CORROSION RESISTANT SWING CHECK VALVES

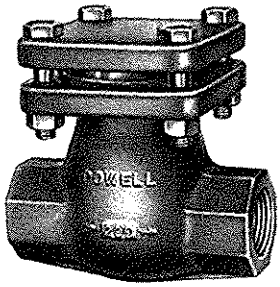

Fig. 2341
Threaded
Sizes, 1/4" through 2"
(Class 200)

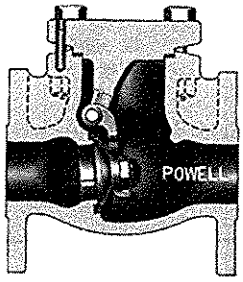

Fig. 2342
Flanged
Sizes, 1/2" through 8"
(Class 150)
Sizes 10" and up, see page 95

ORDERING

- When ordering Butt Welding End valves specify schedule of tubing or pipe end, and give complete data concerning style, figure number and contour of weld ends

CLASS 150-200

BOLTED FLANGED CAP THREADED and FLANGED ENDS

PRESSURE/TEMPERATURE RATINGS

In accordance with ASME B16.34

MATERIALS

DESCRIPTION	MATERIAL	ASTM Spec.
Cap Bolt	Stainless Steel	A-193, Grade B8
Cap Bolt Nut	Stainless Steel	A-194, Grade 8
Cap	Stainless Steel	A-351, Grade CF8M
Gasket	PTFE	Commercial
Carrier Pin	Stainless Steel	A-276, Type 316
Carrier	Stainless Steel	A-351, Grade CF8M
Disc Locknut	Stainless Steel	A-276, Type 316
Disc (1/4"-3/4")	Stainless Steel	A-276, Type 316
Disc (1"-8")	Stainless Steel	A-351, Grade CF8M
Body (F.E.)	Stainless Steel	A-351, Grade CF8M
Body (T.E.. & W.E.)	Stainless Steel	A-351, Grade CF3M
Locating Pin	Stainless Steel	Commercial

SPECIFICATIONS

- Flanged valves have end flanges in accordance with ASME B16.5
- Face-to-face dimensions conform to ASME B16.10

FEATURES

- Disc suspended from valve cap and without side plugs
- Integral Seats, however, Renewable Screwed-In Seat Rings are available on order
- Cap has a male and female joint
- Valves can be used in horizontal or vertical position; however, when installed in vertical line, flow must be upward with pressure under the disc
- Other alloys are available on special order

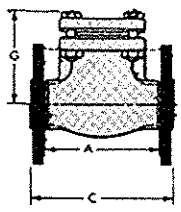

Fig. 2341
Fig. 2342

DIMENSIONS (Inches)

Size	1/4	3/8	1/2	3/4	1	1 1/2	2	3	4	6	8
A (T.E., S.W.E.)	2 3/4	2 3/4	2 3/4	3 3/4	4	5 1/2	6	-	-	-	-
C (F.E., B.W.E.)	-	-	4 1/4	4 5/8	5	6 1/2	8	9 1/2	11 1/2	14	19 1/2
G (T.E.)	2 5/32	2 5/32	2 5/32	3	3 3/8	4 1/16	4 9/16	-	-	-	-
G (T.E.)	-	-	2 5/16	3	3 3/8	4 1/16	4 9/16	5 9/16	6 1/8	7 13/16	9 5/8

WEIGHTS (Pounds)

Fig. 2341	2.1	2.1	2.1	3.3	4.9	10.6	15.5	-	-	-	-
Fig. 2342	-	-	3.6	5.3	7.5	14.6	24	48	72.9	128	

PRESSURE/TEMPERATURE RATINGS

TABLE 7

ASTM A351 Grade CF3(a)
ASTM A351 Grade CF8(b)

(a) Not to be used over 800° F
(b) At temperatures over 1000° F, use only when the carbon content is 0.04% or higher. This requirement must be specified by customer when applicable.

