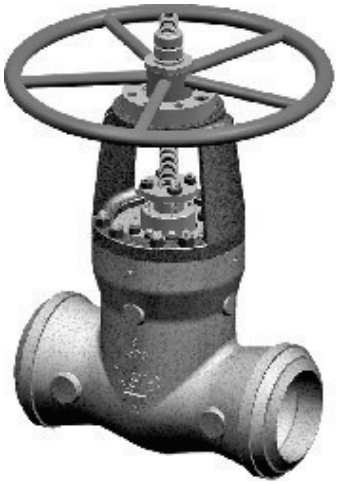
SICCA 900-2500 GTC



Type GTC

Gate Valve
Cast Steel, Pressure seal Bonnet
Butt weld ends

2" - 24" (50-600 mm)
Class 900, 1500, 2500
Design in accordance with ASME B16.34

Applications

- Power stations, general industry, process engineering
- For water, steam, gas, oil & other non-aggressive media
- Further applications on request

Operating Data

- Pressure up to 431 bar (6250 psi)
- Temperature up to +650°C / 1200°F
- Minimum temperature is 0°C (less than 0°C on request)
- Pressure-temperature ratings as per ASME B 16.34, Standard class

Materials

- ASTM A 216 WCB from 0°C to 425°C
- ASTM A 217 WC6/WC9 from 0°C to 593°C
- ASTM A 217 C12A from 0°C to 650°C
- ASTM A216 WCC from 0°C to 425°C

Design

- As per ASME B 16.34
- Pressure Seal Bonnet Design
- Stellite hard-faced Seats & Disc surface
- Graphite gaskets & packings with Braided wiping rings
- Internal pressure relieving on disc
- Direct retrofitting of Actuator
- Reduced bore
- Double wedge design
- The Valves meet the safety requirement of the Pressure Equipment Directive 97/23/EC(PED) of annex I for fluids of the groups 1 and 2.(Standard class to B16.34)

* Rating special class / standard class

Variants on Request

- Bypass Arrangement
- Gear / Electrical Actuator
- Other pressure relief arrangements
- Full bore execution
- Position indicator
- Locking Arrangement
- Stem Protector
- Parallel slide double disc gate

Remarks :

(Type Series Booklet References)

SICCA 800-4500 GTF / GLF / PCF	: 7240.1/06-16
SICCA 900-2500 GLC	: 7242.2/06-16
SICCA 900-2500 SCC	: 7243.2/06-16
SICCA 150-600 GTC	: 7244.2/06-16
SICCA 150-600 GLC	: 7245.2/06-16
SICCA 150-600 SCC	: 7246.2/06-16
Operating instructions no	: 0500.80/07-18 G3

On all enquiries / orders please specify :

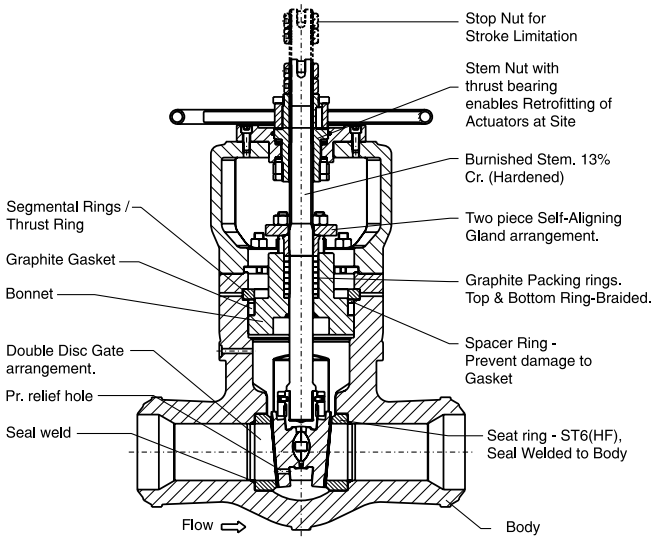
1. Type
2. ASME Pressure class
3. Size
4. Design pressure/temperature
5. Operating pressure
6. Operating temperature
7. Differential pressure
8. Material of construction
9. Flow medium
10. Flow rate Min./Max.
11. Type of end connection
12. Pipe Schedule Inlet/ Outlet Dia
13. Variants
14. Type Series Booklet no.
15. Valve data sheet (if applicable)

When ordering spares, Indicate Serial number of Valve.

