

Gate, Globe & Check Valves



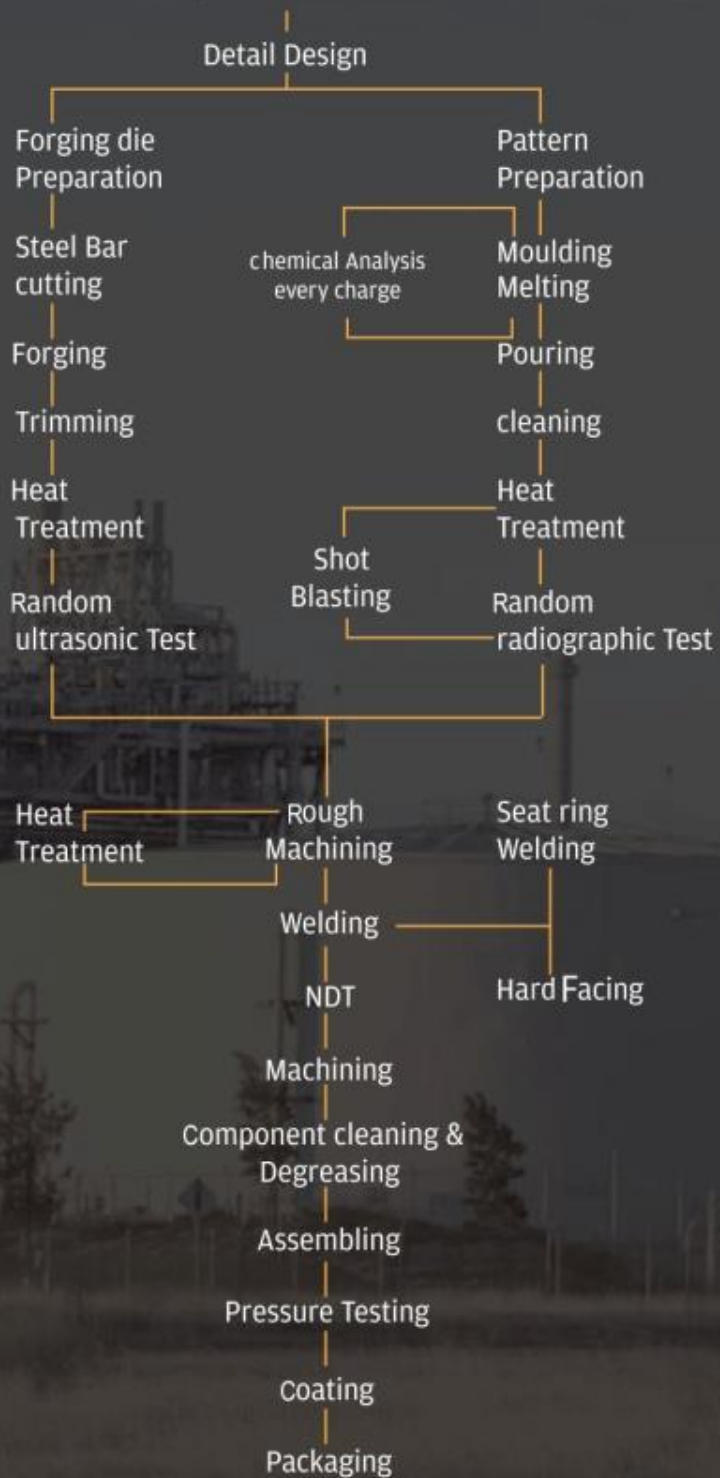
**J.R.
INDUSTRIES®**
India's first choice in quality valves





standard Production Flow

Design Specification





JR

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We make valves since 1998



The JR Industries, name has been synonymous with cast steel valves since 1998, we began a valve manufacturing business in Ahmedabad, India.

Now JR Industries supplies over Fifty Companies in India with a range of steel products for the oil and petrochemical markets.

The JR Industries range of steel Gate, Globe Check & Ball valves are produced to meet the demanding needs and high specification requirements of the oil, petrochemical and chemical markets.

Manufactured and tested to Exacting international quality standards including API 600, API 6D, BS 1865 and BS 1873 the range extends from 2" NB to 36" NB in ANSI Class 150, 1500 Lb in cast carbon steel ASTM A216WCB.

From our ISO 9001 accredited operation in ahmedabad. Gujarat, India are able to supply its worldwide customer base on a mainly ex-stock basis, whilst also offering the flexibility of modification to standard designs to include actuation, extension spindles etc.

Projects activity is handled by an in-house project department where witness test, certification drawings and additional documentation is required A dedicated expediting department compliments the service given to our customers by providing delivery plans and ensuring timely despatch of product.

This catalogue provides basic dimensions and specification for ordering JR industries cast steel valves. The illustrations are of a particular size of each product line and do not necessarily represent all sizes in detail. The designs and materials may be varied in accordance with JR Industries policy of continuous improvement.

>> Market Sectors

JR Industries develops and designs valves for all applications, but the main focus is in oil & Gas, Chemical, Petrochemical, Pulp & Paper and Energy sectors.



Oil



Petrochemical



Gas



Pulp & Paper



Chemical



Energy



>> Our Services

JR Industries, offers its customers a world wide service, from technical advice to choose the right valve up to the design and manufacture of custom built valves to meet special service requirements.

Our R+D department is always ready to find solutions for severe applications and our global distribution network offers quick availability of JR valves and an efficient after sales service.

OUR SERVICES



>> QUALITY ASSURANCE

J.R. Industries is committed for continual improvement in customer satisfaction by fulfills the requirements of customer with quality product and timely supply with adoption & continually improving quality managements system. J.R. Industries wants to be leader in the field of valves manufacturing by increasing sales and by developing more new products.

