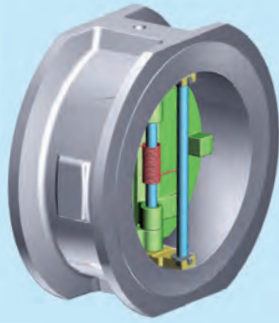


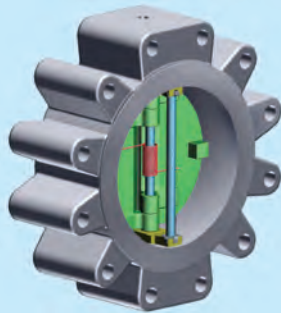
STANDARD MANUFACTURING PROGRAM



WAFER TYPE - PW

- Retainerless design is supplied as standard
- API 594 Face-to-face dimension
- To suit ANSI B16.5 flanges, NPS 2-24 (DN 50-600)
- To suit ANSI B16.47 Series A flanges, NPS 26 (DN 650) and larger

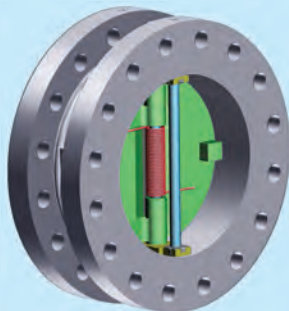
ASME CLASS					
150	300	600	900	1500	2500
NPS 2-60 DN 50-1500	NPS 2-60 DN 50-1500	NPS 2-60 DN 50-1500	NPS 2-48 DN 50-1200	NPS 2-24 DN 50-600	NPS 2-12 DN 50-300



SOLID LUG TYPE - PL, PM

- Retainerless design is supplied as standard
- API 594 Face-to-face dimension
- To suit ANSI B16.5 flanges, NPS 2-24 (DN 50-600)
- To suit ANSI B16.47 Series A flanges, NPS 26 (DN 650) and larger

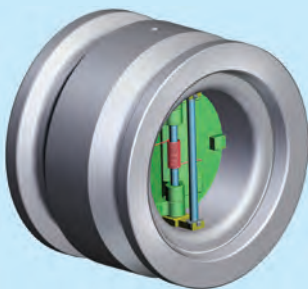
ASME CLASS					
150	300	600	900	1500	2500
NPS 2-10 DN 50-250	NPS 2-10 DN 50-250	NPS 2-10 DN 50-250	NPS 2-10 DN 50-250	NPS 2-24 DN 50-600	NPS 2-12 DN 50-300



DOUBLE FLANGED TYPE - PF, PG

- Retainerless design is supplied as standard
- API 594 Face-to-face dimension
- To suit ANSI B16.5 flanges, NPS 2-24 (DN 50-600)
- To suit ANSI B16.47 Series A Flanges, NPS 26 (DN 650) and larger

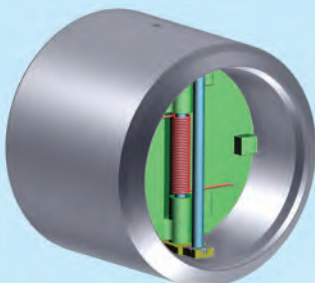
ASME CLASS			
150	300	600	900
NPS 12-60 DN 300-1500	NPS 12-60 DN 300-1500	NPS 12-60 DN 300-1500	NPS 12-48 DN 300-1200



HUB END TYPE - PH

- Retainerless design is supplied as standard
- To suit customer's specified hub-ended details

ASME CLASS			
600	900	1500	2500
NPS 2-24 DN 50-600	NPS 2-24 DN 50-600	NPS 2-24 DN 50-600	NPS 2-24 DN 50-600



BUTT WELD END TYPE - PZ

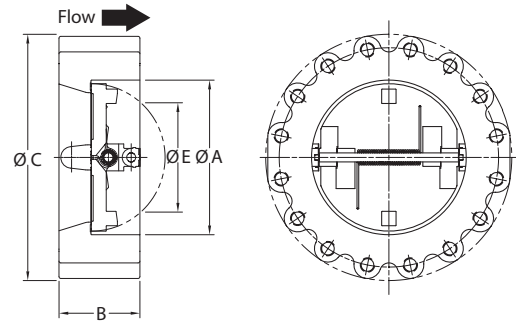
- Retainerless design is supplied as standard

ASME CLASS		
150	300	600
NPS 3-36 DN 80-900	NPS 3-36 DN 80-900	NPS 3-36 DN 80-900

For valve sizes, ASME Classes and designs not identified herein, please consult the Velan Marketing department.