CE

KSB

Product features to our customer benefit (class 900-2500)



- Valves meets ASME B 16.34 requirements
- Unique Seat design ensures low operating torque
- Compact Yoke design ensures low valve weight
- Stop nut prevents over tightening of double disc gate
- Designed to retrofit valve with Actuator at site without disassembly of pressure retaining parts

Flow Seal

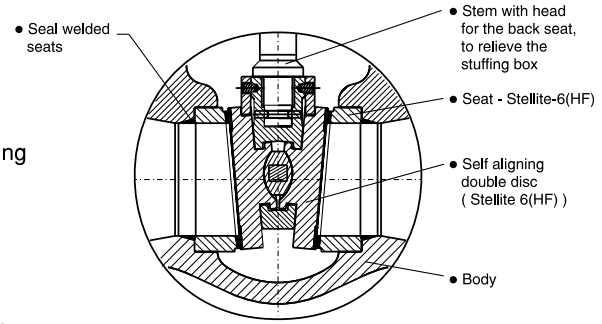
- Fully stellited Body & Disc seats
- Seat rings - seal welded to body
- Lapped Seat & Disc faces for leak tightness
- Streamlined flow path ensures minimum pressure drop

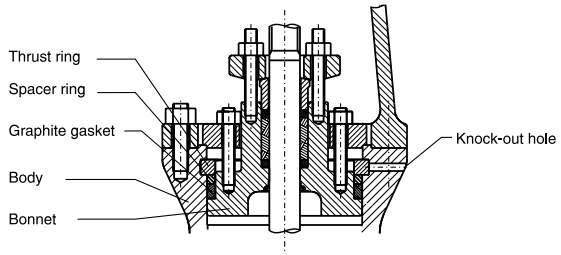
Disc Design

- Self aligning double disc arrangement ensures perfect seating
- Wedging action ensures leak tightness
- Leak tightness at low & high differential pressure
- Extended disc wear life by possibility of shim addition

Stem Wedge Connection

- Strong stem-disc joint capable of withstanding higher operating forces

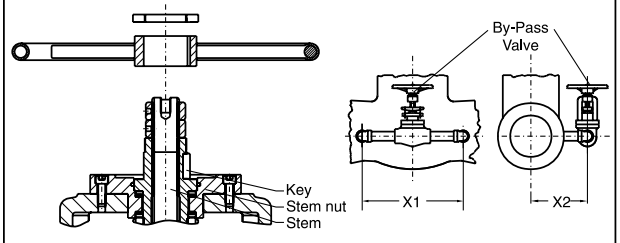




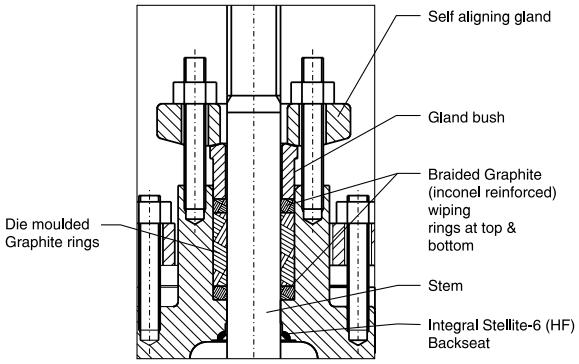
Pressure Seal Bonnet

- Die moulded graphite gasket
- Segmental ring arrangement with knock out hole ensures easy disassembly

Retrofitting of Actuator & By-pass Execution

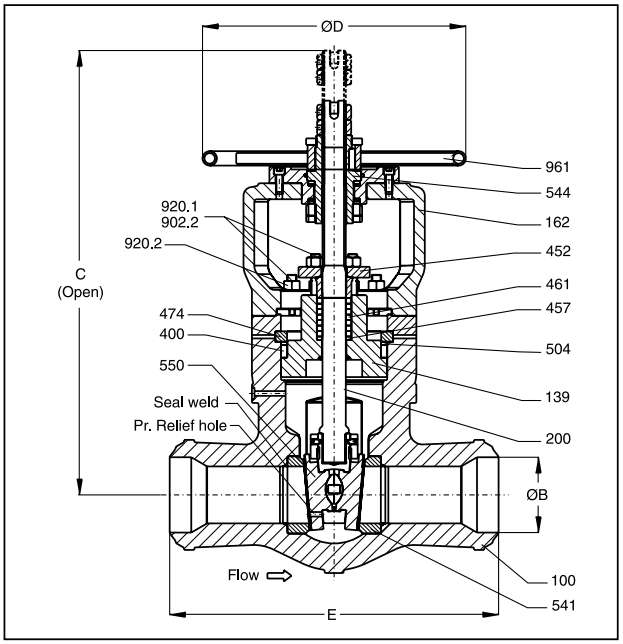


Mount Actuator with non-thrust base. Type `E' or `B' after removing handwheel.



