Newmans® VALVE

Newco®

Pressure Seal Valves
Technical Data

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HOW TO ORDER

The figure number shown below identifies specific valve configuration details of Newmans NEWCO valves such as valve type, pressure class, end connections, body/bonnet and trim materials, and special features.

Please specify end connections, body materials and trims not listed below.

When placing an order, please refer to the respective product section of the catalog for size availability. A detailed description must be included with any special orders.

NEWCO CAST FIGURE NUMBERING SYSTEM

REV. 17 8-8-24

EXAMPLE FIGURE: 1 1 F – CB 2 – GO – **

TYPE
1 = GATE
2 = GLOBE/GLOBE STOP
3 = SWING CHECK
4 = PISTON CHECK
5 = BALL
7 = ANGLE/ANGLE STOP
8 = DUAL PLATE CHECK
9 = TRIPLE OFFSET

PRESSURE CLASS
1 = 150
2 = 125
3 = 300
6 = 600
9 = 900
15 = 1500
25 = 2500
45 = 4500

END CONNECTIONS
D = FLANGED SERIES "B"
F = FLANGED SERIES "A" - STANDARD STYLE
J = RTJ
L = FLAT FACED
W = BUTT WELD
SPL = SPECIAL
P = LUG
Z = WAFER

TRIM MATERIAL	API #
1 = CR13	1, 4, 8A
2 = CR13/HF	8
3 = CR13/FHF	5
4 = 316	10
4/2 = 316/HF	12
4/3 = 316/FHF	16
5 = MONEL	9
5/2 = MONEL/HF	11
6 = A20	13
7 = BRONZE	
A7 = ALUMINUM BRONZE	
8 = IRON	
9 = SPECIAL (CUSTOMER TO SPECIFY)	

BODY/BONNET MATERIALS
A20= ASTM A351-CN7M (ALLOY 20)
CB = ASTM A216-WCB
CC = ASTM A216-WCC
C5 = ASTM A217-C5
C6 = ASTM A217-WC6
C9 = ASTM A217-WC9
C12 = ASTM A217-C12
12A = ASTM A217-C12A
DI = ASTM A395
IB = ASTM A126-CLB
LCC = ASTM A352-LCC
C8M= ASTM A351-CF8M (316)
C3M= ASTM A351-CF3M (316L)
CF8= ASTM A351-CF8 (304)
CF3= ASTM A351-CF3 (304L)
CG8= ASTM A351-CG8M (317)
CG3= ASTM A351-CG3M (317L)
C8C= ASTM A351-CF8C (347)
CD3= ASTM A890-CD3M (DSS)
CE3= ASTM A890-CE3M (SDSS)
CM1= ASTM A494-M35- (MONEL)
CM2= ASTM A494-M35- (MONEL)
NAB= ASTM B148-C958 (NI-AL BRONZE)
SPL= SPECIAL(CUSTOMER TO SPECIFY)

SUFFIX LETTERS

BP =	BY PASS
BA =	BARE STEM
BS =	BELLOWS SEAL
CL =	CHLORINE SERVICE
CR =	CRYOGENIC SERVICE
CW =	CHAIN WHEEL
DR =	DRAIN PORT
DTP =	DRILL, TAP, & PLUG
EB =	EXTENDED BONNET
EXT =	EXTENDED HAND WHEEL
FP =	FULL PORT
FS =	FIRE SAFE
GI =	GREASE INJECTION
GO =	GEAR OPERATED
HB =	HORIZONTAL BALL
HP =	HORIZONTAL PISTON
HO =	HYDRAULIC OPERATED
INT =	INTEGRAL FLANGED
IV =	INTERNAL VENT (GATES-OVER PRESSURIZATION)
LD =	LOCKING DEVICE (CHAIN & LOCK...OR OTHER)
LL =	LOCKING LOOP (LOOP WELDED TO BONNET)
LP =	LONG PATTERN
LS =	LIMIT SWITCHES
LV =	LIVE LOADED PACKING
MO =	MOTOR OPERATED
MP =	MOUNTING PAD
NC =	NACE - MR-01-03 COMPLIANT MATERIALS
OL =	OUTSIDE LEVER & WEIGHT
OX =	OXYGEN SERVICE (CLEANED & BAGGED)
PAR =	PARALLEL SLIDE GATE
PD =	PARABOLIC DISC
PI =	POSITION INDICATOR
PO =	PNEUMATIC OPERATOR
PS =	PRESSURE SEAL
PT =	PTFE SEATS
QS =	QUADROSPHERE
RP =	REGULAR PORT
SC =	STOP CHECK
SG =	STELLITED GUIDES & WEDGE GUIDES (LARGE GATES)
SL =	SPRING LOADED
SPCL =	SPECIAL CLASS - PRESSURE
SPL =	SPECIAL (CUSTOMER TO SPECIFY)
TD =	TILTING DISC
TF =	TEFLON INSERT
TM =	TRUNNION MOUNTED
VB =	VERTICAL BALL CHECK
VL =	VERTICAL LIFT CHECK
VP =	V-PORT DISC
VT =	VITON INSERT
WB =	WELDED BONNET
WGO =	WORM GEAR OPERATOR
WS =	WATER SEAL
Y =	Y PATTERN
A6 =	API 600 DESIGN (STAINLESS STEEL ONLY)

Note: Not all suffix's are applicable to cast valves.

STANDARD FEATURES

DESIGN

NEWCO 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 Stellited 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 NEWCO valves.

