

Globe Valve

SICCA 900-2500 GLC

Class 900-2500
NPS 2-8 Inches

Type Series Booklet



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Type Series Booklet SICCA 900-2500 GLC

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Globe Valves

Globe Valves to ANSI/ASME with Gland Packing

SICCA 900-2500 GLC



Main applications

- Boiler feed applications
- Fossil-fuelled power stations
- Petrochemical industry
- Pipelines and tank farms
- Refineries
- Process engineering

Fluids handled

- Steam
- Fluids containing gas
- Condensate
- Oil
- Feed water
- Vacuum

Operating data

Operating properties

Characteristic	Value
Nominal pressure	Class 900 - 2500
Nominal size [inch]	NPS 2 - 8
Max. permissible pressure [bar]	431
Max. permissible pressure [psi]	6250
Min. permissible temperature [°C]	≥ 0
Max. permissible temperature [°C]	≤ +650
Min. permissible temperature [°F]	≥ 0
Max. permissible temperature [°F]	≤ +1200

Selection as per pressure/temperature ratings (⇒ Page 5)

Body materials

Overview of available materials

Material	Temperature limit	
	[°C]	[°F]
ASTM A216 WCB	≤ 425	≤ 800
ASTM A216 WCC	≤ 425	≤ 800
ASTM A217 WC6	≤ 593	≤ 1100
ASTM A217 WC9	≤ 593	≤ 1100
ASTM A217 C12A	≤ 650	≤ 1200

Design details

Design

- Globe valve to ASME B16.34
- Cast steel body
- Straight-way Y-valve
- Seat/disc interface made of wear-resistant and corrosion-proof Stellite
- Pressure seal design
- Outside screw
- Outside yoke
- Non-rotating stem
- Rising stem
- Non-rising handwheel
- Graphite gaskets and graphite packing with braided packing end rings offering wiping action
- Butt weld ends
- "Special Class" version
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.
Only for Standard Class
- The valves meet the requirements of the Indian Boiler Regulations 1950.

Variants

- Position indicator
- Locking device
- Bypass
- Stem protecting tube
- Actuator can be retrofitted directly after handwheel has been removed.
- Electric actuators
- Gearboxes
- Limit switches
- Drain plug
- Drain branch

Product benefits

- Long service life and high functional reliability
 - Two-piece self-aligning gland follower ensures even compression of packing rings.
 - Inconel-reinforced braided packing end rings offer smooth wiping action and prevent extrusion of graphite.
 - Stellite 6 hard-faced body seat ensures high wear resistance.
 - Burnished stem and smooth stuffing box surfaces extend the service life of the gland packing.
 - Rotating, self-aligning valve disc ensures reliable function.
 - Low actuating torque due to rolling element bearing.
- Additional features ensure safe sealing to atmosphere:
 - Additional safety and blow-out protection by standard back seat.
 - Fully confined cover gasket ensures leak-proof joint.
 - Die-formed endless graphite packing rings reliably seal the stem passage.

- Reliable, tight shut-off
 - Zero leakage thanks to perfect contact at seat/disc interface.
 - Streamlined flow path minimises pressure losses.
- Economic benefits

4. Design pressure
5. Design temperature
6. Operating pressure
7. Operating temperature
8. Differential pressure
9. Material
10. Fluid handled
11. Flow rate
12. Pipe connection
13. Pipe schedule
14. Variants
15. Reference number

Related documents

Information/documents

Document	Reference number
Type series booklet SICCA 150-600 GLC	7245.1
Operating manual	0500.80

Purchase order specifications

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Class
3. Nominal size

Pressure/temperature ratings

Permissible operating pressures [bar] (in acc. with ASME B16.34 Standard Class)