Gland Seal

- Die moulded graphite rings ensures effective sealing to atmosphere
- Top & bottom rings are braided graphite and inconel reinforced
- Braided rings offer smooth wiping action thereby arresting graphite depletion
- Smooth finished & polished stem and smooth stuffing box surfaces improve gland sealing life
- Two piece self aligning gland arrangement
- Integral hard faced back seat for maximum service life



Design Specifications (class 900-2500)

General valve design & pressure, temperature rating	:	ASME B 16.34
Butt weld end design	:	ASME B 16.25
End to end dimension	:	ASME B 16.10
Testing	:	API 598

Dimensions in mm **(class 900-2500)**

Class 900 RB

Size (Inch)	3x2x3	4x3x4	5x4x5	6x4x6	8x6x8	10x8x10	12x10x12
E	216	305	356	356	508	660	787
ØB*	73.5	92	116	139.5	182.5	230	273
C (max)	555	645	745	725	885	1045	1295
ØD	254	356	457	457	610	610	610

*** Schedule 80 up to 3". Schedule 120 for 4" and above. Alternate schedule on request.**

Class 900 FB

Size (Inch)	2"	3"	4"	6"	8"	10"	12"
E	216	305	356	508	660	787	914
ØB*	49.5	73.5	92	139.5	182.5	230	273
C (max)	555	645	725	885	1045	1295	1435
ØD	254	356	457	610	610	610	610

*** Schedule 80 up to 3". Schedule 120 for 4" and above. Alternate schedule on request.**

Class 1500 RB

Size (Inch)	3x2x3	4x3x4	5x4x5	6x4x6	8x6x8	10x8x10	12x10x12	14x12x14	16x14x16	18x16x18	20x18x20	24x20x24
E	216	305	406	406	559	711	864	991	1067	1194	1346	1473
ØB*	66.5	87.5	109.5	131.5	173	216	257	284	325.5	366.5	408	490.5
C (max)	555	655	730	730	890	1065	1305	1505	1635	1830	2030	2210
ØD	254	356	356	457	610	610	610	**	**	**	**	**

*** Schedule 160. Alternate schedule on request.**

Class 1500 FB

Size (Inch)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
E	216	305	406	559	711	864	991	1067	1194	1346	1473
ØB*	43	66.5	87.5	131.5	173	216	257	284	325.5	366.5	408
C (max)	555	655	730	985	1050	1305	1505	1635	1820	2030	2210
ØD	254	356	457	610	610	610	**	**	**	**	**

*** Schedule 160. Alternate schedule on request. ** Mandatory Gear Box.**

Class 2500 RB

Size (Inch)	3x2x3	4x3x4	5x4x5	6x4x6	8x6x8	10x8x10	12x10x12	14x12x14	16x14x16	18x16x18	20x18x20	24x20x24
E	279	368	457	457	610	762	914	1041	1118	1245	1397	1575
ØB*	58.5	80	103	124.5	174.5	216	257	284	325.5	366.5	408	490.5
C (max)	550	655	705	705	940	1115	1250	1430	1635	1790	1975	2180
ØD	254	457	457	457	610	610	**	**	**	**	**	**

*** Schedule XXS up to 6". Schedule 160 for 8" and above. Alternate schedule on request.**
**** Mandatory Gear Box.**

Class 2500 FB

Size (Inch)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"
E	279	368	457	610	762	914	1041	1118	1245	1397	1575
ØB*	38	58.5	80	124.5	174.5	216	257	284	325.5	366.5	408
C (max)	550	655	705	950	1115	1250	1430	1635	1790	1975	2175
ØD	254	457	457	610	610	**	**	**	**	**	**

*** Schedule XXS up to 6". Schedule 160 for 8" and above. Alternate schedule on request.**
**** Mandatory Gear Box.**

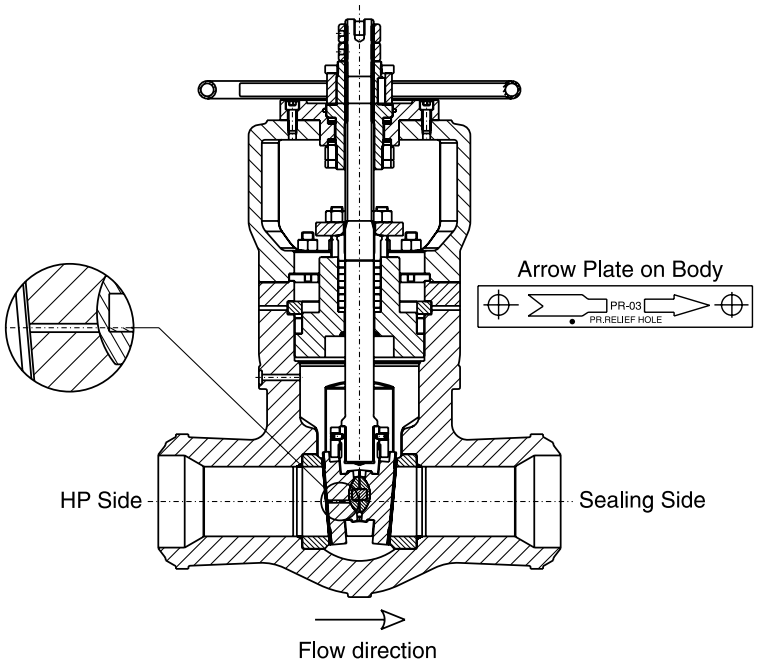
Materials (class 900-2500)