Bonnet Type

Type A

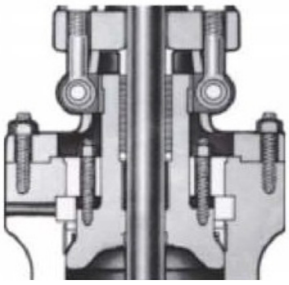
GATE
Class 600. 900. 1500 & 2500
Size 4” & smaller

GLOBE
Class600,900, 1500
Size 4” & smaller Class 2500
Size 3 “ & smaller

Type B

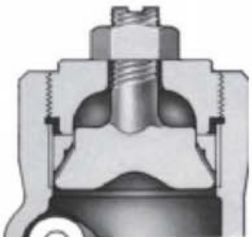
GATE
Class 600. 900. 1500 & 2500
Size 6" & larger

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



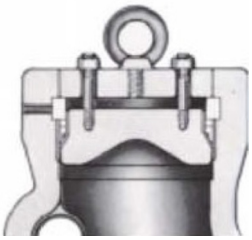
Type C

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



STANDARD FEATURES *Cont.*

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 open when cold. Seating surfaces are Stellited to provide high cycle capability.

3. **Disc (Globe & Swing Check Valve)**
   Globe and check type discs are accurately fitted and guided to minimize vibration. Seating surfaces are Stellited.

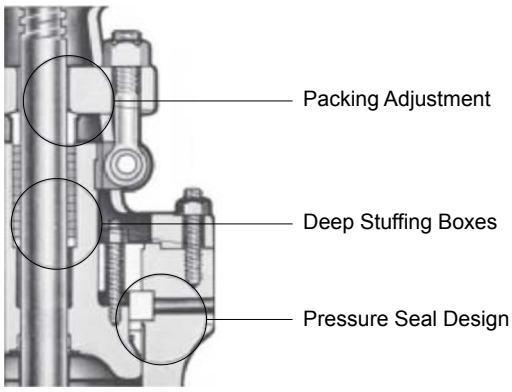
4. **Hammer Blow Type Hand Wheel & Ball Bearing Type Yoke Sleeve**
   All globe valves are equipped with hammer blow type hand wheel. Two integrally cast lugs on the upside of hand wheel simultaneously strike a steel crossbar which is connected directly to valve stem on smaller sizes or to the yoke sleeve on large sizes.

   Bearing Blow Type Yoke Sleeve
   Large, high-pressure valves can require a tremendous valve. Use of ball bearings in the yoke sleeve to operate valves by as much as 50 percent.

CLASS	GATE	GLOBE
600	Size 6" & Larger	Size 6” & Larger
900	Size 2", 2-1/2", 6" & Larger	
1500	Size 2" & Larger	
2500		Size 3" & Larger

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.



STANDARD FEATURES *Cont.*

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 & BEVEL GEAR OPERATED VALVES

Motor Operated Valves

All NEWCO 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

NEWCO 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

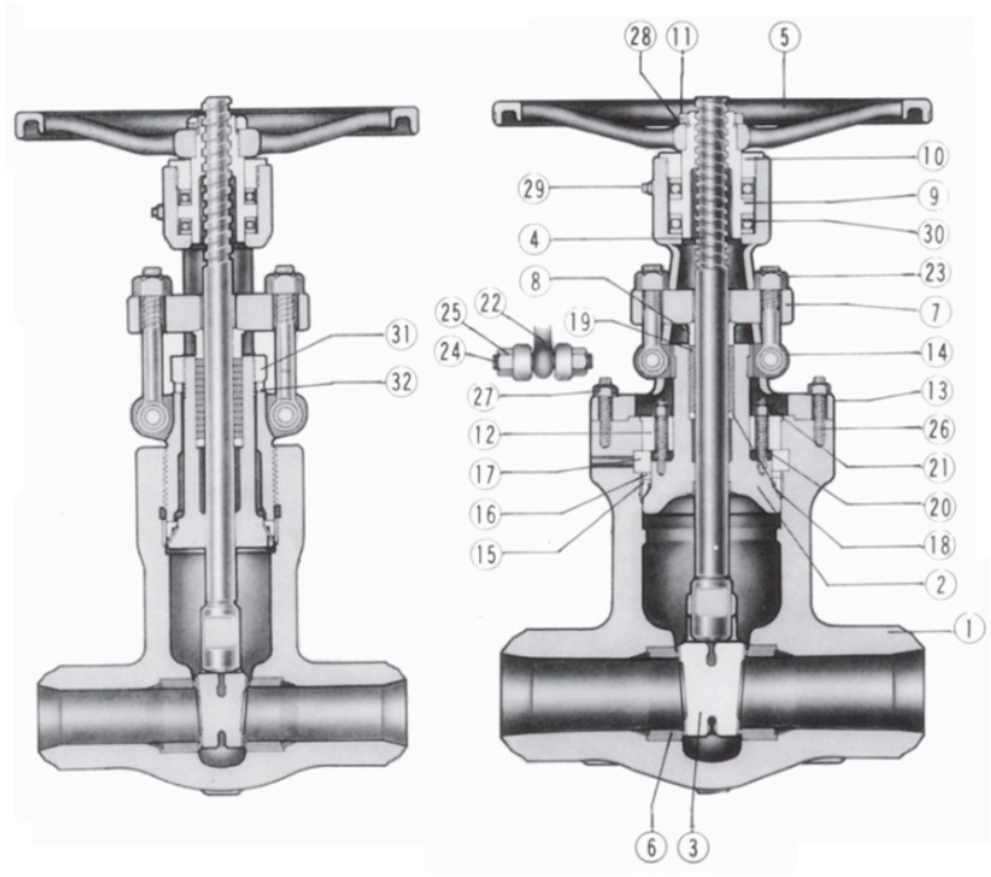
NEWCO bevel gear, valve operators are directly mounted to the gate and globe valves which receive the thrust loads. This results in easy manual opening and closing of the valves. The unit is of compact design with integral thrust bearings.