>> Environmental Certifications



>> QUALITY OBJECTIVES

1. TO achieve 100% on-time delivery.
2. To achieve no defect in supplied product at customer's end.
3. To achieve 99% satisfaction of the customers.
4. To reduce customer complaint up to Zero.
5. To provide at least one training to all the employees in this year

GATE VALVES

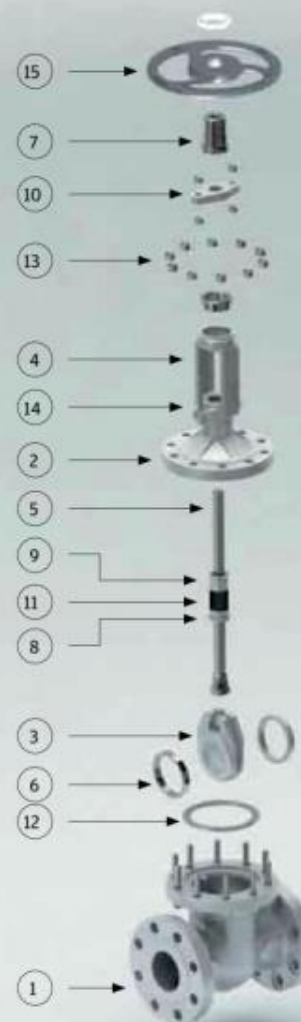
2" - 28" Class 150 - Class 600

Gate Valves Serve as efficient on-off valves with flow in either direction. in such a design, a wedge slides cross a general passageway in order to control fluid flow (like a sliding gate - hence, the name) One of the most significant characteristic of this type of valves is its straight-through, unobstructed passageway when set in the full open position. This is made possible by the wedge lifting entirely out of the passageway. As a result, gate valves are characterized by a minimum of turbulence and pressure drop in operation.

While gate valves are good for applications requiring these two factors, they are not recommended for installation in which throttling would be a function. they are designed for on/off service.

BILL OF MATERIALS		TRIM 8	TRIM 2	TRIM 8	TRIM 10
Item	Description	Carbon Steel	Carbon Steel (Low Temp.)	Alloy Steel	Stainless Steel
1	Body	A 216 Gr. WCB	A 352 Gr. LCB	A 217 Gr. CS	A 351 Gr. CF8M
2	Bonnet	A 216 Gr. WCB	A 352 Gr. LCB	A 217 Gr. CS	A 351 Gr. CF8M
3	Wedge	A 216 Gr. WCB + ER410	A 352 Gr. LCB + ER308	A 207 Gr. CS + ER410	A 351 Gr. CF8M
4	Yoke	A 216 Gr. WCB	A 352 Gr. LCB	A 217 Gr. CS	A 351 Gr. CF8M
5	Stem	A 182 Gr. F6a	A 182 Gr. F304	A 182 Gr. F6a	A 182 Gr. F316
6	Seat Ring	A 305 + Stellite	A 182 Gr. F304	A 182 Gr. F6a + Stellite	—
7	Stem Nut	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2
8	Backrest	A182 Gr. F6a	A182 Gr. F304	A 182 Gr. F6a	—
9	Gland	A 105	A 105	A 182 Gr. F6a	A 182 Gr. F316
10	Gland Flange	A 105	A 105	A 105	A 182 Gr. F304
11	Stem Packing	Graphite	Graphite	Graphite	Graphite
12	Gasket (Class 150)	SS304 / Graphite	SS304 / Graphite	SS304 / Graphite	SS316 / Graphite
13	Gasket (Class 300)	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS316 / Graphite
14	Gasket (Class 600)	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS316 / Graphite
15	Gasket (Class 900)	RI SS304	RI SS304	RI SS304	RI SS316
16	Gasket (Class 1500)	RI SS304	RI SS304	RI SS304	RI SS316
17	Gasket (Class 2500)	RI SS304	RI SS304	RI SS304	RI SS316
18	Bonnet Bolt & Nut	A 193 Gr. B7 / A 194 Gr. 2H	A320 Gr. L7 / A194 Gr. 7	A 193 Gr. B7 / A 194 Gr. 2H	A193 Gr. B7 / A 194 Gr. 2H
19	Eye Bolt & Nut	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H
20	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

* Standard construction with trims 8,2 and 10. Others constructions are available.
(C) Zinc coating.





Application & Function

Gate Valves are primarily used for stop valves fully opened or fully closed they are not normally considered for throttling purposes, but more for slurries, viscous fluids, etc.

Gate Valves are characterized by a traveling wedge. which is moved with the operation of the stem nut. The wedge travels perpendicular to the direction of the flow.

Gate valves usually have a minimum pressure drop when fully open, provide tight shut off when fully closed, and remain relatively free of contamination buildup

BODY & BONNET

the design of the body and bonnet is calculated to achieve the most regular distribution of stress in all directions, as well as the minimum turbulence and resistance to flow.

Valve bonnets are equipped with a backseat bushing. The yokes is integrally cast on Pressure Classes 150 and 300 up to 12" and up to 10" on class 600 and higher ratings.

BODY-BONNET JOINT

Standard body-bonnet joints of gate valves are machined as follows :

PRESSURE CLASS	JOINT DESIGN
150	Flat Faced
300, 600	Male-and Female
900* & Over	Ring Type Joint

* Pressure Class 600 also available in Ring Type joint

JR can supply any style of gasket required by customer.

FLEXIBLE GATE

All JR gate valves 3 and above valves feature a flexible wedge unless otherwise specified by the customer. The flexible gate shifts along the body of the valve during opening and closing, being held in position by a guide slot that minimizes the friction between body seat and gate. This design is especially suited to compensate slight thermal deformations produced by the pipe or the valve it self safeguarding a better sealing between body and gate seats.

STEM

The steam of JR gate valves are forged from one piece and ACME

threaded, then mechanized and finally provided with a smooth finishing in order to minimize friction.

in gate valves, the union of stem and wedge shall be in T form, designed to prevent the stem disengaging it self from the gate while being in service. This design includes a conical raised surface that presses the seat against the bonnet backseat in the fully open position.

BACKSEAT

All JR gate and globe valves have backseat threaded in the bonnet, or for the pressure seal valves, welded to the bonnet. into pressure seal the hard facing is Stellite 6 or equivalent.