Class	Material	[°C]																	
		-29 to +38	93	149	204	260	316	343	371	399	427	454	482	510	538	566	593	621	649
900	A216 WCB ¹⁾	153	140	136	131	125	118	114	110	105	85	66	48	28	18	-	-	-	-
1500		256	234	226	219	208	196	189	184	175	142	110	79	47	30	-	-	-	-
2500		425	390	376	364	347	326	315	305	292	237	183	132	79	49	-	-	-	-
900	A216 WCC	155	155	150	145	137	125	121	114	104	85	65	46	28	17	-	-	-	-
1500		258	258	251	242	229	208	202	191	174	141	110	76	47	29	-	-	-	-
2500		431	431	418	404	382	347	338	319	291	236	183	127	79	49	-	-	-	-
900	A217 WC6 ²⁾³⁾	155	155	149	143	138	125	122	118	110	105	101	93	66	45	30	20	13	9
1500		259	259	249	239	229	209	203	196	183	175	168	155	110	75	50	33	22	14
2500		431	431	415	398	382	348	338	326	305	292	280	258	183	124	83	55	38	24
900	A217 WC9 ²⁾³⁾	155	155	151	146	138	125	122	118	110	105	101	93	80	55	36	23	14	9
1500		259	259	251	243	229	209	203	196	183	175	168	155	133	92	60	38	24	14
2500		431	431	419	405	382	348	338	326	305	292	280	258	222	154	100	63	39	24
900	A217 C12A	155	155	151	146	138	125	122	118	110	105	101	93	80	75	75	62	46	30
1500		259	259	251	243	229	209	203	196	183	175	168	155	133	126	124	104	77	50
2500		430	431	419	405	382	348	338	326	305	292	280	258	222	209	207	173	128	83

Permissible operating pressures [bar] (in acc. with ASME B16.34 Special Class)

Class	Material	[°C]																	
		-29 to +38	93	149	204	260	316	343	371	399	427	454	482	510	538	566	593	621	649
900	A216 WCB ¹⁾	155	155	153	152	152	152	148	143	131	107	82	59	35	22	-	-	-	-
1500		259	259	255	253	253	253	247	238	218	177	138	99	59	37	-	-	-	-
2500		430	431	425	421	421	421	411	397	364	295	229	165	99	62	-	-	-	-
900	A216 WCC	155	155	155	155	155	155	155	147	131	106	82	57	35	22	-	-	-	-
1500		258	258	258	258	258	258	258	245	218	177	137	96	59	36	-	-	-	-
2500		431	431	431	431	431	431	431	409	364	295	229	160	98	61	-	-	-	-
900	A217 WC6 ²⁾³⁾	155	155	155	155	155	155	155	152	151	149	140	121	82	56	37	25	17	11
1500		259	259	259	259	259	259	259	253	251	248	233	202	138	93	62	41	28	18
2500		431	431	431	431	431	431	431	421	419	414	389	338	229	155	103	69	47	30
900	A217 WC9 ²⁾³⁾	155	155	153	151	150	149	148	146	146	146	140	124	98	69	45	28	18	11
1500		259	259	255	251	250	249	247	244	244	244	233	207	163	115	76	47	30	18
2500		431	431	425	418	416	414	411	406	406	406	389	345	271	192	126	79	49	30
900	A217 C12A	155	155	155	156	155	155	155	152	151	149	140	124	98	87	87	78	58	37
1500		259	259	259	259	259	259	259	253	251	248	233	207	163	145	145	130	96	62
2500		431	431	431	431	431	431	431	421	419	414	389	345	271	242	242	217	160	103

- 1) Permissible but not recommended for prolonged use above 427 °C (800 °F).
- 2) Use normalised and tempered materials only.
- 3) Cannot be used for temperatures above 593 °C (1100 °F)

Permissible operating pressures [psi] (in acc. with ASME B16.34 Standard Class)