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 STANDARD FEATURES

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.



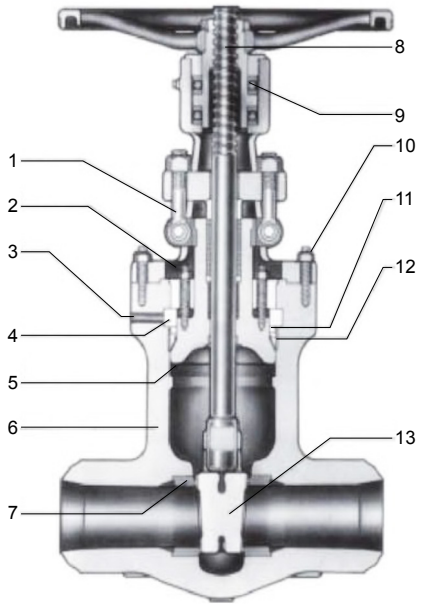
Pressure Rating

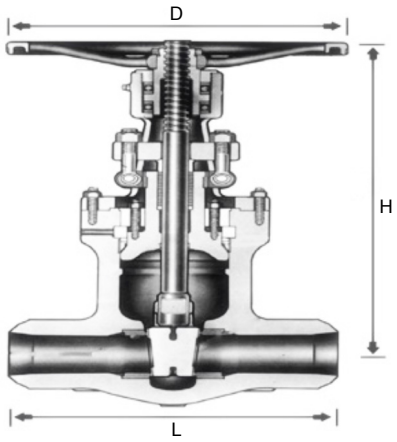
Class 600 Class 900 Class 1500 Class 2500

No.	PART NAME	A216 WCB	A217 WC6	A217 WC9	A217 C5	A351 CF8M
1	Body	A216 WCB	A217 WC6	A217WC9	A217 C5	A351 CF8M
2	Bonnel	A105 + Stellite	A182-F11 + Stellite	A182-F22 + Stellite	A182-F5 + Stellite	A182-F316 + Stellite
3	Wedge	A216 WCB + Stellite	A217WC6 + Stellite	A217 WC9 + Stellite	A217 C5 + Stellite	A351 CF8M + Stellite
4	Stem	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F316
5	Hand Wheel	A536 60-40-18	A536 60-40-18	A536 60-40-18	A536 60-40-18	A536 60-40-18
6	Body Seat Ring	A105 + Stellite	A182 F11 + Stellite	A182 F22 + Stellite	A182 F5 + Stellite	A182 F316 + Stellite
7	Gland Flange	A216WCB	A217 WC6	A217 WC9	A217 C5	A182 F316
8	Packing Gland	A276-410	A276-410	A276-410	A276-410	A276-316
9	Yoke Sleeve	A439-D2C	A439·D2C	A439-D2C	A439-D2C	A439-D2C
10	Yoke Cap	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
11	Hand Wheel Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
12	Bonnel Clamp	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	A351 CF8M
13	Yoke	A216 WCB	A217 WC6	A217WC9	A217 C5	A351 CF8M
14	Hinge Clamp	A216WCB	A217WC6	A217WC9	A217 C5	A351 CF8M
15	Gasket	Stainless Steel 316L	Stainless Steel 316L	Stainless Steel 316L	Stainless Steel 316L	Stainless Steel 316L
16	Adapter Ring	A276·410	A276·410	A276·410	A276·410	A276·316
17	Retainer	A276·410	A276·410	A276·410	A276·410	A276-316
18	Stuffing Ring	A276·410	A276·410	A276•410	A276·410	A276·316
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 Boll	A193-B7	A193-B7	A193-B7	A193-B7	A193-B8
23	Nut	A194-2H	A194-2H	A194-2H	A194-2H	A194-8
24	Gland Clamp Bolt	A193-B7	A193-B7	A193-B7	A193-B7	A193-B8
25	Nut	A194-2H	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	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
29	Grease Nipple	Steel	Steel	Steel	Steel	Steel
30	Bearing	Steel	Steel	Steel	Steel	Steel
31	Yoke Clamp	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	A351-CF8M
32	Washer	A276-410	A276-410	A276-410	A276-410	A276-304

PRESSURE SEAL GATE VALVES

1. Swing eyebolts and gland flange facilitate repacking.
2. Inner row of studs establishes the initial seal of the Pressure Seal Joint.
3. By inserting knockout pin in drilled hole, segmental thrust ring can be easily driven out of retaining groove.
4. Segmental thrust ring absorbs all the thrust applied by internal pressure.
5. Satellite back seat seal area provides accurate guiding of stem.
6. Streamline contour of body simplifies application and reduces cost of Insulation, and effects marked savings In space and weight.
7. Seat rings are Stellite faced and securely welded in place.
8. Accurately machined Acme threads prolong the life of the stem and bushing.
9. Bearings for ease of operation.
10. Outer row of studs secures the yoke-arm to the body.
11. A hardened stainless steel protective ring prevents deformation of the top portion of the soft metallic gasket.
12. The bonnet joint remains tight under all operating conditions as thesealing 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.
13. Stellite faced flexible H wedge prevents sticking due to temperature changes and pipeline stresses





Design Data Feature

1. Complies with requirement of applicable standard: ASME B16.34, B16.10, B16.25, API 598, MSS-SP-55 Optional API 600.
2. OS &Y construction, rising stem, non-rising handwheel.
3. Sealing surface of body seat ring and wedge in oil sizes are hard face with Stellite.
4. Flexible wedge with TEE-HEAD STEM-TO-WEDGE connection.
5. Buttwelding end details of NEWCO std. will be prepared in accordance with ASMEB 16.25.