INSTALLATION DIMENSIONS

SOLID LUG TYPE - PL, PM ANSI B16.5 / ANSI B16.47 SERIES A



Size		Pressure and Class		Dimensions								Approx. weight		Flange details				Eye bolt hole size
NPS	DN	Class	PN	Ø A		B		Ø C		Ø E		lbs	kg	No.(2)	Dia	Length RF ends	Length RTJ ends	
				in	mm	in	mm	in	mm	in	mm					Stud ⁽¹⁾	Stud ⁽¹⁾	
2	50	150	20	2.41	61	2.38	60	6.00	152	0.00	0	9	4	4	5/8	2.75	3.25	-
2	50	300	50	2.41	61	2.38	60	6.50	165	0.00	0	14	6	8	5/8	2.75	3.50	-
2	50	600	100	2.41	61	2.38	60	6.50	165	0.00	0	14	6	8	5/8	3.25	3.75	-
2	50	900	150	2.41	61	2.75	70	8.50	216	0.00	0	31	14	8	7/8	4.25	4.75	-
2	50	1500	260	2.41	61	2.75	70	8.50	216	0.00	0	31	14	8	7/8	4.25	4.75	-
2	50	2500	420	2.41	61	2.75	70	9.25	235	0.00	0	35	16	8	1	5.25	5.50	-
3	80	150	20	3.51	89	2.88	73	7.50	191	2.00	51	18	8	4	5/8	3.00	3.50	-
3	80	300	50	3.51	89	2.88	73	8.25	210	1.98	50	24	11	8	3/4	3.50	4.25	-
3	80	600	100	3.51	89	2.88	73	8.25	210	1.94	49	24	11	8	3/4	3.75	4.25	-
3	80	900	150	3.51	89	3.25	83	9.50	241	1.94	49	48	22	8	7/8	4.00	4.50	-
3	80	1500	260	3.51	89	3.25	83	10.50	267	1.94	49	55	24	8	1 1/8	5.25	5.75	3/8
3	80	2500	420	3.51	89	3.38	86	12.00	305	2.18	55	71	32	8	1 1/4	6.50	7.00	3/8
4	100	150	20	4.50	114	2.88	73	9.00	229	3.37	85	33	15	8	5/8	3.00	3.50	3/8
4	100	300	50	4.50	114	2.88	73	10.00	254	3.37	85	36	16	8	3/4	3.50	4.25	3/8
4	100	600	100	4.50	114	3.13	79	10.75	273	3.39	86	35	16	8	7/8	4.25	4.75	3/8
4	100	900	150	4.50	114	4.00	102	11.50	292	3.05	77	65	29	8	1 1/8	5.00	5.50	3/8
4	100	1500	260	4.50	114	4.00	102	12.25	311	3.30	84	80	36	8	1 1/4	6.00	6.25	1/2
4	100	2500	420	4.50	114	4.13	105	14.00	356	3.25	83	105	48	8	1 1/2	7.50	8.00	1/2
6	150	150	20	6.63	168	3.88	98	11.00	279	5.62	143	53	24	8	3/4	3.25	3.75	1/2
6	150	300	50	6.63	168	3.88	98	12.50	318	5.55	141	68	31	12	3/4	3.75	4.50	1/2
6	150	600	100	6.63	168	5.38	137	14.00	356	5.03	128	122	55	12	1	5.00	5.50	1/2
6	150	900	150	6.63	168	6.25	159	15.00	381	4.75	121	210	95	12	1 1/8	5.25	5.75	1/2
6	150	1500	260	6.63	168	6.25	159	15.50	394	4.53	115	205	93	12	1 3/8	7.25	7.75	1/2
6	150	2500	420	6.63	168	6.25	159	19.00	483	4.88	124	430	195	8	2	10.00	10.75	1/2
8	200	150	20	8.63	219	5.00	127	13.50	343	7.63	194	90	41	8	3/4	3.50	4.00	1/2