DESIGN STANDARDS		TEST / INSPECTION METHODS & ACCEPTANCE CRITERIA		
		TEST / INSPECTION	METHOD	ACCEPTANCE CRITERIA
Bolted Bonnet Gate Valve	API 600/ISO 10434 & ASME B16.34	Visual Inspection		MS5 SP-55
Pressure Seal Gate Valve (Long & Short pattern)	ASME B16.34	Marking		MS5 SP-25 & ISO5208
API 603 Gate Valve	API 603	Dimensional Inspection		Applicable valve
Through Conduit Gate Valve	API 60	Chemical Analysis	ASTM E350	Applicable Standard
Cryogenic Gate	API 600 / BS 1873 & BS 6364	Mechanical Properties	ASTM A370	Applicable Standard
Face to Face / End to End Dimensions	ASME B16.10 / ISO 5752	U id Penetrant Inspection	ASTM A165	ASME B16.34
End Flanged dimensions	ASME B16.5 / ISO 7005-1, ASME B16.47-AB8,MS5 SP- 44 & API 605	Magnetic Particle Inspection	ASTM E709	ASME B16.34
Butt-weld End dimensions	ASME B16.25	Radiographic Inspection	ASME B16.34	ASME B16.34
Valve Inspection & testing	API 600 / ISO 10434 & ISO 5208, EN 17266	Ultrasonic Inspection	ASTM A388	ASME B16.34 / ISO 5208
Pressure - Temperature rating	ASME B16.34	Pressure Testing	API 598 / ISO 5208	



Class 150 Gate Valve

OS & Y, Rising Stem, Flexible solid wedge, Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : API 600

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

End Flange Dimension :

2"-24" to ANSI B 16.5

26"-36" to MSS SP-44

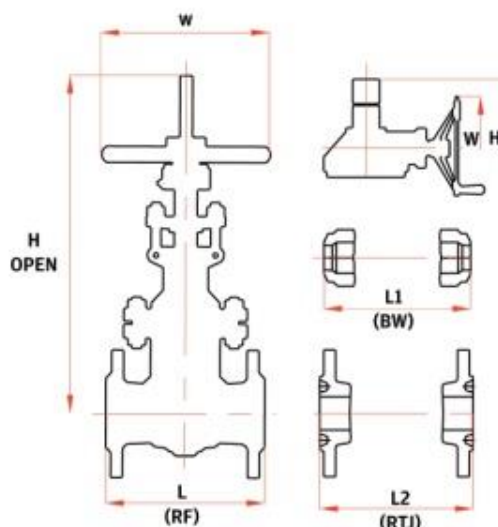
to API 605 on request

B.W. Ends to ANSI B.16.25

Shell Wall Thickness

2"-24" to API 600

26"-36" to manufacturers standard



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	450 psig	325 psig	80 psig
WC6	450 psig	319 psig	80 psig
CF8M	425 psig	303 psig	80 psig

Class 300 Gate Valve

OS & Y, Rising Stem, Flexible solid wedge, Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : API 600

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

End Flange Dimension :

2"-24" to ANSI B 16.5

26"-36" to MSS SP-44

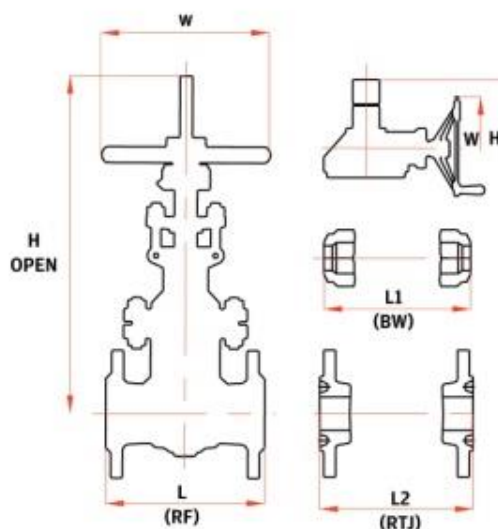
to API 605 on request

B.W. Ends to ANSI B.16.25

Shell Wall Thickness

2"-24" to API 600

26"-36" to manufacturers standard



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	1125 psig	814 psig	80 psig
WC6	1125 psig	825 psig	80 psig
CF8M	1100 psig	792 psig	80 psig



class 600 Gate valve

OS & Y, Rising Stem, Flexible solid wedge, Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : API 600

Face to Face Dimension : ANSI B 16.10

End to End Dimension : ANSI B 16.10

End Flange Dimension :

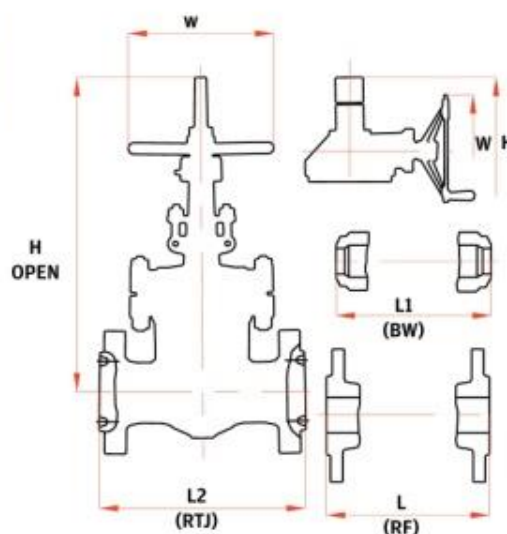
2"-24" to ANSI B 16.5

B.W.Ends to ANSI B 16.25

Shell Wall Thickness

2"-24" to API 600

Manufacturing to NACE MR-01-75
on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	2225 psig	1628 psig	80 psig
WC6	2250 psig	1650 psig	80 psig
CF8M	2175 psig	1584 psig	80 psig



GLOBE VALVES

2" - 18" | Class 150 - Class 600

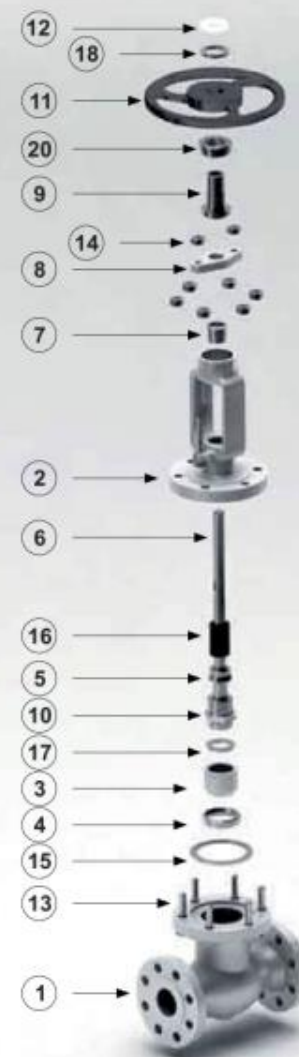
All globe valves utilize the "port closure" concept of valves. By this it meant that fluid passes through a specific opening (rather than a general passageway, as in the case of gate valves), and the fluid is controlled by means of a stem mounted disc or inserted plug in that area.