Part No.	Description	Material				
100	Body	A 216-WCB	A 217-WC6	A 217-WC9	A 217-C12A	A 216-WCC
139	Bonnet[1)]	A 216-WCB+ST6 / A 105+ST6	A 217-WC6+ST6 / A 182-F11+ST6	A 217-WC9+ST6 / A 182-F22+ST6	A 217-C12A+ST6 / A 182-F91+ST6	A 216 WCC+ST6 A 182-F11+ST6
162	Yoke	A 216-WCB	A 217-WCB	A 216-WCB	A 217-WC9	A 216 WCC
200	Stem	A 479-410-2	A 479-410-2	A 479-410-2	A 479-XM19-A	A 479-410-2
324	Thrust bearing	FAG/EQUIVALENT	FAG/EQUIVALENT	FAG/EQUIVALENT	FAG/EQUIVALENT	FAG/EQUIVALENT
367	Disc holder	A 216-WCB	A 217-WC6	A 217-WC9	A 217-C12A	A 216-WCC
400	Gasket	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
452	Gland flange	IS 2002-2	IS 2002-2	IS 2002-2	A 182-F22 CL3	IS 2002-2
456	Gland bush	A 276-410-A	A 276-410-A	A 276-410-A	A 276-410-A	A 276-410-A
457	Packing ring	A 439-D2	A 439-D2	A 439-D2	A 439-D2	A 439-D2
461	Gland packing	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
474	Thrust ring	A 336-F91	A 336-F91	A 336-F91	A 336-F91	A336-F91
504	Spacer ring	A 182-F22 CL3	A 182-F22 CL3	A 182-F22 CL3	A 182-F22 CL3	A 182-F22 CL3
541	Seat ring	A 105+ST6	A 182-F11+ST6	A 182-F22+ST6	A 182-F91+ST6	A 182-F11+ST6
544	Stem nut	AL. BRONZE	AL. BRONZE	AL. BRONZE	AL. BRONZE	AL. BRONZE
550	Disc[2)]	A 216-WCB+ST6 / A 105+ST6	A 217-WC6+ST6 / A 182-F11+ST6	A 217-WC9+ST6 / A 182-F22+ST6	A 217-C12A+ST6 / A 182-F91+ST6	A 216 WCC+ST6 A 182-F11+ST6
583	Bonnet retainer	IS 2002-2 (A 516-60)	A 182-F22 CL3	A 182-F22 CL3	A 182-F22 CL3	IS 2002-2
701.1	By-pass tube	A 106-B	A 335-P22	A 335-P22	A 335-P91	A 335-P22
741.1	By-pass valve	A 105	A 182-F22	A 182-F22	A 182-F91	A 182-F22
902.1 / .2	Stud	A 193-B7	A 193-B16	A 193-B16	A 193-B16	A 193-B16
920.1 / .2	Hex. nut	A 194-2H	A 194-4/7	A 194-4/7	A 194-4/7	A 194-4/7
961	Handwheel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

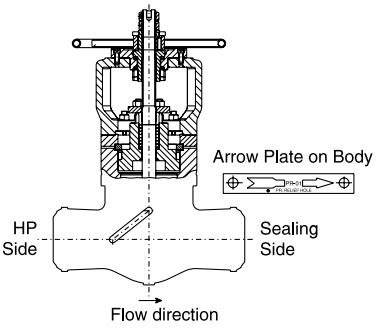
1) Forging Upto 8" RB
2) Forging Upto 10" RB

Pressure Relief Arrangement :

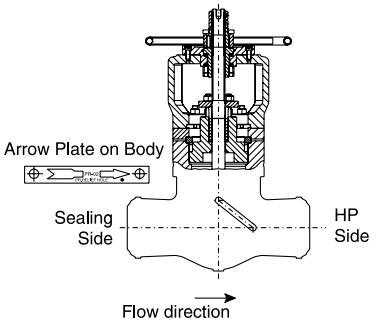
Standard Pressure Relief Arrangement
Execution Ref. No. PR-03