PRESSURE SEAL GATE VALVES *Cont.*

Accessories

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

Class 600

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	**4"** 100mm	6" 150mm	**8"** 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	7.00	10.00	12.00	18.00	23.00	28.00	32.00	35.00	39.00	43.00	47.00	55.00
Handwheel Diameter (D)	7.87	12.40	**13.98**	17.72	19.69	24.80	27.95	31.50	35.43	35.43	**43.00**	43.00
Height (H)	19.96	22.95	28.00	35.67	45.71	53.07	60.16	66.34	78.98	86.30	97.63	112.95

Class 900

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00	48.00	52.00	61.00
Handwheel Diameter (DJ	12.50	13.98	13.98	19.69	24.80	27.95	31.50	35.43	35.43	43.00	43.00	51.02
Height (H)	23.07	24.72	29.13	37.24	46.65	57.28	65.16	69.88	84.05	91.26	101.46	110.70

Class 1500

Dimensions in inches

Valve *Slie*	2" 50mm	3" 80mm	**4"** 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	16.00	22.00	28.00	34.00	39.00	42.00	47.00	53.00	58.00	76.50
Handwheel Diameter (D)	15.50	15.50	15.75	24.80	27.95	27.95	31.50	35.43	43.00	43.00	51.02	57.50
Height (H)	23.07	28.03	33.70	41.77	44.82	55.00	59.76	64.57	82.24	88.46	103.30	117.60

Class 2500

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	**4"** 100mm	6" 150mm	**8"** 200mm	10" 250mm	12" 250mm
Face to Face (L)	11.00	14.50	18.00	24.00	30.00	36.00	41.00
Handwheel Diameter (DJ	15.50	15.50	15.75	24.80	27.95	27.95	31.50
Height (H)	25.63	31.14	37.44	46.41	49.80	61.11	66.40

GLOBE VALVES STANDARD FEATURES

Service Recommendation

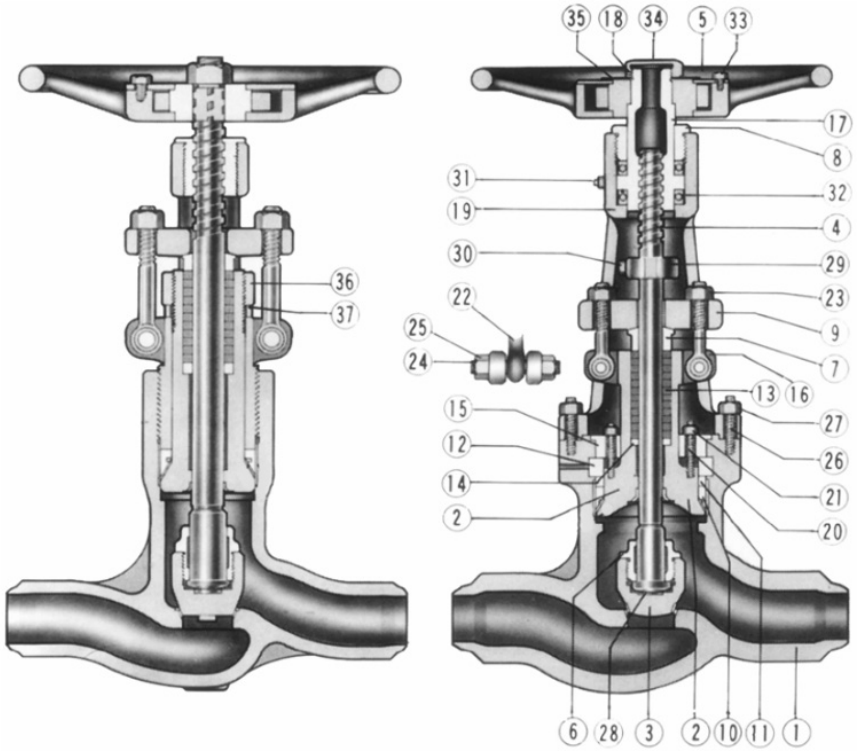
1. Globe valves are normally installed with flow and pressure under the disc.

   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 l 0% 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.



GLOBE VALVES STANDARD FEATURES *Cont.*

Pressure Rating

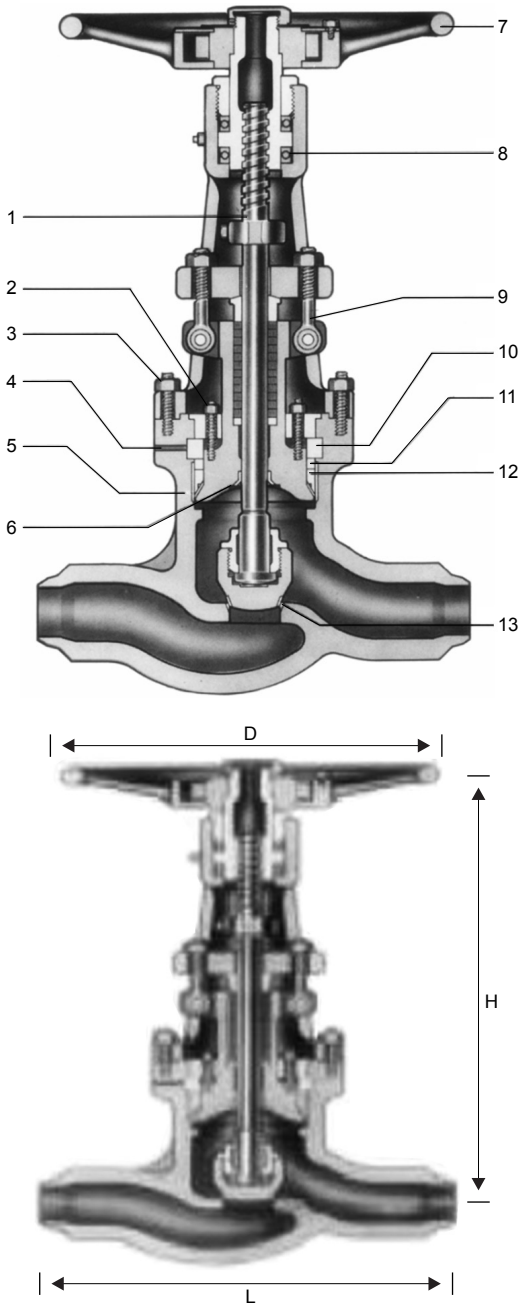
Class 600 Class 900 Class 1500 Class 2500