Despite of lacking the straight through, unobstructed passageway of the gate valve, these globe types are superior in two key aspects - throttling and serviceability under frequent use. They are better at the throttling function because they permit fluid to exit uniformly around the circumference of a seat, rather than slicing down to limit passage through a narrowly restricted area



BILL OF MATERIALS		TRIM 8	TRIM 2	TRIM 8	TRIM 10
Items	Description	Carbon Steel	Carbon Steel (Low Temp.)	Alloy Steel	Stainless Steel
1	Body	A 216 Gr. WCB	A 352 Gr. LC8	A 217 Gr. C5	A 351 Gr. CF8M
2	Bonnet	A 216 Gr. WCB	A 352 Gr. LC8	A 217 Gr. C5	A 351 Gr. CF8M
3	Disc	A105 + ER 40.0	A 182 Gr. F304	A 217 Gr. C5 + ER 40.0	A 351 Gr. CF8M
4	Seat Ring	A105 + Stellite	A 182 Gr. F304	A182 Gr. F6a + Stellite	---
5	Backseat	A182 Gr. F6a	A 182 Gr. F304	A182 Gr. F6a	---
6	Stem	A182 Gr. F6a	A 182 Gr. F304	A182 Gr. F6a	A 182 Gr. F316
7	Gland	A 105	A 105	A182 Gr. F6a	A 182 Gr. F316
8	Gland Flange	A 105	A 105	A 105	A 182 Gr. F304
9	Stem Nut	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2	B 148 / A 439 Gr. D2
10	Disc Nut	A 182 Gr. F6a	A 182 Gr. F304	A 182 Gr. F6a	A 182 Gr. F316
11	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
12	Handwheel Nut	Steel	Steel	Steel	Steel
13	Bonnet Bolt & Nut	A 193 Gr. B7 / A 194 Gr. 2H	A320 Gr. L7 / A194 Gr. 7	A 193 Gr. B7 / A 194 Gr. 2H	A193 Gr. B7 / A 194 Gr. 2H
14	Eye Bolt & Nut	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H	A 193 Gr. B7 / A 194 Gr. 2H
15	Gasket (Class 150)	SS304 / Graphite	SS304 / Graphite	SS304 / Graphite	SS316 / Graphite
15	Gasket (Class 300)	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS316/Graphite
15	Gasket (Class 600)	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS304 / Graphite	Spw SS316/Graphite
15	Gasket (Class 900)	R1 SS304	R1 SS304	R1 SS304	R1 SS316
15	Gasket (Class 1500)	R1 SS304	R1 SS304	R1 SS304	R1 SS316
15	Gasket (Class 2500)	R1 SS304	R1 SS304	R1 SS304	R1 SS316
16	Stem Packing	Graphite	Graphite	Graphite	Graphite
17	Thrust Washer	A 182 Gr. F6a	A 182 Gr. F304	A 182 Gr. F6a	A 182 Gr. F316
18	Washer	Steel	Steel	Steel	Steel
19	Grub Screw	A 193 Gr. B7	A 193 Gr. B7	A 193 Gr. B7	A 193 Gr. B7
20	Lock Nut	Steel	Steel	A 182 Gr. F6a	A 182 Gr. F316

* Standard construction with trim 8, 7 and 3L. Others construction are available.
 (D) Zinc coating.





APPLICATION & FUNCTION

Globe valves are primarily used as control valves where throttling or both and shut-off are required. Globe valves can also be used for on-off service' however, because of the design a pressure drop become inherent. This is generally confined to on-off applications where the valve is normally closed and pressure will find the globe valve with the flow and pressure under the disc. JR cast steel globe valves are commonly made in outside screw and yoke designs with full ports (including seat ring) and heavy-duty, conical plug type discs.

BODY & BONNET

The body is full ported and spherical in from. The design utilizes large radiuses which allow for the stresses. flow resistance and turbulence to be kept to a minimum. Valve bonnets are equipped with a backseat bushing.

BODY COVER JOINT

Standard body-cover joints of our globe valves are machined as follows :

Pressure class	joint Design
150, 300, 600	Male - and Female
900* & over	Ring Type Joint

*Pressure class 600 also available in Ring Joint Type

JR can supply any style of gasket required by the customer.

DISC

The valve is normally supplied with the conical plug type dist. The disc rotates freely on the Stem and incorporates a differential angle from that on the seat ring. This design provides the maximum assurance of, is less likely to stick in the body seat, and is considered the simplest design for field repair

SEAT RINGS

Seat rings are designed to greatly reduce and/or prevent any turbulence and avoid damages due to corrosion. The seat ring are forged or rolled in one Palace and then seal welded and overlaid if required after wedding and all required heat treating, the seat ring faces are machined, throughly Cleaned and inspected before leaving for assembly.

STEM

As JR's Standard all stems are rotating and rising; however, a non-rotating design is available when specified by the customers. The accuracy in the dimensions and finishes assure a long life with a perfect tightness in the packing area, resulting in lower fugitive emissions. All of our stems are designed with integral backseat feautres which provide an ultimate seal during packing changes.