PR-01
External Pipe Connecting Bonnet cavity at 'K' side,
Valve - Unidirectional

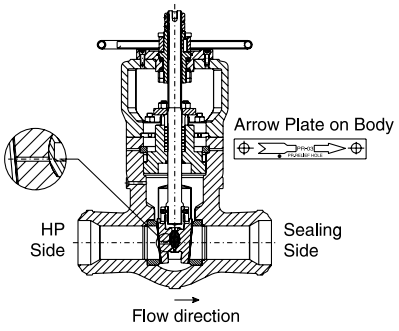


PR-02
External Pipe Connecting Bonnet cavity at 'B' side,
Valve - Unidirectional

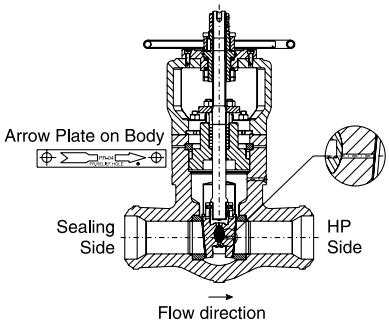


Rest shown here are optional arrangements

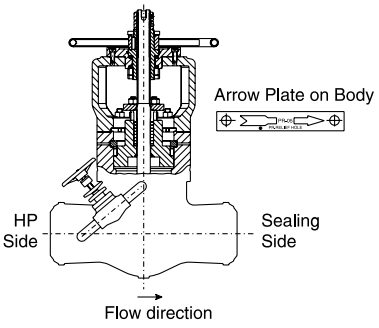
PR-03
Internal Pr. Relief Arrangement
Pr. Relief Hole on Disc at 'K' side,
Valve - Unidirectional



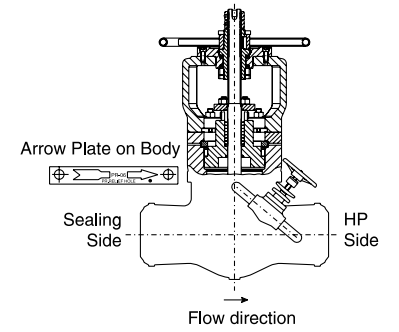
PR-04
Internal Pr. Relief Arrangement
Pr. Relief Hole on Disc at 'B' side,
Valve - Unidirectional



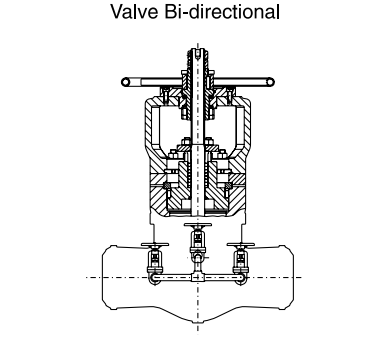
PR-05
External Pr. Relief pipe with interconnection valve at 'K' side,
Valve - Unidirectional



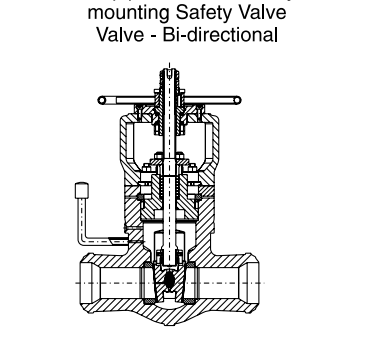
PR-06
External Pr. Relief pipe with interconnection valve at 'B' side,
Valve - Unidirectional



PR-07
External Pr. Relief Arrangement
Decompression system
Valve Bi-directional



PR-08
External Pr. Relief Arrangement with a Stub pipe at bonnet cavity for mounting Safety Valve
Valve - Bi-directional



Note : 'K' side & 'B' side indicated above are with respect to as cast "KSB" mark on the valve body.

Testing

Test / Test pressure	#900		#1500		#2500		Testing medium
	kg/cm^2	psi	kg/cm^2	psi	kg/cm^2	psi	
Shell	238	3375	396	5625	660	9375	Water
Seat / Back Seat	175	2475	291	4125	484	6875	
Seat	6	85	6	85	6	85	Air

Pressure Temperature Rating - Standard Class

Rating for Group 1.1 Material : A 216 Gr. WCB (1)