Class	Material	[°F]																	
		-20 to +100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
900	A216 WCB ¹⁾	2220	2035	1965	1900	1810	1705	1650	1590	1520	1235	955	690	410	255	-	-	-	-
1500		3705	3395	3270	3170	3015	2840	2745	2665	2535	2055	1595	1150	685	430	-	-	-	-
2500		6170	5655	5450	5280	5025	4730	4575	4425	4230	3430	2655	1915	1145	715	-	-	-	-
900	A216 WCC	2250	2250	2185	2110	1995	1815	1765	1665	1520	1235	955	670	410	255	-	-	-	-
1500		3750	3750	3640	3520	3325	3025	2940	2775	2535	2055	1595	1115	685	430	-	-	-	-
2500		6250	6250	6070	5865	5540	5040	4905	4630	4230	3430	2655	1855	1145	715	-	-	-	-
900	A217 WC6 ²⁾³⁾	2250	2250	2165	2080	1995	1815	1765	1705	1595	1525	1460	1350	955	650	430	290	195	125
1500		3750	3750	3610	3465	3325	3025	2940	2840	2660	2540	2435	2245	1595	1080	720	480	325	205
2500		6250	6250	6015	5775	5540	5040	4905	4730	4430	4230	4060	3745	2665	1800	1200	800	545	345
900	A217 WC9 ²⁾³⁾	2250	2250	2185	2115	1995	1815	1765	1705	1595	1525	1460	1350	1160	800	525	330	205	125
1500		3750	3750	3640	3530	3325	3025	2940	2840	2660	2540	2435	2245	1930	1335	875	550	345	205
2500		6250	6250	6070	5880	5540	5040	4905	4730	4430	4230	4060	3745	3220	2230	1455	915	570	345
900	A217 C12A	2250	2250	2185	2115	1995	1815	1765	1705	1595	1525	1460	1350	1160	1090	1080	905	670	430
1500		3750	3750	3640	3530	3325	3025	2940	2840	2660	2540	2435	2245	1930	1820	1800	1510	1115	720
2500		6250	6250	6070	5880	5540	5040	4905	4730	4430	4230	4060	3745	3220	3030	3000	2515	1855	1200

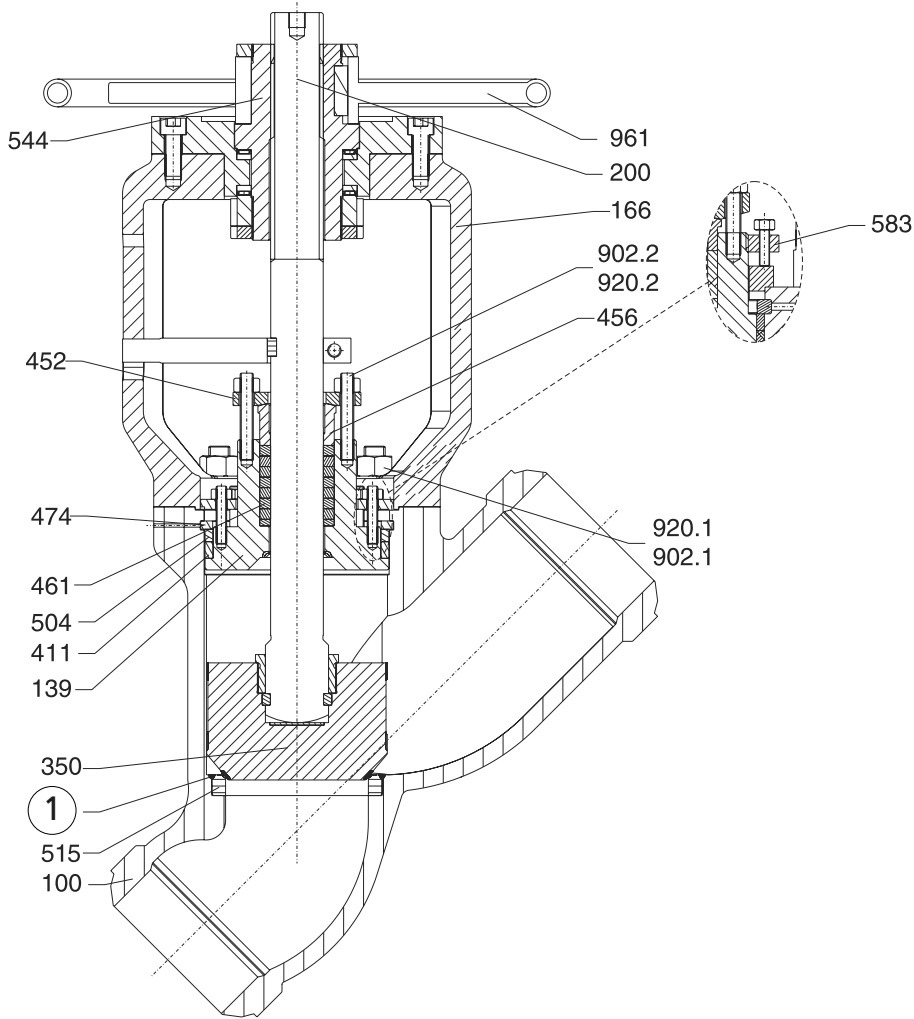
Permissible operating pressures [psi] (in acc. with ASME B16.34 Special Class)