DESIGN STANDARDS

Bolted Bonnet Globe Valve	ASME B16.34
Bolted Bonnet Globe Valve	BS 1873 & ASME B16.34
Pressure Seal Globe Valve (Long & Short pattern)	ASME B16.34
Face to Face / End to End Dimensions	ASME B16.10 / ISO 5752
End Flanged dimensions	ASME B16.5 / ISO 7005-1, ASME B16.47-ASB MSS SP-44 & API 605
Butt-weld End dimensions	ASME B16.25
Valve inspection & testing	BS 6755, ISO 5208, BS 6755, EN 13266
Pressure - Temperature rating	ASME B16.34

TEST / INSPECTION METHODS & ACCEPTANCE CRITERIA

TEST / INSPECTION	METHOD	ACCEPTANCE CRITERIA
Visual inspection		MSS SP-55
Marking		MSS SP-25 & ISO 5208
Dimensional inspection		Applicable valve
Chemical Analysis	ASTM E350	Applicable Standard
Mechanical Properties	ASTM A370	Applicable Standard
Li uid Penetrant Inspection	ASTM A165	ASME B16.34
Magnetic Particle Inspection	ASTM E709	ASME B16.34
Radiographic Inspection	ASME B16.34	ASME B16.34
Ultrasonic Inspection	ASTM A388	ASME B16.34
Pressure Testing	API 598 / ISO 5208	API 598 / ISO 5208



Class 150 Globe Valve

OS & Y, Rising Stem, Plug type disc. Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1873

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

End flange to ANSI B 16.5

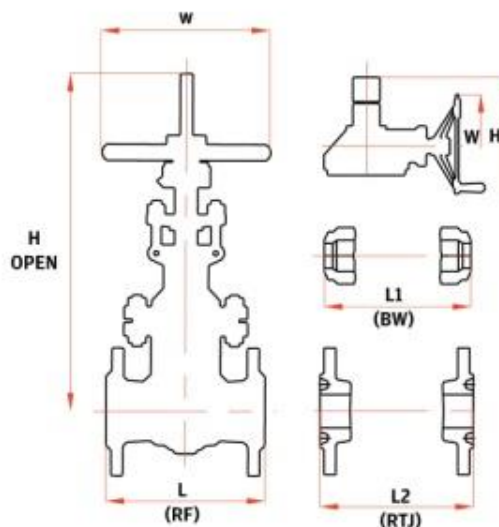
B.W.Ends to ANSI B 16.25

Shell Wall Thickness

2"-12" to BS1873

Manufacturing to NACE

MR-01-75 on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	450 psig	325 psig	80 psig
WC6	450 psig	319 psig	80 psig
CF8M	425 psig	303 psig	80 psig

Class 300 Globe Valve

OS & Y, Rising Stem, Plug type disc. Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1873

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

End flange to ANSI B 16.5

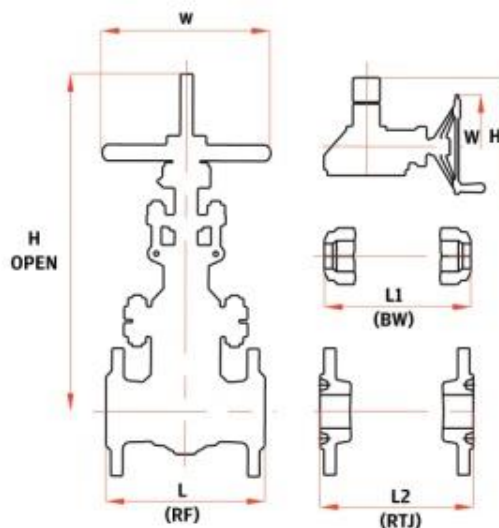
B.W.Ends to ANSI B 16.25

Shell Wall Thickness

2"-12" to BS1873

Manufacturing to NACE

MR-01-75 on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	1125 psig	814 psig	80 psig
WC6	1125 psig	825 psig	80 psig
CF8M	1100 psig	792 psig	80 psig



Class 600 Globe Valve

OS & Y, Rising Stem, Plug type disc. Bolted Bonnet, Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1873

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

End flange to ANSI B 16.5

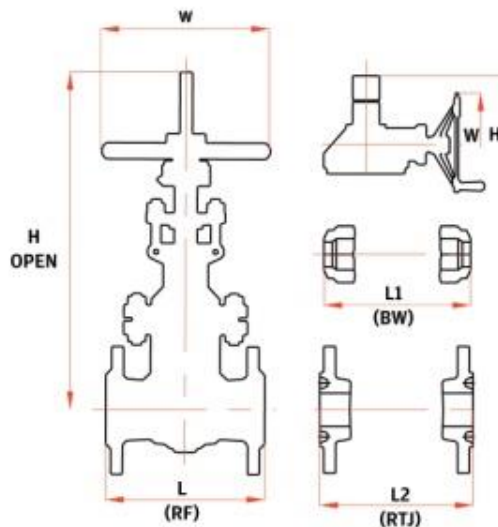
B.W.Ends to ANSI B 16.25

Shell Wall Thickness

2"-12" to BS 1873

Manufacturing to NACE

MR-01-75 on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	2225 psig	1628 psig	80 psig
WC6	2250 psig	1650 psig	80 psig
CF8M	2175 psig	1584 psig	80 psig



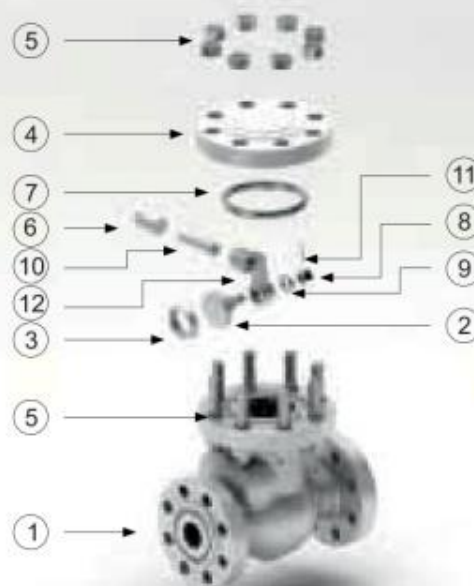
CHECK VALVES

2"-20" | Class 150 - Class 600



While not a valve in the traditional sense, check valves serve an important application namely to prevent flow in one direction while allowing it in the other. A check valve is self-actuated and designed to prevent fluid from flowing back into the system (prevent reverse flow.) Real - Life applications Include preventing back flow into an injection line or into a pump.

The fluid flow opens the valve by forcing a disk or ball in one direction. when the flow stops, the disk or ball is seated and closes the valve. They can be installed in horizontal or vertical upward flow piping.