8	200	300	50	8.63	219	5.00	127	15.00	381	7.35	187	115	52	12	7/8	4.25	5.00	1/2
8	200	600	100	8.63	219	6.50	165	16.50	419	6.71	170	204	93	12	1 1/8	5.75	6.00	1/2
8	200	900	150	8.63	219	8.13	206	18.50	470	5.60	142	380	172	12	1 3/8	6.25	6.75	1/2
8	200	1500	260	8.63	219	8.13	206	19.00	483	5.47	139	385	175	12	1 5/8	8.25	9.00	1/2
8	200	2500	420	8.63	219	8.13	206	21.75	552	6.75	171	580	263	12	2	10.75	11.50	1/2
10	250	150	20	10.75	273	5.75	146	16.00	406	9.00	229	160	73	12	7/8	3.75	4.25	1/2
10	250	300	50	10.75	273	5.75	146	17.50	445	9.51	242	220	100	16	1	4.75	5.50	1/2
10	250	600	100	10.75	273	8.38	213	20.00	508	8.27	210	382	173	16	1 1/4	6.25	6.75	3/4
10	250	900	150	10.75	273	9.50	241	21.50	546	7.83	199	625	283	16	1 3/8	6.50	7.00	3/4
10	250	1500	260	10.75	273	9.75	248	23.00	584	7.56	192	780	354	12	1 7/8	9.50	10.25	3/4
10	250	2500	420	10.75	273	10.00	254	26.50	673	9.12	232	1080	490	12	2 1/2	13.50	14.75	3/4
12	300	150	20	12.75	324	7.13	181	19.00	483	11.15	283	290	132	12	7/8	3.75	4.50	1/2
12	300	300	50	12.75	324	7.13	181	20.50	521	11.15	283	375	170	16	1 1/8	5.25	6.00	1/2
12	300	600	100	12.75	324	9.00	229	22.00	559	9.91	252	565	256	20	1 1/4	6.50	6.75	3/4
12	300	900	150	12.75	324	11.50	292	24.00	610	9.53	253	850	386	20	1 3/8	6.75	7.25	3/4
12	300	1500	260	12.75	324	12.00	305	26.50	673	9.11	231	1250	567	16	2	10.50	11.50	3/4
12	300	2500	420	12.75	324	12.00	305	30.00	762	10.83	275	1600	726	12	2 3/4	14.75	16.25	1
14	350	150	20	14.00	356	7.25	184	21.00	533	12.12	308	335	152	12	1	4.25	4.75	3/4
14	350	300	50	14.00	356	8.75	222	23.00	584	12.14	308	630	286	20	1 1/8	5.25	6.00	3/4
14	350	600	100	14.00	356	10.75	273	23.75	603	9.72	247	785	356	20	1 3/8	6.75	7.25	3/4
14	350	900	150	14.00	356	14.00	356	25.25	641	9.30	236	1250	567	20	1 1/2	7.25	7.75	3/4
14	350	1500	260	14.00	356	14.00	356	29.50	749	7.21	183	1800	816	16	2 1/4	11.50	12.75	1

1) Stud details are provided for "PL" type, threaded lug construction. For stud details of "PM" type, drilled-thru lug construction, refer to Wafer type - PW.

2) Number of studs is per flange. For installation purposes, double the number of studs.

