	2785	3280	3750
	300	3280	3640	3640	3365	3385	2640	2795	2640	2795	2615	3190	3640
	400	3170	3530	3530	3290	3240	2350	2570	2350	2570		3085	3530
	500	2995	3325	3325	3210	3200	2185	2390	2185	2390		2910	3325
	600	2735	3025	3025	3025	3025	2075	2255	2075	2255		2665	3025
	650	2685	2940	2940	2940	2940	2040	2220	2040	2220		2615	2940
	700	2665	2840	2840	2840	2840	2015	2160	2015	2160			
	750	2520	2660	2660	2660	2660	1990	2110	1990	2110			
	800	2060	2485	2540	2540	2540	1970	2075	1970	2075			
	850	1340 <sup>A</sup>	2195	2435	2435	2435	1945	2030		2030			
	900	860 <sup>A</sup>	1765	2245	2245	2245	1920	1970					
	950	515 <sup>A</sup>	1305	1850	1885	1885	1870	1930					
	1000	260 <sup>A</sup>	960	1460	1115	1340	1610	1820					
	1050		705	945	685	995	1545	1800					
	1100		515	565	480	565	1285	1610					
	1150		345	380			980	1370					
	1200		225	260			770	1030					
	1250						550	910					
	1300						410	685					
1350						310	515						
1400						240	380						
1450						170	290						
1500						120	205						
<b>2500</b>	-20 to 100	6170	6250	6250	6250	6250	6000	6000	6000	6000	5000	5785	6250
	200	5625	6250	6250	5930	5965	5000	5160	5000	5160	4640	5470	6250
	300	5470	6070	6070	5605	5640	4400	4660	4400	4660	4360	5315	6070
	400	5280	5880	5880	5485	5400	3920	4280	3920	4280		5145	5880
	500	4990	5540	5540	5350	5330	3640	3980	3640	3980		4850	5540
	600	4560	5040	5040	5040	5040	3460	3760	3460	3760		4440	5040
	650	4475	4905	4905	4905	4905	3400	3700	3400	3700		4355	4905
	700	4440	4730	4730	4730	4730	3360	3600	3360	3600			
	750	4200	4430	4430	4430	4430	3320	3520	3320	3520			
	800	3430	4145	4230	4230	4320	3280	3460	3280	3460			
	850	2230 <sup>A</sup>	3660	4060	4060	4060	3240	3320		3320			
	900	1430 <sup>A</sup>	2945	3745	3745	3745	3200	3280					
	950	860 <sup>A</sup>	2170	3085	3145	3145	3120	3220					
	1000	430 <sup>A</sup>	1660	2430	1860	2230	2685	3030					
	1050		1170	1570	1145	1660	2570	3000					
	1100		860	945	800	945	2145	2685					
	1150		570	630			1630	2285					
	1200		370	430			1285	1715					
	1250						915	1515					
	1300						685	1145					
1350						1515	860						
1400						400	630						
1450						285	485						
1500						200	345						

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