BILL OF MATERIALS		TRIM 8	TRIM 2	TRIM 8	TRIM 10
Item	Description	Carbon Steel	Carbon Steel (Low Temp.)	Alloy Steel	Stainless Steel
1	Body	A 216 Gr. WCB	A 352 Gr. LCB A	217 Gr. CS A	351 Gr. CF8M
2	Disc	A105 + ER 410	A 182 Gr. F304	A 182 Gr. F6a	A 182 Gr. F316
3	Seat Ring	A105 + Stellite	A 182 Gr. F304	A 182 Gr. F6a + Stellite	---
4	Cover A	216 Gr. WCB / A 515 QD	A 352 Gr. LCB / A 182 GR04	A 217 Gr. CS A	351 Gr. CF8M
5	Cover Bolt & Nut	A 193 Gr.87 / A 194 Gr.2H	A 320 Gr. L7 / A 194 Gr.7 A	293 Gr.87 / A 194 Gr.2H	A 193 Gr.87 / A 194 Gr.2H
6	Bracket Stud & Nut	A 193 Gr.88 / A 194 Gr.8	A 193 Gr.88 / A 194 Gr.8 A	193 Gr.88 / A 194 Gr.8	A 193 Gr.88M / A 194 Gr.8M
7	Gasket S	PW S.S. 304 / Graphite S	PW S.S. 304 / Graphite S	PW S.S. 304 / Graphite	SPW S.S. 316 / Graphite
8	Washer A	ISI 410 A	ISI 304 A	ISI 410	AISI 316
9	Disc Nut	AISI 304 A	ISI 304 A	ISI 304	AISI 316
10	Hinge Pin *	A182 Gr. F6a A	182 Gr. F304	A182 Gr. F6a	A 182 Gr. F305
11	Split Pin A	ISI 304 A	ISI 304 A	ISI 304	AISI 316
12	Hinge	A 216 Gr. WCB / A 515 QD	A 352 Gr. LCB A	217 Gr. CS A	351 Gr. CF8M
13	Hinge Bracket	A 216 Gr. WCB / A 515 QD	A 352 Gr. LCB A	217 Gr. CS A	351 Gr. CF8M

*Standard Construction with trim 8, 2 and 10, others constructions are available.
 (D) Zinc coating.



APPLICATION & FUNCTION

Swing Check valves are designed to close quickly and automatically with positive shut off in either horizontal or vertical (flow up) pipe runs.

Inherently, swing check valves have a low pressure drop and are best suitable for velocity applications.

Our Closure design allows our swing check valve to close completely even and remain closed with no flow when installed in a horizontal pipe run.

BODY

The body is full ported and spherical in form. The design utilizes large radiuses which allow for the stresses, flow resistance and turbulence to be kept to a minimum. Bosses are provided for optional drains.

BODY-COVER JOINT

Standard body-cover joints of our swing check valves are machined as follows :

PRESSURE CLASS

150, 300, 600
900*% over

JOINT DESIGN

Male-and-Female
Ring Type Joint

* Pressure Class 600 also available in Ring Type Joint.

JR can supply any style of gasket required by customer.

HINGE ASSEMBLY

The hinge arm pivots on the hinge pin which is located near the disc's center of gravity. Body penetration for the hinge pin is sealed with a soft steel gasket and flanged plug. The hinge arm is designed to withstand the shock load of quick closing to insure a longer life and continued shut off. The hinge arm also has an integral disc stop that provides a positive stop in the open position.

DISC

Each disc's seating surface is precision ground and mated to the seat ring for insurance of a positive shut off. The disc is secured to the hinge arm with the disc nut and pinned to prevent disengagement during service. We can provide either integral or overlaid seat facings at customer's request.

SEAT RING

Seat rings are designed to greatly reduce and/or prevent any turbulence and avoid damages due to corrosion. The seat rings are forged or rolled in one piece and then seal welded and overlaid, if required. After welding and all required heat treating, the seat ring faces are machined, thoroughly cleaned and inspected before leaving for assembly.

BOLTS AND NUTS

For normal Service conditions, ASTM A194 Class 2H and ASTM A193 H Grade B7 nuts and stud bolts are furnished, if specified for high temperature service conditions, ASTM A 194 Class 4 and ASTM A193 Grade B16 nuts and stud bolts are furnished. Standard bolting furnished for our stainless steel valves consists of ASTM A194 Class 8 and ASTM A193 Grade B8 nuts and stud bolts.

DESIGN STANDARDS

Bolted Bonnet Swing Check Valve	BS2668 & ASME B06.34 & API 6D
P. pressure Seal Swing Check Valve - Rising & Non-Rising	ASME B16.34
Face to Face / End to End Dimensions	ASME B16.10 / ISO 5752
End Flanged dimensions	ASME B16.5 / ISO 7005-1, ASME B16.47-AB8 MSS SP-44 & API 605
Butt-weld End dimensions	ASME B16.25
Valve inspection & testing	BS1868 & ISO 5208 & BS4755
P. pressure - Temperature rating	ASME B16.34

TEST / INSPECTION METHODS & ACCEPTANCE CRITERIA

TEST / INSPECTION	M	ETHIO	ACCEPTANCE CRITERIA
Visual Inspection			MSS SP-55
Marking			MSS SP-25 & ISO 5208
Dimensional Inspection			Applicable valve
Chemical Analysis		ASTM E350	Applicable Standard
Mechanical Properties		ASTM A370	Applicable Standard
Liquid Penetrant Inspection		ASTM A165	ASME B16.34
Magnetic Particle Inspection		ASTM E709	ASME B16.34
Radiographic Inspection		ASME B16.34	ASME B16.34
Ultrasonic Inspection		ASTM A388	ASME B16.34
Pressure Testing		API 598 / ISO 5208	API 598 / ISO 5208

Class 150 Check Valve

Bolted Cover, Swing Type Disc,
Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1868

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

Flange End

2"-24" to ANSI B 16.5

>24" to MSS SP-44

to API 605 on request

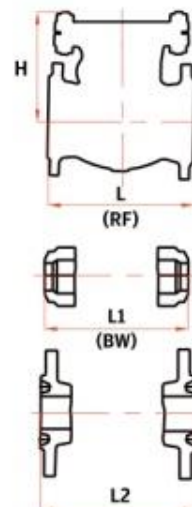
B.W.Ends to ANSI B.16.25

Shell Wall Thickness

2"-24" TO API 600

>24" to manufacturer's standard

Manufacturing to NACE MR-01-75
on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	450 psig	325 psig	
WC6	450 psig	319 psig	
CF8M	425 psig	303 psig	