STANDARD CLASS

	Working Pressures by Classes, psig							
Temperature, °F	150	300	400	600	900	1500	2500	4500
-20 to 100	275	720	960	1,440	2,160	3,600	6,000	10,800
200	230	600	800	1,200	1,800	3,000	5,000	9,000
300	205	540	720	1,080	1,620	2,700	4,500	8,100
400	190	495	660	995	1,490	2,485	4,140	7,450
500	170	465	620	930	1,395	2,330	3,880	6,985
600	140	435	580	875	1,310	2,185	3,640	6,550
650	125	430	575	860	1,290	2,150	3,580	6,445
700	110	425	565	850	1,275	2,125	3,540	6,370
750	95	415	555	830	1,245	2,075	3,460	6,230
800	80	405	540	805	1,210	2,015	3,360	6,050
850	65	395	530	790	1,190	1,980	3,300	5,940
900	50	390	520	780	1,165	1,945	3,240	5,830
950	35	380	510	765	1,145	1,910	3,180	5,725
1000	20	320	430	640	965	1,605	2,675	4,815
1050	20(1)	310	410	615	925	1,545	2,570	4,630
1100	20(1)	255	345	515	770	1,285	2,145	3,855
1150	20(1)	200	265	400	595	995	1,655	2,985
1200	20(1)	155	205	310	465	770	1,285	2,315
1250	20(1)	115	150	225	340	565	945	1,695
1300	20(1)	85	115	170	255	430	715	1,285
1350	20(1)	60	80	125	185	310	515	925
1400	20(1)	50	65	95	145	240	400	720
1450	15(1)	35	45	70	105	170	285	515
1500	10(1)	25	35	55	80	135	230	410

NOTE: (1)For welding end valves only. Flanged end ratings terminate at 1000° F.

SPECIAL CLASS

	Working Pressures by Classes, psig							
Temperature, °F	150	300	400	600	900	1500	2500	4500
-20 to 100	290	750	1,000	1,500	2,250	3,750	6,250	11,250
200	255	670	890	1,335	2,005	3,345	5,570	10,030
300	230	600	800	1,200	1,800	3,000	5,000	9,000
400	210	555	735	1,105	1,660	2,765	4,605	8,295
500	200	520	690	1,035	1,555	2,595	4,320	7,780
600	185	490	650	975	1,465	2,440	4,065	7,315
650	185	480	640	960	1,440	2,395	3,995	7,190
700	180	470	630	945	1,415	2,355	3,930	7,070
750	175	465	615	925	1,390	2,315	3,855	6,945
800	175	450	600	900	1,350	2,250	3,750	6,750
850	170	440	590	885	1,325	2,205	3,680	6,620
900	165	435	575	865	1,300	2,165	3,605	6,495
950	165	425	565	850	1,275	2,120	3,535	6,365
1000	155	405	545	815	1,220	2,035	3,395	6,105
1050	150	385	515	770	1,155	1,930	3,215	5,785
1100	125	320	430	645	965	1,605	2,680	4,820
1150	95	250	330	495	745	1,245	2,070	3,730
1200	75	195	255	385	580	965	1,605	2,895
1250	55	140	190	285	425	705	1,180	2,120
1300	40	105	145	215	320	535	895	1,605
1350	30	75	105	155	230	385	645	1,155
1400	25	60	80	120	180	300	500	900
1450	15	45	55	85	130	215	355	645
1500	15	35	45	70	105	170	285	515

NOTE: Special Class Ratings apply to Threaded and Weld End Valves only and require upgrading per paragraph 8 of ASME B16.34

PRESSURE/TEMPERATURE RATINGS

TABLE 8

ASTM A351 Grade CF3M(a)
ASTM A351 Grade CF8M(b)

(a) Not to be used over 850° F

(b) At temperatures over 1000° F, use only when the carbon content is 0.04% or higher. This requirement must be specified by customer when applicable.

STANDARD CLASS

	Working Pressures by Classes, psig								
Temperature, °F(2)	150	200	300	400	600	900	1500	2500	4500
-20 to 100	275	400	720	960	1,440	2,160	3,600	6,000	10,800
200	235	360	620	825	1,240	1,860	3,095	5,160	9,290
300	215	330	560	745	1,120	1,680	2,795	4,660	8,390
400	195	300	515	685	1,025	1,540	2,570	4,280	7,705
500	170	270	480	635	955	1,435	2,390	3,980	7,165
600	140	240	450	600	900	1,355	2,255	3,760	6,770
650	125	230	445	590	890	1,305	2,170	3,700	6,660
700	110	215	430	580	870	1,305	2,170	3,620	6,515
750	95	205	425	570	855	1,280	2,135	3,560	6,410
800	80	190	420	565	845	1,265	2,110	3,520	6,335
850	65	180	420	555	835	1,255	2,090	3,480	6,265
900	50	170	415	555	830	1,245	2,075	3,460	6,230
950	35	150	385	515	775	1,160	1,930	3,220	5,795
1000	20	130	350	465	700	1,050	1,750	2,915	5,245
1050	20(1)	125	345	460	685	1,030	1,720	2,865	5,155
1100	20(1)	115	305	405	610	915	1,525	2,545	4,575
1150	20(1)	90	235	315	475	710	1,185	1,970	3,550
1200	20(1)	75	185	245	370	555	925	1,545	2,775
1250	20(1)	60	145	195	295	440	735	1,230	2,210
1300	20(1)	50	115	155	235	350	585	970	1,750
1350	20(1)	45	95	130	190	290	480	800	1,440
1400	20(1)	35	75	100	150	225	380	630	1,130
1450	20(1)	30	60	80	115	175	290	485	875
1500	20(1)	25	40	55	85	125	205	345	620

NOTE:

(1) For welding end valves only. Flanged end ratings terminate at 1000° F.