No.	PART NAME	A216 WCB	A217 WC6	A217 WC9	A217 C5	A351 CF8M
1	Body	A216 WCB	A217WC6	A217 WC9	A217 CS	A351 CF8M
2	Bonnet	A105	A217 WC6	A217 WC9	A217 C6	A351 CF8M
3	Disc	A216 WCB + Stellite	A217 WC6 +Stellite	A217 WC9 +Stellite	A217 CS+ Stellite	A351 CF8M + Stellite
4	Stem	A182 F6a	A479-410	A479-410	A479·410	A479·316
5	Hand Wheel	A536-60-40-18	A216WCB	A216 WCB	A216WCB	A216WCB
6	Lock Nut	A276-410	A276-410	A276-410	A479-410	A479-316
7	Packing Gland	A276-410	A276-410	A276-410	A276-410	A276-316
8	Yoke Cap	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
9	Gland Flange	A216-WCB	A217-WC6	A217-WC9	A217 C5	A351·CF8
10	Gasket	Soft Steel	Soft Steel	Soft Steel	Soft Steel	316SS
11	Adapter Ring	A276-410	A276-410	A276-410	A276-410	A276·316
12	Retainer	A276-410	A276-410	A276-410	A276-410	A276-316
13	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
14	Stuffing Box Ring	A276-410	A276-410	A276-410	A276-410	A276-410
15	Bonnet Clamp	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	A351CF8M
16	Hinge Clamp	A216 WCB	A217 WC6	A217 WC9	A217 CS	A351 CF8M
17	Yoke Sleeve	A439-02C	A439-02C	A439-D2C	A439-02C	A439·02C
18	Hand Wheel Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
19	Yoke	A216WCB	A217WC6	A217WC9	A217 CS	A351 CF8M
20	Bonnet Bolt	A193-B7	A193·B16	A193·B16	A193·B16	A193·B8
21	Nut	A194-2H	A194-7	A194-7	A194-7	A194-8
22	Gland Bolt	A193·B7	A193·B7	A193·B7	A193·B7	A193·B8
23	Nut	A194-2H	A194-2H	A194-2H	A194-2H	A194•8
24	Gland Clamp Boll	A193-B7	A193-B7	A193-B7	A193-B7	A193-B8
25	Nut	A194-2H	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	A276-410	A276·410	A276-410	A276-410	A276·316
29	Stopper	A216WCB	A217 WC6	A217 WC9	A217 CS	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	A307 B	A307B	A307B	A307B
34	Setscrew	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
35	Name Plate	SS Plate	SS Plate	SS Plate	SS Plate	SS Plate
36	Yoke Clamp	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	A276-304
37	Washer	A276-410	A276-410	A276-410	A276-410	A276-304

Note: Material and dimensions are subject to change without notice.

PRESSURE SEAL GLOBE VALVES

1. Accurately machined Acme threads prolong the life of the stem and bushing.
2. Inner row of studs establishes the Initial seal of the Pressure Seal Joint.
3. Outer row of studs secures the yoke-arm to the body.
4. By Inserting knockout pin in drilled hole. segmental thrust ring can be easily driven out of retaining groove.
5. Streamline contour of body simplifies application and reduces cost of Insulation and effects marked savings in space and weight.
6. Stellited back seat seal area provides accurate guiding of stem.
7. 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.
8. Bearings for ease of operation.
9. Swing eyebolts and gland flange facilitate repacking.
10. Segmental thrust ring absorbs oil the thrust applied by Internal pressure.
11. A hardened stainless steel protective ring prevents deformation of the top portion of the soft metallic gasket.
12. 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.
13. Integral body seat face is Stellited



Design Data Feature

1. Comply with requirement of applicable standard: ASME B16.34, B16.10, B16.25, MSS-SP-55, API 598 Optional API600
2. OS &Y construction, rising stem, non-rising hammer-blow handwheel.
3. Buttweld end details of NEWCO std. will be prepared In accordance with ASME B 16.25.