Class 300 Check Valve

Bolted Cover, Swing Type Disc,
Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1868

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

Flange End

2"-24" to ANSI B 16.5

>24" to MSS SP-44

to API 605 on request

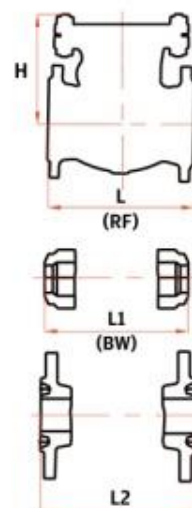
B.W.Ends to ANSI B.16.25

Shell Wall Thickness

2"-24" TO API 600

>24" to manufacturer's standard

Manufacturing to NACE MR-01-75
on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	1125 psig	814 psig	
WC6	1125 psig	825 psig	
CF8M	1100 psig	792 psig	



Class 600 Check Valve

Bolted Cover, Swing Type Disc,
Threaded or Welded Seat Ring

Standard Compliance :

Basic Design : BS 1868

Face to Face Dimension : ANSI B16.10

End to End Dimension : ANSI B16.10

Flange End

2"-24" to ANSI B 16.5

>24" to MSS SP-44

to API 605 on request

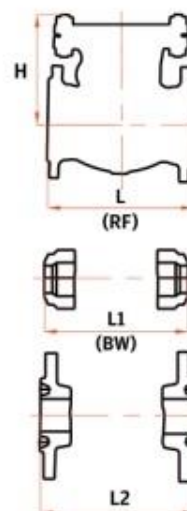
B.W.Ends to ANSI B.16.25

Shell Wall Thickness

2"-24" TO API 600

>24" to manufacturer's standard

Manufacturing to NACE MR-01-75
on request



TEST PRESS RE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	2225 psig	1628 psig	
WC6	2250 psig	1650 psig	
CF8M	2175 psig	1584 psig	



ANSI 150												
Valve size in inches and mm	VALVE FLANGE DIMENSIONS – ASME B16.5 RF 150#								F TO F – ASME B16.10 150#			
	No. of Hole	Hole Dia.	Flange O.D	R.F. Dia	Flange Thickness With R.F. Height	P.C.D.	R.F. Height	Flange Port	F. TO F. GTV	F. TO F. GBV,LCV / SCV	F. TO F. BLV	
2" 50	4	19	152	92	16	120.7	2	50	178	203	178	
2½" 65	4	19	180	105	17.5	139.7	2	64	190.5	216	190.5	
3" 80	4	19	190	127	19	152.4	2	75	203.2	241.3	203.2	
4" 100	8	19	230	157	24	190.5	2	100	228.6	292.1	228.6	
5" 125	8	22	255	186	24	215.9	2	125	254	330	254	
6" 150	8	22	280	216	25.4	241.3	2	150	266.7	406.4/356	266.7	
8" 200	8	22	345	270	28.5	298.5	2	200	292.1	495.3	292.1	
10" 250	12	25	406	324	30.3	362	2	250	330.2	622.3	330.2	
12" 300	12	25	485	381	32	431.8	2	300	355.6	698.5	355.6	
14" 350	12	29	535	413	34	476.3	2	337	381	787	-	
16" 400	16	29	595	470	35.5	539.8	2	387	406	914	-	
18" 450	16	32	635	533	39	577.9	2	438	432	-/978	-	
20" 500	20	32	700	584	42	635	2	489	457	-	-	
24" 600	20	35	815	692	47	749.3	2	590	508	-/1295	-	

TOLERANCES: F TO F = ±2mm UP TO 10" & ±3mm FOR 12" & LARGER
 F/T = +3mm, -0.0mm UP TO 18" & +5mm, -0.0mm FOR 20" & LARGER
 F/D = ±1.5mm, PCD = ±1.5mm, R/F = ±0.5mm

ALL DIMENSIONS ARE IN mm

ANSI 300												
Valve size in inches and mm	VALVE FLANGE DIMENSIONS – ASME B16.5 RF 300#								F TO F – ASME B16.10 300#			
	No. of Hole	Hole Dia.	Flange O.D	R.F. Dia	Flange Thickness With R.F. Height	P.C.D.	R.F. Height	Flange Port	F. TO F. GTV	F. TO F. GBV,LCV /SCV	F. TO F. BLV	
2" 50	8	19	165	92	22.4	127	2	50	216	266.7	216	
2½" 65	8	22.2	190	105	25.4	149.2	2	64	241.3	292.1	241.3	
3" 80	8	22.2	210	127	28.5	168.3	2	75	282.6	317.5	282.6	
4" 100	8	22.2	255	157.2	31.8	200	2	100	305	355.6	305	
5" 125	8	22.2	280	185.6	35	235	2	125	381	400	381	
6" 150	12	22.2	320	216	36.6	270	2	150	403.2	444.5	403.2	
8" 200	12	25.4	381	269.7	41.2	330.2	2	200	419.1	558.8/533.4	419.1	
10" 250	16	28.4	445	324	47.8	387.4	2	250	457.2	622.3	457.2	
12" 300	16	32	520	381	50.8	450.8	2	300	501.65	711.2	501.65	
14" 350	20	32	585	413	54	514.4	2	337	571.5	-/838.2	-	
16" 400	20	35	650	470	57.2	571.5	2	387	838.2	-/863.6	-	
18" 450	24	35	710	533	60.4	628.6	2	432	914	-/978	-	
20" 500	24	35	775	584	63.5	685.8	2	482.6	990.6	-/1016	-	
24" 600	24	41.2	915	692	70	812.8	2	584.2	1092.2	-/1346.2	-	

TOLERANCES: F TO F = ±2mm UP TO 10" & ±3mm FOR 12" & LARGER
 F/T = +3mm, -0.0mm UP TO 18" & +5mm, -0.0mm FOR 20" & LARGER
 F/D = ±1.5mm, PCD = ±1.5mm, R/F = ±0.5mm