Class	Material	[°F]																	
		-20 to +100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
900	A216 WCB ¹⁾	2250	2250	2220	2200	2200	2145	2075	1905	1545	1195	860	515	320	-	-	-	-	
1500		3750	3750	3700	3665	3665	3665	3575	3455	3170	2570	1995	1435	855	535	-	-	-	-
2500		6250	6250	6170	6105	6105	6105	5960	5760	5285	4285	3320	2395	1430	895	-	-	-	-
900	A216 WCC	2250	2250	2250	2250	2250	2250	2140	1905	1545	1195	835	515	320	-	-	-	-	
1500		3750	3750	3750	3750	3750	3750	3565	3170	2570	1995	1395	855	535	-	-	-	-	
2500		6250	6250	6250	6250	6250	6250	5940	5285	4285	3320	2320	1430	895	-	-	-	-	
900	A217 WC6 ²⁾³⁾	2250	2250	2250	2250	2250	2250	2200	2185	2160	2030	1760	1195	810	540	360	245	155	
1500		3750	3750	3750	3750	3750	3750	3665	3645	3600	3385	2935	1995	1350	900	600	405	255	
2500		6250	6250	6250	6250	6250	6250	6110	6070	6000	5645	4895	3320	2250	1500	1000	680	430	
900	A217 WC9 ²⁾³⁾	2250	2250	2220	2185	2175	2165	2145	2120	2120	2120	2030	1800	1415	1005	655	410	255	155
1500		3750	3750	3695	3640	3620	3605	3580	3535	3535	3535	3385	3000	2360	1670	1095	685	430	255
2500		6250	6250	6160	6065	6035	6010	5965	5895	5895	5895	5645	5000	3930	2785	1820	1145	715	430
900	A217 C12A	2250	2250	2250	2250	2250	2250	2200	2185	2160	2030	1800	1415	1260	1260	1130	835	540	
1500		3750	3750	3750	3750	3750	3750	3665	3645	3600	3385	3000	2360	2105	2105	1885	1395	900	
2500		6250	6250	6250	6250	6250	6250	6110	6070	6000	5645	5000	3930	3505	3505	3145	2320	1500	

Test pressure

Test	Test medium	Class 900	Class 1500	Class 2500
		[bar]	[bar]	[bar]
Shell	Water	233	388	647
Leak test (seat)		171	285	474
Back seat		171	285	474