PRESSURE SEAL GLOBE VALVES *Cont.*

Accessories

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

Class 600

Dimensions in inches

Valve Size	2· 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10'" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	7.00	10.00	12.00	18.00	23.00	28.00	32.00	35.00	39.00	43.00	47.00	55.00
Handwheel Diameter (D)	7.87	12.40	13,98	17.72	19.69	24.80	27.95	31.50	35.43	35.43	43.00	43,00
Height (H)	19.96	22.95	28,00	35,67	45.71	53.07	60.16	66,34	78.98	86.30	97,63	112.95

Class 900

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10· 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	14.00	20.00	26.00	31,00	36.00	39,00	43,00	48.00	52,00	61,00
Handwheel Diameter (D)	12.50	13.98	13.98	19.69	24.80	27.95	31.50	35.43	35.43	**43.00**	43.00	51.02
Height (H)	23.07	24.72	29.13	37.24	46.65	57.28	65.16	69.88	84.05	91.26	101.46	110.70

Class 1500

Dimensions in inches

Valve Size	**2"** 50mm	**3"** 80mm	**4"** 100mm	6" 150mm	**8"** 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	16.00	22.00	28.00	34.00	39.00	42.00	47.00	53.00	58,00	76.50
Handwheel Diameter (D)	15.50	13.98	15.75	24.80	27.95	27.95	31.50	35.43	43.00	**43.00**	51.02	57.50
Height (H)	23.07	28.03	33,70	41,77	44.82	55.00	59.76	64,57	82.24	88.46	103.30	117.60

Class 2500

Dimensions in inches

Valve Size	**2"** 50mm	**3"** 80mm	**4"** 100mm	**6"** 150mm	**8"** 200mm	**10"** 250mm	**12"** 250mm
Face to Face (L)	11	14.5	18	24	30	36	41
Handwheel Diameter (D)	15.5	15.5	15.75	24.8	27.95	27.95	31.5
Height (H)	25.63	31.14	37.44	46,41	49.8	61.11	66.4

CHECK VALVES STANDARD FEATURES

Service Recommendation

1. Swing Check valves shall operate in a manner which avoids:

   • The formation of an excessively high surge pressure because of the valve closing.
   • Rapid fluctuating movements of the valve closure member.

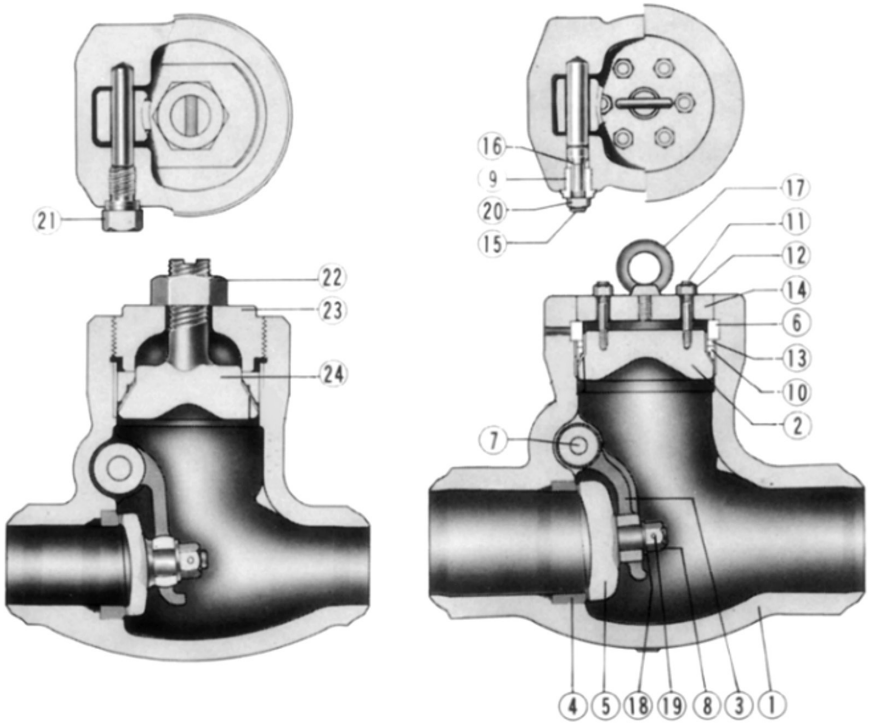
   To avoid the formation of an excessively high surge pressure as a result of the valve closing, the valve must close fast enough to prevent the development of a significant reverse flow velocity which on sudden shut-off Is the source of the surge pressure.

   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 ports 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 with the flow upward. 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.