ALL DIMENSIONS ARE IN mm

ANSI 600												
Valve size in inches and mm	VALVE FLANGE DIMENSIONS – ASME B16.5 RF 600#								F TO F – ASME B16.10 600#			
	No. of Hole	Hole Dia.	Flange O.D	R.F. Dia	Flange Thickness Without R.F. Height	P.C.D.	R.F. Height	Flange Port	F. TO F. GTV	F. TO F. GBV,LCV /SCV	F. TO F. BLV	
2" 50	8	19	165	92	25.4	127	7	50	292	292	292	
2½" 65	8	22.2	190	105	28.6	149.4	7	64	330	330	330	
3" 80	8	22.2	210	127	32	168.3	7	75	356	356	356	
4" 100	8	25.4	275	157.3	38.1	216	7	100	432	432	432	
5" 125	8	28	330	185.6	44.5	266.7	7	125	508	508	508	
6" 150	12	28	355	215.9	47.8	292	7	150	559	559	559	
8" 200	12	32	420	269.8	55.6	349.2	7	200	660	660	660	
10" 250	16	35	510	324	63.5	432	7	247.7	787	787	787	
12" 300	20	35	560	381	66.7	489	7	298.5	838	838	838	
14" 350	20	38	605	412.8	70	527	7	326.9	889	-/889	-	
16" 400	20	41.2	685	469.9	76.2	603.2	7	374.7	991	-/991	-	
18" 450	20	44.5	745	533.4	82.6	654	7	419.1	1092	-/1092	-	
20" 500	24	44.5	815	584.2	88.9	724	7	463.6	1194	-/1194	-	
24" 600	24	50.8	940	692.2	101.6	838.2	7	558.8	1397	-/1397	-	

TOLERANCES: F TO F = ±2mm UP TO 10" & ±3mm FOR 12" & LARGER
 F/T = +3mm, -0.0mm UP TO 18" & +5mm, -0.0mm FOR 20" & LARGER
 F/D = ±1.5mm, PCD = ±1.5mm, R/F = ±0.5mm

ALL DIMENSIONS ARE IN mm

PRESSURE - TEMPERATURE RATINGS



As Per Asme B-16.34

Class	Temp °F	A216 WCB A105 & LF2	A352 LCC	A217 WC6 A182 F11	A217 WC9 A182 F22	A217 C5 A182 F5	A217 C12 A182 F9	A351 CF8 A182 F304	A351 CF8M A182 F316	A352 CN7M
150	-20 to 100	285	290	290	290	290	290	290	275	230
	200	260	260	260	260	260	260	260	230	200
	300	230	230	230	230	230	230	230	205	180
	400	200	200	200	200	200	200	200	190	160
	500	170	170	170	170	170	170	170	170	150
	600	140	140	140	140	140	140	140	140	140
	650	125	125	125	125	125	125	125	125	
	700	110	110	110	110	110	110	110	110	
	750	95	95	95	95	95	95	95	95	
	800	80	80	80	80	80	80	80	80	
	850	65	65	65	65	65	65	65	65	
	900	50	50	50	50	50	50	50	50	
	950	35	35	35	35	35	35	35	35	
	1000	20	20	20	20	20	20	20	20	
	1050			20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	
	1100			20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	
	1150			20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	20 (a)	
	1200			15 (a)	15 (a)	15 (a)	20 (a)	20 (a)	20 (a)	
	1250							20 (a)	20 (a)	
	1300							20 (a)	20 (a)	
	1350							20 (a)	20 (a)	
	1400							20 (a)	20 (a)	
	1450							20 (a)	20 (a)	
	1500							15 (a)	15 (a)	

Class	Temp °F	A216 WCB A105 & LF2	A352 LCC	A217 WC6 A182 F11	A217 WC9 A182 F22	A217 C5 A182 F5	A217 C12 A182 F9	A351 CF8 A182 F304	A351 CF8M A182 F316	A352 CN7M
300	-20 to 100	740	750	750	750	750	750	720	720	600
	200	680	750	750	750	750	750	600	620	520
	300	655	730	720	730	730	730	540	560	465
	400	635	705	695	705	705	705	495	515	420
	500	605	665	665	665	665	665	465	480	390
	600	570	605	605	605	605	605	440	450	360
	650	550	590	690	590	590	590	430	440	
	700	530	555	670	570	570	570	420	435	
	750	505	505	630	530	530	530	415	425	
	800	410	410	510	510	510	510	405	420	
	850	320	320	485	485	485	485	395	420	
	900	230	225	450	450	375	450	390	515	
	950	135	135	320	385	275	375	380	385	
	1000	85	85	215	265	200	255	355	365	
	1050			145	175	145	170	325	360	
	1100			95	110	100	115	255	305	
	1150			65	70	60	75	205	235	
	1200			40	40	35	50	165	185	
	1250							135	145	
	1300							115	115	
	1350							95	95	
	1400							75	75	
	1450							60	60	
	1500							40	40	

Class	Temp °F	A216 WCB A105 & LF2	A352 LCC	A217 WC6 A182 F11	A217 WC9 A182 F22	A217 C5 A182 F5	A217 C12 A182 F9	A351 CF8 A182 F304	A351 CF8M A182 F316	A352 CN7M
600	-20 to 100	1480	1500	1500	1500	1500	1500	1440	1440	1200
	200	1360	1500	1500	1500	1500	1500	1200	1240	1035
	300	1310	1455	1445	1455	1455	1455	1075	1120	930
	400	1265	1405	1385	1410	1410	1410	995	1025	845
	500	1205	1330	1330	1330	1330	1330	930	955	780
	600	1135	1210	1210	1210	1210	1210	885	900	720
	650	1100	1175	1175	1175	1175	1175	865	885	
	700	1060	1110	1135	1135	1135	1135	845	870	
	750	1015	1015	1065	1065	1065	1065	825	855	
	800	825	825	1015	1015	1015	1015	810	845	
	850	640	640	975	975	975	975	790	835	
	900	460	445	900	900	745	900	780	830	
	950	275	275	640	755	550	755	765	775	
	1000	170	170	430	535	400	505	710	725	
	1050			290	350	290	345	650	720	
	1100			190	220	200	225	515	610	
	1150			130	135	125	150	410	475	
	1200			80	80	70	105	330	370	
	1250							265	295	
	1300							225	235	
	1350							185	190	
	1400							150	150	
	1450							115	115	
	1500							85	85	



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