(2) For Cryogenic Valves, - 20° F Rating Extends to -423° F.

SPECIAL CLASS

	Working Pressures by Classes, psig							
Temperature, °F(2)	150	300	400	600	900	1500	2500	4500
-20 to 100	290	750	1,000	1,500	2,250	3,750	6,250	11,250
200	265	690	920	1,380	2,070	3,450	5,750	10,350
300	240	625	830	1,250	1,870	3,120	5,200	9,360
400	220	570	760	1,140	1,710	2,850	4,750	8,550
500	205	530	710	1,065	1,595	2,655	4,430	7,970
600	195	505	670	1,005	1,510	2,520	4,195	7,555
650	190	495	655	985	1,480	2,465	4,105	7,395
700	185	485	645	970	1,455	2,420	4,035	7,265
750	180	475	635	950	1,425	2,380	3,965	7,135
800	180	470	630	945	1,415	2,355	3,930	7,070
850	180	465	620	930	1,400	2,330	3,885	6,990
900	175	465	615	925	1,390	2,315	3,855	6,945
950	175	460	610	915	1,375	2,290	3,815	6,870
1000	160	420	560	840	1,260	2,105	3,505	6,310
1050	160	420	560	840	1,260	2,105	3,505	6,310
1100	145	380	510	765	1,145	1,905	3,180	5,720
1150	115	295	395	590	885	1,480	2,465	4,435
1200	90	230	310	465	695	1,155	1,930	3,470
1250	70	185	245	370	555	920	1,535	2,765
1300	55	145	195	290	435	730	1,215	2,185
1350	45	120	160	240	360	600	1,000	1,800
1400	35	95	125	190	285	470	785	1,415
1450	30	75	100	145	220	365	610	1,095
1500	20	50	70	105	155	260	430	770

NOTE: Special Class Ratings apply to Threaded and Weld End Valves only and require upgrading per paragraph 8 of ASME B16.34

FLOW DESIGN RECOMMENDATIONS

(1) SWING CHECK VALVES- Minimum ½ psi differential pressure across valve to maintain proper "full open" position.

(2) LIFT CHECK AND NON-RETURN VALVES-

Minimum 2 psi differential pressure across valve to maintain proper "full open" position.

(3) RECOMMENDED MAXIMUM FLOW VELOCITIES (APPROXIMATE)

VALVE SIZE	WATER (FT/MIN)	SATURATED STEAM (FT/MIN)	SUPERHEATED STEAM (FT/MIN)
3" and UNDER	1200	7200	9000
4	1200	8800	11000
6	1620	10400	13000
8	1860	12000	15000
10	2100	14400	18000
12	2220	15200	19000
14	2400	16000	20000
16	2400	17600	22000
18	2400	19200	24000
20" and LARGER	2400	20800	26000

FLOW COEFFICIENT (C_v) VALUES

TABLE 23

CARBON STEEL

	GATE		GLOBE		CHECK (1)	
CLASS	150	300	150	300	150	300
FIG. NO.	1503	3003	1531	3031	1561	3061
VALVE SIZE						
2	240	240	40	40	75	75
2 ½	390	390	65	65	120	120
3	560	560	95	95	170	170
4	1020	1020	175	175	315	315
6	2440	2440	410	410	760	760
8	4500	4500	760	760	1390	1390
10	6900	6900	1190	1190	2170	2170
12	10400	10400	1780	1780	3250	3250

CORROSION RESISTANT STEEL

	GATE		GLOBE		CHECK (1)	
CLASS	150/200	300	150/200	300	150/200	300
FIG. NO.	2490/2491	2466/2467	2474/2475	2446/2447	2341/2342	2345/2346
VALVE SIZE	2494/2495 2456		2629		2633	
2	240	240	40	40	75	75
2 ½	350	350	65	65	120	120
3	510	510	95	95	170	170
4	960	960	175	175	315	315
6	2340	2340	410	410	760	760
8	4500	4500	760	760	1390	1390
10	6900	6900	1190	1190	2170	2170
12	10400	10400	1780	1780	3250	3250

NOTES: 1. 5 DEG. SWING CHECK VALVES