CHECK VALVES STANDARD FEATURES *Cont.*

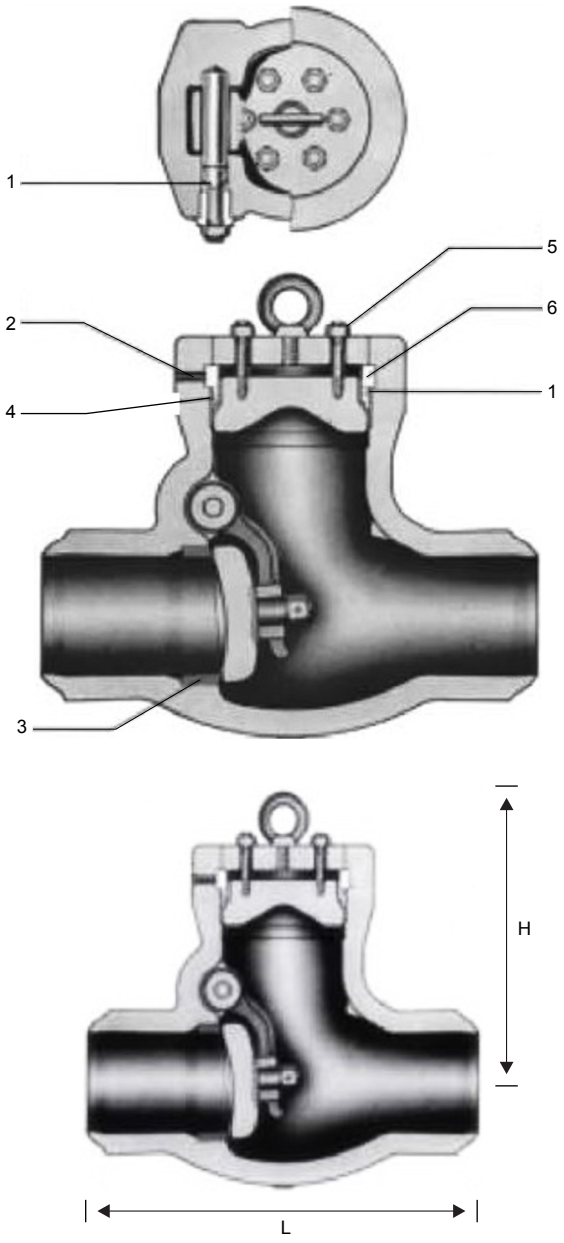
Pressure Rating

Class 600 Class 900 Class 1500 Class 2500

No.	PART NAME	A216 WCB	A217 WC6	A217 WC9	A217 C5	A351 CF8M
1	Body	A216WCB	A217WC6	A217WC9	A217 CS	A351 CFBM
2	Cover	A216 WCB	A217WC6	A217WC9	A217 CS	A351 CFBM
3	Arm	A216WCB	A217WC6	A217WC9	A217 CS	A351 CF8M
4	Body Seat Ring	A105 + Stellite	A182 F11 + Stellite	A182 F22 + Stellite	A182 F5 + Stellite	A276 316 + Stellite
5	Disc	A216 WCB + Stellite	A217 WCB + Stellite	A217 WC9 + Stellite	A217 C5 + Stellite	A351 CFBM + Stellite
6	Retainer	A276-410	A276-410	A276·410	A276·410	A276·316
7	Pin	A276-410	A276·410	A276·410	A276-410	A276·316
8	Disc Nut	A194Gr8	A194Gr8	A194Gr8	A194Gr8	A194Gr8M
9	Plug	A307D	A276·304	A276·304	A276·304	A276·316
10	Gasket	Soft Steel	Soft Steel	Soft Steel	Soft Steel	316SS
11	Cover Clamp Bolt	A193-B7	A193·B16	A193-B16	A193-B16	A193·B8
12	Nut	A194-2H	A194Gr7	A194Gr7	A194Gr7	A194Gr8
13	Adapter Ring	A276-410	A276-410	A276-410	A276-410	A276·316
14	Cover Clamp	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	A351CF8
15	Sealing Bolt	A276·410	A276·410	A276·410	A276·410	A276·316
16	Gasket Ring	Soft Steel	Soft Steel	Soft Steel	Soft Steel	Soft Steel
17	Eye Bolt	A105	A105	A105	A105	A105
18	Washer	A276-410	A276-410	A276-410	A276-410	A276-316
19	Split Pin	A580-304	A580-304	A580·304	A580·304	A580·304
20	Sealing Nut	A194-2H	A194·2H	A194-2H	A194·2H	A194Gr8
21	Plug Bolt	A307B	A276·304	A276·304	A276·304	A276·316
22	Cover Nut	A194-2H	A194-2H	A194-2H	A194-2H	A276-304
23	Cover	A216-WCB	A217WC6	A217WC9	A217 CS	A351 CFBM
24	Bonnet	A216•WCB	A217WC6	A217 WC9	A217 CS	A351 CF8M

PRESSURE SEAL CHECK VALVES

1. Sealing mechanism through spindle is of some construction as the one of pressure seal bonnet.
2. By Inserting knockout pin in drilled hole. segmental thrust ring can be easily driven out of retaining groove.
3. The gasket con be removed freely without damage to the seat ring area in the body. The bonnet joint remains tight under all operating conditions as the sealing pressure is always much greater than the pressure of the fluid in the line, thereby eliminating leakage. The higher the Internal pressure, the greater the sealing pressure.
4. Seat rings ore Stellite faced and securely welded in place.
5. Inner row of studs establishes the Initial seal of the Pressure Seal Joint.
6. Segmental thrust ring absorbs oil the thrust applied by Internal pressure.
7. A hardened stainless steel protective ring prevents deformation of the top portion of the soft metallic gasket.



To ensure secure connection between arm and disc nut, split pin is used.

Design Data Feature

1. Comply with requirement of applicable standard: ASME B16.34, B16.10, B16.25, MSS-SP-55. API 598, Optional API 594.
2. Buttwelding end details of NEWCO std. will be prepared In accordance with ASME B 16.25.

PRESSURE SEAL CHECK VALVES *Cont.*

Accessories

Accessories such as bypasses, outside level and weight are available to meet the customers' requirements.

Class 600

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	7.00	10.00	12.00	18.00	23.00	28.00	32.00	35.00	39.00	43.00	47.00	55.00
Height (H)	7.52	9.76	12.13	14.37	16.14	18.31	20.08	22.00	24.33	26.SO	38.74	30.91

Class 900

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	14.00	20.00	26.00	31.00	36.00	39.00	43.00	48.00	52.00	61.00
Height (H)	9.57	9.53	13.39	15.75	18.11	21.06	24.02	26.97	29.69	32.64	35.35	38.31

Class 1500

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm	14" 350mm	16" 400mm	18" 450mm	20" 500mm	24" 600mm
Face to Face (L)	8.50	12.00	16.00	22.00	28.00	34.00	39.00	**42.00**	47.00	53.00	58.00	76.50
Height (H)	9.57	11.81	13.78	15.91	19.29	22.64	26.85	29.61	31.57	34.53	36.89	40.63

Class 2500

Dimensions in inches

Valve Size	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 250mm
Face to Face (L)	11.00	14.50	18.00	24.00	30.00	36.00	41.00
Height (H)	10.24	13.78	15.94	17.72	20.55	23.62	26.93