Materials



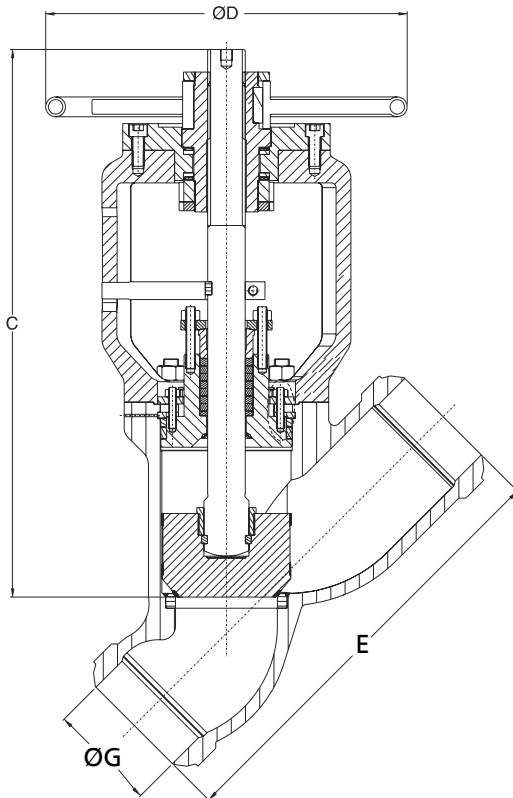
① Seal-welded

Parts list

Part No.	Description	Material	Note
100	Body	A216 WCB	
		A216 WCC	
		A217 WC6	
		A217 WC9	
		A217 C12A	
139	Bonnet	A216 WCB+ST6 / A105+ST6	Integral ST6 hard-faced back seat
		A216 WCC+ST6	
		A217 WC6+ST6 / A182 F11+ST6	
		A217 WC9+ST6 / A182 F22+ST6	
		A217 C12A+ST6 / A182 F91+ST6	
166	Yoke	A216 WCB	
		A216 WCC	
		A217 WC9	
200	Stem	A479 410-2	
		A479 XM19-A	
350	Valve disc	A216 WCB+ST6 / A105+ST6	
		A216 WCC+ST6 / A182 F22+ST6	
		A217 WC9+ST6 / A182 F22+ST6	
		A217 WC9+ST6 / A182 F22+ST6	
		A182 F91+ST6 / A217 C12A+ST6	
411	Gasket	Graphite	
452	Gland flange	Carbon steel	
		A182 F22 CL3	
456	Gland bush	A276 410	

Part No.	Description	Material	Note
461	Gland packing	Graphite	
474	Thrust ring	A336 F91	
504	Spacer ring	A182 F22 CL3	
515	Seat ring	A105+ST6	
		A182 F11+ST6	
		A182 F22+ST6	
		A182 F91+ST6	
544	Threaded bush	Aluminium bronze	
583	Retaining ring	Carbon steel / A182 F22 CL3	
902.1	Stud	A193 B7	
		A193 B16	
902.2	Stud	A193 B7	
		A193 B16	
920.1	Nut	A194 2H	
		A194 4/7	
920.2	Nut	A194 2H	
		A194 4/7	
961	Handwheel	Carbon steel	

Dimensions and weights



Dimensions and weights

Class	NPS [inch]	C ⁴⁾⁵⁾ [mm]	ØD [mm]	E [mm]	ØG ⁶⁾ [mm]	[kg] ⁵⁾
900	2	490	254	368	49,5	40
	3	600	457	381	73,5	75
	4	685	610	457	92,0	105
	5	685	610	457	116,0	110
	6	925	610	610	139,5	230
	8	1090	610	737	182,5	380
1500	2	565	457	368	43,0	75
	3	630	610	470	66,5	95
	4	765	610	546	87,5	170
	5	765	610	546	109,5	185
	6	1025	610	705	131,5	380
	2500	2	560	457	451	38,0
3		675	610	578	58,5	145
4		765	610	673	80,0	210
5		765	610	673	103,5	235
6		1030	610	914	124,5	485

Mating dimensions as per standard

Face-to-face lengths: ASME B16.10
Butt weld ends: ASME B16.25

Globe valves must always be installed in such a way that the actual flow direction of the fluid matches the arrow on the body, unless otherwise requested by the customer.

Notes on installation

The valve bodies are marked with an arrow indicating the flow direction.

-
- 4) Open
 - 5) Approximate values
 - 6) Class 900: Schedule 80 up to 3 inches. Schedule 120 from 4 inches. Class 1500: Schedule 160. Class 2500: Schedule XXS. Alternative schedules on request.
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