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2220.0	156.1	3705.0	260.5	6170.0	433.8
200	93.3	2035.0	143.1	3395.0	238.7	5655.0	397.6
300	148.9	1965.0	138.2	3270.0	229.9	5450.0	383.2
400	204.4	1900.0	133.6	3170.0	222.9	5280.0	371.2
500	260.0	1810.0	127.3	3015.0	212.0	5025.0	353.3
600	315.6	1705.0	119.9	2840.0	199.7	4730.0	332.6
650	343.3	1650.0	116.0	2745.0	193.0	4575.0	321.7
700	371.1	1590.0	111.8	2665.0	187.4	4425.0	311.1
750	398.9	1520.0	106.9	2535.0	178.2	4230.0	297.4
800	426.7	1235.0	86.8	2055.0	144.5	3430.0	241.2
850	454.4	955.0	67.1	1595.0	112.1	2655.0	186.7
900	482.2	690.0	48.5	1150.0	80.9	1915.0	134.6
950	510.0	410.0	28.8	685.0	48.2	1145.0	80.5
1000	537.8	255.0	17.9	430.0	30.2	715.0	50.3

1) Permissible, but not recommended for prolonged use above 800°F

1 Kg/cm^2 = 0.981 Bar

Rating for Group 1.9 Material : A 217 Gr. WC6 (1) (2)

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2165.0	152.2	3610.0	253.8	6015.0	422.9
400	204.4	2080.0	146.2	3465.0	243.6	5775.0	406.0
500	260.0	1995.0	140.3	3325.0	233.8	5540.0	389.5
600	315.6	1815.0	127.6	3025.0	212.7	5040.0	354.3
650	343.3	1765.0	124.1	2940.0	206.7	4905.0	344.9
700	371.1	1705.0	119.9	2840.0	199.7	4730.0	332.6
750	398.9	1595.0	112.1	2660.0	187.0	4430.0	311.5
800	426.7	1525.0	107.2	2540.0	178.6	4230.0	297.4
850	454.4	1460.0	102.6	2435.0	171.2	4060.0	285.4
900	482.2	1350.0	94.9	2245.0	157.8	3745.0	263.3
950	510.0	955.0	67.1	1595.0	112.1	2655.0	186.7
1000	537.8	650.0	45.7	1080.0	75.9	1800.0	126.6
1050	565.6	430.0	30.2	720.0	50.6	1200.0	84.4
1100	593.3	290.0	20.4	480.0	33.7	800.0	56.2
1150	621.1	195.0	13.7	325.0	22.8	545.0	38.3
1200	648.9	125.0	8.8	205.0	14.4	345.0	24.3

1) Use Normalised and tempered material only.
2) Not to be used over 1100°F

Rating for Group 1.10 Material : A 217 Gr. WC9 (1) (2)

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2185.0	153.6	3640.0	255.9	6070.0	426.8
400	204.4	2115.0	148.7	3530.0	248.2	5880.0	413.4
500	260.0	1995.0	140.3	3325.0	233.8	5540.0	389.5
600	315.6	1815.0	127.6	3025.0	212.7	5040.0	354.3
650	343.3	1765.0	124.1	2940.0	206.7	4905.0	344.9
700	371.1	1705.0	119.9	2840.0	199.7	4730.0	332.6
750	398.9	1595.0	112.1	2660.0	187.0	4430.0	311.5
800	426.7	1525.0	107.2	2540.0	178.6	4230.0	297.4
850	454.4	1460.0	102.6	2435.0	171.2	4060.0	285.4
900	482.2	1350.0	94.9	2245.0	157.8	3745.0	263.3
950	510.0	1160.0	81.6	1930.0	135.7	3220.0	226.4
1000	537.8	800.0	56.2	1335.0	93.9	2230.0	156.8
1050	565.6	525.0	36.9	875.0	61.5	1454.0	102.2
1100	593.3	330.0	23.2	550.0	38.7	915.0	64.3
1150	621.1	205.0	14.4	345.0	24.3	570.0	40.1
1200	648.9	125.0	8.8	205.0	14.4	345.0	24.3

1) Use Normalised and tempered material only.
2) Not to be used over 1100°F

Rating for Group 1.15 Material : A 217 Gr. C12A

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2185.0	153.6	3640.0	255.9	6070.0	426.8
400	204.4	2115.0	148.7	3530.0	248.2	5880.0	413.4
500	260.0	1995.0	140.3	3325.0	233.8	5540.0	389.5
600	315.6	1815.0	127.6	3025.0	212.7	5040.0	354.3
650	343.3	1765.0	124.1	2940.0	206.7	4905.0	344.9
700	371.1	1705.0	119.9	2840.0	199.7	4730.0	332.6
750	398.9	1595.0	112.1	2660.0	187.0	4430.0	311.5
800	426.7	1525.0	107.2	2540.0	178.6	4230.0	297.4
850	454.4	1460.0	102.6	2435.0	171.2	4060.0	285.4
900	482.2	1350.0	94.9	2245.0	157.8	3745.0	263.3
950	510.0	1160.0	81.6	1930.0	135.7	3220.0	226.4
1000	537.8	1090.0	76.6	1820.0	128.0	3030.0	213.0
1050	565.6	1080.0	75.9	1800.0	126.6	3000.0	210.9
1100	593.3	905.0	63.6	1510.0	106.2	2515.0	176.8
1150	621.1	670.0	47.1	1115.0	78.4	1855.0	130.4
1200	648.9	430.0	30.2	720.0	50.6	1200.0	84.4