PRESSURE - TEMPERATURE RATINGS

CLASS 600

WORKING PRESURE, psig

ASME B16.34-2013

Class 600							
Temperature °F (°C)	WCB*	LCC	WC6	WC9	C5	C12	C12A
-20 to 100 (-29 to 38)	1480	1500	1500	1500	1500	1500	1500
200 (93)	1360	1500	1500	1500	1500	1500	1500
300 (148)	1310	1455	1445	1455	1455	1455	1455
400 (204)	1265	1405	1385	1410	1410	1410	1410
500 (260)	1205	1330	1330	1330	1330	1330	1330
600 (316)	1135	1210	1210	1210	1210	1210	1210
650 (343)	1100	1175	1175	1175	1175	1175	1175
700 (371)	1060	-	1135	1135	1135	1135	1135
750 (399)	1015	-	1065	1065	1065	1065	1065
800 (427)	825	-	1015	1015	1015	1015	1015
850 (454)	-	-	975	975	975	975	975
900 (482)	-	-	900	900	745	900	900
950 (510)	-	-	640	755	550	755	775
1000 (538)		-	430	535	400	505	725
1050 (566)	-	-	290	350	290	345	720
1100 (593)	-	-	190	220	200	225	605
1150 (621)	-	-	130	135	125	150	445
1200 (649)	-	-	80	80	70	105	290

PRESSURE - TEMPERATURE RATINGS

CLASS 900

WORKING PRESURE, psig

ASME B16.34-2013

Class 900							
Temperature °F (°C)	WCB*	LCC	WC6	WC9	C5	C12	C12A
-20 to 100 (-29 to 38)	2220	2250	2250	2250	2250	2250	2250
200 (93)	2035	2250	2250	2250	2250	2250	2250
300 (148)	1965	2185	2165	2185	2185	2185	2185
400 (204)	1900	2110	2080	2115	2115	2115	2115
500 (260)	1810	1995	1995	1995	1995	1995	1995
600 (316)	1705	1815	1815	1815	1815	1815	1815
650 (343)	1650	1765	1765	1765	1765	1765	1765
700 (371)	1590	-	1705	1705	1705	1705	1705
750 (399)	1520	-	1595	1595	1595	1595	1595
800 (427)	1235	-	1525	1525	1525	1525	1525
850 (454)	-	-	1460	1460	1460	1460	1460
900 (482)	-	-	1350	1350	1120	1350	1350
950 (510)	-	-	955	1160	825	1130	1160
1000 (538)	-	-	650	800	595	760	1090
1050 (566)	-	-	430	525	430	515	1080
1100 (593)	-	-	290	330	300	340	905
1150 (621)	-	-	195	205	185	225	670
1200 (649)	-	-	125	125	105	155	430

PRESSURE - TEMPERATURE RATINGS

CLASS 1500

WORKING PRESURE, psig

ASME B16.34-2013

Class 1500							
Temperature °F (°C)	WCB*	LCC	WC6	WC9	C5	C12	C12A
-20 to 100 (-29 to 38)	3705	3750	3750	3750	3750	3750	3750
200 (93)	3395	3750	3750	3750	3750	3750	3750
300 (148)	3270	3640	3610	3640	3640	3640	3640
400 (204)	3170	3520	3465	3530	3530	3530	3530
500 (260)	3015	3325	3325	3325	3325	3325	3325
600 (316)	2840	3025	3025	3025	3025	3025	3025
650 (343)	2745	2940	2940	2940	2940	2940	2940
700 (371)	2655	-	2840	2840	2840	2840	2840
750 (399)	2535	-	2660	2660	2660	2660	2660
800 (427)	2055	-	2540	2540	2540	2540	2540
850 (454)	-	-	2435	2435	2435	2435	2435
900 (482)	-	-	2245	2245	1870	2245	2245
950 (510)	-	-	1595	1930	1370	1885	1930
1000 (538)	-	-	1080	1335	995	1270	1820
1050 (566)	-	-	720	875	720	855	1800
1100 (593)	-	-	480	550	495	565	1510
1150 (621)	-	-	325	345	310	375	1115
1200 (649)	-	-	205	205	170	255	720

PRESSURE - TEMPERATURE RATINGS

CLASS 2500

WORKING PRESURE, psig ASME B16.34-2013

Class 2500							
Temperature °F (°C)	WCB*	LCC	WC6	WC9	C5	C12	C12A
-20 to 100 (-29 to 38)	6170	6250	6250	6250	6250	6250	6250
200 (93)	5655	6250	6250	6250	6250	6250	6250
300 (148)	5450	6070	6015	6070	6070	6070	6070
400 (204)	5280	5865	5775	5880	5880	5880	5880
500 (260)	5025	5540	5540	5540	5540	5540	5540
600 (316)	4730	5040	5040	5040	5040	5040	5040
650 (343)	4575	4905	4905	4905	4905	4905	4905
700 (371)	4425	-	4730	4730	4730	4730	4730
750 (399)	4230	-	4430	4430	4430	4430	4430
800 (427)	3430	-	4230	4230	4230	4230	4230
850 (454)	-	-	4060	4060	4060	4060	4060
900 (482)	-	-	3745	3745	3115	3745	3745
950 (510)	-	-	2655	3220	2285	3145	3220
1000 (538)	-	-	1800	2230	1655	2115	3030
1050 (566)	-	-	1200	1455	1200	1430	3000
1100 (593)	-	-	800	915	830	945	2515
1150 (621)	-	-	545	570	515	630	1855
1200 (649)	-	-	345	345	285	430	1200

* Not recommended for prolonged use above 800° F.
** For weld end valves only. Flanged end ratings terminate at 1000° F.

Newmans® VALVE

When you need a valve, contact us first.

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