INSTALLATION DIMENSIONS

SOLID LUG TYPE - PL, PM

ANSI B16.5 / ANSI B16.47 SERIES A

Size		Pressure and Class		Dimensions								Approx. weight		Flange details				Eye bolt hole size
				Ø A		B		Ø C		Ø E				No.(2)	Dia	Length RF ends	Length RTJ ends	
NPS	DN	Class	PN	in	mm	in	mm	in	mm	in	mm	lbs	kg			Stud(1)	Stud(1)	
16	400	150	20	16.00	406	7.50	191	23.50	597	13.90	353	440	200	16	1	4.25	4.75	3/4
16	400	300	50	16.00	406	9.13	232	25.50	648	14.13	359	775	352	20	1 1/4	5.75	6.50	3/4
16	400	600	100	16.00	406	12.00	305	27.00	686	12.54	319	1125	510	20	1 1/2	7.50	7.75	3/4
16	400	900	150	16.00	406	15.13	384	27.75	705	12.25	311	1650	748	20	1 5/8	7.75	8.50	3/4
16	400	1500	260	16.00	406	15.13	384	32.50	826	12.50	318	2410	1093	16	2 1/2	12.75	14.00	1
18	450	150	20	18.00	457	8.00	203	25.00	635	15.95	405	520	236	16	1 1/8	4.75	5.25	3/4
18	450	300	50	18.00	457	10.38	264	28.00	711	16.27	413	1080	490	24	1 1/4	6.00	6.75	1
18	450	600	100	18.00	457	14.25	362	29.25	743	14.00	356	1565	710	20	1 5/8	8.00	8.50	1
18	450	900	150	18.00	457	17.75	451	31.00	787	14.06	357	2500	1134	20	1 7/8	8.50	9.50	1
18	450	1500	260	18.00	457	18.44	468	36.00	914	9.81	249	3349	1519	16	2 3/4	14.00	15.25	1 1/2
20	500	150	20	20.00	508	8.63	219	27.50	699	17.75	451	710	322	20	1 1/8	5.00	5.50	3/4
20	500	300	50	20.00	508	11.50	292	30.50	775	17.81	452	1435	651	24	1 1/4	6.00	7.00	1
20	500	600	100	20.00	508	14.50	368	32.00	813	16.77	426	1900	862	24	1 5/8	8.25	9.00	1
20	500	900	150	20.00	508	17.75	451	33.75	857	17.06	433	2900	1315	20	2	9.25	10.00	1
20	500	1500	260	20.00	508	21.00	533	38.75	984	17.06	433	5800	2631	16	3	15.25	16.75	1 1/2
24	600	150	20	24.00	610	8.75	222	32.00	813	21.68	551	855	388	20	1 1/4	5.50	6.00	3/4
24	600	300	50	24.00	610	12.50	318	36.00	914	21.87	555	1850	839	24	1 1/2	7.00	8.00	1
24	600	600	100	24.00	610	17.50	445	37.00	940	19.88	505	3000	1361	24	1 7/8	8.75	9.50	1
24	600	900	150	24.00	610	19.50	495	41.00	1041	16.56	421	4400	1996	20	2 1/2	11.00	12.00	1
24	600	1500	260	24.00	610	22.00	559	46.00	1168	18.62	473	6998	3174	16	3 1/2	17.50	19.25	1 1/2
26	650	150	20	26.00	660	14.00	356	34.25	870	21.96	558	1600	726	24	1 1/4	6.50	7.50	1
26	650	300	50	26.00	660	14.00	356	38.25	972	22.85	580	2200	998	28	1 5/8	7.75	8.75	1
26	650	600	100	26.00	660	18.00	457	40.00	1016	21.74	552	3400	1542	28	1 7/8	9.50	10.50	1
26	650	900	150	24.00	610	21.00	533	42.75	1086	20.51	521	5000	2268	20	2 3/4	13.00	14.50	1
28	700	150	20	28.00	711	15.00	381	36.50	927	22.06	560	1900	862	28	1 1/4	6.50	7.50	1
28	700	300	50	28.00	711	15.00	381	40.75	1035	24.41	620	2700	1225	28	1 5/8	8.25	9.25	1