Pressure Temperature Rating - Standard Class

Rating for Group 1.2 Material : A 216 WCC

Temperature		# 900		# 1500		# 2500	
^{0}F	^{0}C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	0 to 38	2249.5	158.2	3750.7	263.7	6249.7	439.4
200	100	2242.3	157.6	3736.2	262.7	6227.9	437.9
300	150	2182.8	153.5	3637.5	255.7	6064.0	426.3
400	200	2114.6	148.7	3527.3	248.0	5879.8	413.4
500	250	2016.0	141.7	3362.0	236.4	5601.4	393.8
600	325	1798.5	126.4	2996.5	210.7	4993.6	351.1
650	350	1741.9	122.5	2902.2	204.0	4837.0	340.1
700	375	1646.2	115.7	2744.1	192.9	4573.0	321.5
750	400	1511.3	106.3	2517.9	177.0	4195.9	295.0
800	425	1251.7	88.0	2085.6	146.6	3476.6	244.4
850	450	1000.8	70.4	1667.9	117.3	2780.4	195.5
900	475	744.0	52.3	1238.6	87.1	2065.3	145.2
950	500	503.3	35.4	839.8	59.0	1399.6	98.4
1000	538	256.7	18.0	427.9	30.1	713.6	50.2

Pressure Temperature Rating - Special Class

Rating for Group 1.1 Material : A 216 Gr. WCB [1]

Temperature		# 900		# 1500		# 2500	
^{0}F	^{0}C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2220.0	156.1	3700.0	260.1	6170.0	117.4
400	204.4	2200.0	154.7	3665.0	257.7	6105.0	429.2
500	260.0	2200.0	154.7	3665.0	257.7	6105.0	429.2
600	315.6	2200.0	154.7	3665.0	257.7	6105.0	429.2
650	343.3	2145.0	150.8	3575.0	251.3	5960.0	419.0
700	371.1	2075.0	145.9	3455.0	242.9	5760.0	405.0
750	398.9	1905.0	133.9	3170.0	222.9	5285.0	371.6
800	426.7	1545.0	108.6	2570.0	180.7	4285.0	301.3
850	454.4	1195.0	84.0	1995.0	140.3	3320.0	233.4
900	482.2	860.0	60.5	1435.0	100.9	2395.0	168.4
950	510.0	515.0	36.2	855.0	60.1	1430.0	100.5
1000	537.8	320.0	22.5	535.0	37.6	895.0	62.9

1) Permissible, but not recommended for prolonged use above 800^{0}F

1 Kg/cm^2 = 0.981 Bar

Rating for Group 1.9 Material : A 217 Gr. WC6 [1] [2]

Temperature		# 900		# 1500		# 2500	
^{0}F	^{0}C	PSI	Kg/cm^2	PSI	Kg/cm^2	PSI	Kg/cm^2
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2250.0	158.2	3750.0	263.7	6250.0	439.4
400	204.4	2250.0	158.2	3750.0	263.7	6250.0	439.4
500	260.0	2250.0	158.2	3750.0	263.7	6250.0	439.4
600	315.6	2250.0	158.2	3750.0	263.7	6250.0	439.4
650	343.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
700	371.1	2200.0	154.7	3665.0	257.7	6110.0	429.6
750	398.9	2185.0	153.6	3645.0	256.3	6070.0	426.8
800	426.7	2160.0	151.9	3600.0	253.1	6000.0	421.8
850	454.4	2030.0	142.7	3385.0	238.0	5645.0	396.9
900	482.2	1760.0	123.7	2935.0	206.4	4895.0	344.2
950	510.0	1195.0	84.0	1995.0	140.3	3320.0	233.4
1000	537.8	810.0	56.9	1350.0	94.9	2250.0	158.2
1050	565.6	540.0	38.0	900.0	63.3	1500.0	105.5
1100	593.3	360.0	25.3	600.0	42.2	1000.0	70.3
1150	621.1	245.0	17.2	405.0	28.5	680.0	47.8
1200	648.9	155.0	10.9	255.0	17.9	430.0	30.2

1) Use Normalised and tempered material only.
2) Not to be used over 1100^{0}F

Pressure Temperature Rating - Special Class

Rating for Group 1.10 Material : A 217 Gr. WC9 (1) (2)

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm²	PSI	Kg/cm²	PSI	Kg/cm²
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2220.0	156.1	3695.0	259.8	6160.0	433.1
400	204.4	2185.0	153.6	3640.0	255.9	6065.0	426.4
500	260.0	2175.0	152.9	3620.0	254.5	6035.0	424.3
600	315.6	2165.0	152.2	3605.0	253.5	6010.0	422.5
650	343.3	2145.0	150.8	3580.0	251.7	5965.0	419.4
700	371.1	2120.0	149.1	3535.0	248.5	5895.0	414.5
750	398.9	2120.0	149.1	3535.0	248.5	5895.0	414.5
800	426.7	2120.0	149.1	3535.0	248.5	5895.0	414.5
850	454.4	2030.0	142.7	3385.0	238.0	5645.0	396.9
900	482.2	1800.0	126.6	3000.0	210.9	5000.0	351.5
950	510.0	1415.0	99.5	2360.0	165.9	3930.0	276.3
1000	537.8	1005.0	70.7	1670.0	117.4	2785.0	195.8
1050	565.6	655.0	46.1	1095.0	77.0	1820.0	128.0
1100	593.3	410.0	28.8	685.0	48.2	1145.0	80.5
1150	621.1	255.0	17.9	430.0	30.2	715.0	50.3
1200	648.9	155.0	10.9	255.0	17.9	430.0	30.2

1) Use Normalised and tempered material only.
2) Not to be used over 1100°F

Rating for Group 1.15 Material : A 217 Gr. C12A

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm²	PSI	Kg/cm²	PSI	Kg/cm²
-20 to 100	-29 to 38	2250.0	158.2	3750.0	263.7	6250.0	439.4
200	93.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
300	148.9	2250.0	158.2	3750.0	263.7	6250.0	439.4
400	204.4	2250.0	158.2	3750.0	263.7	6250.0	439.4
500	260.0	2250.0	158.2	3750.0	263.7	6250.0	439.4
600	315.6	2250.0	158.2	3750.0	263.7	6250.0	439.4
650	343.3	2250.0	158.2	3750.0	263.7	6250.0	439.4
700	371.1	2200.0	154.7	3665.0	257.7	6110.0	429.6
750	398.9	2185.0	153.6	3645.0	256.3	6070.0	426.8
800	426.7	2160.0	151.9	3600.0	253.1	6000.0	421.8
850	454.4	2030.0	142.7	3385.0	238.0	5645.0	396.9
900	482.2	1800.0	126.6	3000.0	210.9	5000.0	351.5
950	510.0	1415.0	99.5	2360.0	165.9	3930.0	276.3
1000	537.8	1260.0	88.6	2105.0	148.0	3505.0	246.4
1050	565.6	1260.0	88.6	2105.0	148.0	3505.0	246.4
1100	593.3	1130.0	79.4	1885.0	132.5	3145.0	221.1
1150	621.1	835.0	58.7	1395.0	98.1	2320.0	163.1
1200	648.9	540.0	38.0	900.0	63.3	1500.0	105.5

Pressure Temperature Rating - Special Class

Rating for Group 1.2 Material : A 216 WCC

Temperature		# 900		# 1500		# 2500	
°F	°C	PSI	Kg/cm²	PSI	Kg/cm²	PSI	Kg/cm²
-20 to 100	0 to 38	2249.5	158.2	3750.7	263.7	6249.7	439.4
200	100	2249.5	158.2	3750.7	263.7	6249.7	439.4
300	150	2249.5	158.2	3750.7	263.7	6249.7	439.4
400	200	2249.5	158.2	3750.7	263.7	6249.7	439.4
500	250	2249.5	158.2	3750.7	263.7	6249.7	439.4
600	325	2249.5	158.2	3750.7	263.7	6249.7	439.4
650	350	2223.4	156.3	3705.7	260.5	6175.7	434.2
700	375	2104.5	148.0	3508.5	246.7	5846.5	411.0
750	400	1888.4	132.8	3147.3	221.3	5246.0	368.8
800	425	1565.0	110.0	2607.8	183.3	4345.3	305.5
850	450	1251.7	88.0	2085.6	146.6	3475.1	244.3
900	475	784.7	55.2	1549.0	108.9	2581.7	181.5
950	500	629.5	44.3	1050.1	73.8	1750.6	123.1
1000	538	322.0	22.6	535.2	37.6	893.4	62.8

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