28	700	600	100	28.00	711	19.00	483	42.25	1073	23.89	607	4000	1814	28	2	10.00	11.00	1
28	700	900	150	26.00	660	22.63	575	46.00	1168	21.53	547	6200	2812	20	3	13.75	15.25	1
30	750	150	20	30.00	762	12.00	305	38.75	984	28.13	715	1880	853	28	1 1/4	6.75	7.75	1
30	750	300	50	30.00	762	14.50	368	43.00	1092	27.98	711	3325	1508	28	1 3/4	8.75	9.75	1
30	750	600	100	30.00	762	19.88	505	44.50	1130	27.88	708	4700	2132	28	2	10.25	11.25	1
30	750	900	150	28.00	711	26.00	660	48.50	1232	27.88	708	7500	3402	20	3	14.00	15.50	1
32	800	150	20	32.00	813	14.00	356	41.75	1060	29.25	743	2400	1089	28	1 1/2	7.50	8.75	1
32	800	300	50	32.00	813	16.00	406	45.25	1149	28.93	735	3400	1542	28	1 7/8	9.25	10.50	1
32	800	600	100	32.00	813	21.00	533	47.00	1194	27.92	709	5400	2449	28	2 1/4	11.00	12.00	1
32	800	900	150	30.00	762	26.00	660	51.75	1314	25.33	643	9000	4082	20	3 1/4	15.00	16.50	1
36	900	150	20	36.00	914	14.50	368	46.00	1168	33.40	848	3120	1415	32	1 1/2	8.00	9.00	1
36	900	300	50	36.00	914	19.00	483	50.00	1270	31.97	812	4600	2087	32	2	9.75	11.00	1
36	900	600	100	36.00	914	25.00	635	51.75	1314	31.21	793	7725	3504	28	2 1/2	11.75	13.00	1
36	900	900	150	34.00	864	28.25	718	57.50	1461	31.47	799	11900	5398	20	3 1/2	16.25	17.75	1
40	1000	150	20	40.00	1016	17.00	432	50.75	1289	37.56	954	4100	1860	36	1 1/2	8.00	8.00	1 1/2
40	1000	300	50	36.00	914	21.50	546	48.75	1238	36.29	922	5100	2313	32	1 5/8	9.25	9.25	1 1/2
40	1000	600	100	36.00	914	26.00	660	52.00	1321	33.38	848	8100	3674	32	2 1/4	12.50	12.50	1 1/2
40	1000	900	150	34.00	864	30.00	762	59.50	1511	32.61	828	13700	6214	24	3 1/2	17.25	17.25	1 1/2
42	1050	150	20	42.00	1067	17.00	432	53.00	1346	39.20	996	4400	1996	36	1 1/2	8.25	8.25	1 1/2
42	1050	300	50	40.00	1016	22.38	568	50.75	1289	35.99	914	6100	2767	32	1 5/8	9.50	9.50	1 1/2
42	1050	600	100	38.00	965	27.63	702	55.25	1403	32.38	822	9600	4354	28	2 1/2	13.50	13.50	1 1/2
42	1050	900	150	36.00	914	31.00	787	61.50	1562	34.61	879	15000	6804	24	3 1/2	17.50	17.50	1 1/2
48	1200	150	20	48.00	1219	20.63	524	59.50	1511	43.06	1094	6600	2994	44	1 1/2	8.75	8.75	1 1/2
48	1200	300	50	44.00	1118	24.75	629	57.75	1467	43.68	1109	10000	4536	32	1 7/8	10.50	10.50	1 1/2
48	1200	600	100	42.00	1067	31.00	787	62.75	1594	42.25	1073	13700	6214	32	2 3/4	15.00	15.00	1 1/2
48	1200	900	150	42.00	1067	34.00	864	70.25	1784	41.67	1058	21500	9752	24	4	20.00	20.00	1 1/2

1) Stud details are provided for "PL" type, threaded lug construction. For stud details of "PM" type, drilled-thru lug construction, refer to Wafer type - PW.
 2) Number of studs is per flange. For installation purposes, double the number of studs.