



AVENGER

MODEL - FAM

1724 KPa (250 PSIG) 50mm-300mm (2" - 12")
1034 KPa (150 PSIG) 350mm-1200mm (14" - 48")

Filtration / Aeration / Membrane

Resilient Seated Butterfly Valves (Manual / Automated)



Seat technology is specifically designed to suit chlorine, chloramines for treated and raw water

Designed for today's applications
The Application Solution Company®
Blue Crude Valve®



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Suggested Specification

All valves shall meet API-609 MSS-SP-67 ISO 5752 face-to-face dimensions. All valves shall be rated for 1724 KPa (250 PSIG) 50mm-300mm (2"-12") and 1034 KPa (150 PSIG) 350mm-1200mm (14"- 48") and full rated on dead end service. All bodies shall be Ductile Iron 65-45-12 and bi-directional tested in both directions with zero leakage. Lug bodies shall be full lug rated and all Wafer bodies suitable for ANSI 125/150lb, JIS, DIN or B.S. Flanges. Secondary seals shall be self-adjusting. All elastomers shall be EPDM or Buna-N (on Hydrocarbons). All internal bearings shall be non-corrosive and non-metallic. All EPDM seats shall be suitable for 250 °F sustained high temperature and capable of 2000 PPM on chlorinated applications.

- Lug/Wafer
- Automated Electric / Pneumatic
- Manual
- Gear



Temperature Ratings:

EPDM : 121°C (250 °F) sustained high temp EPDM (continuous)
BUNA-N : 100°C (212 °F) continuous
VITON : 204°C (400 °F) Dry Service, 149°C (300 °F) continuous
*Consult factory for elastomer application

Velocity Rating:

Fluids 10 m/s (30 ft/sec) 50-500mm (2"-20") 600mm (24") and above consult factory
Gases 65 m/s (200 ft/sec) 50-1200mm (2"-48")

Rangeability:

33:1 The ratio of the maximum controllable flow of a valve to the minimum controllable flow that it can control within the same inherent characteristic.





AVENGER

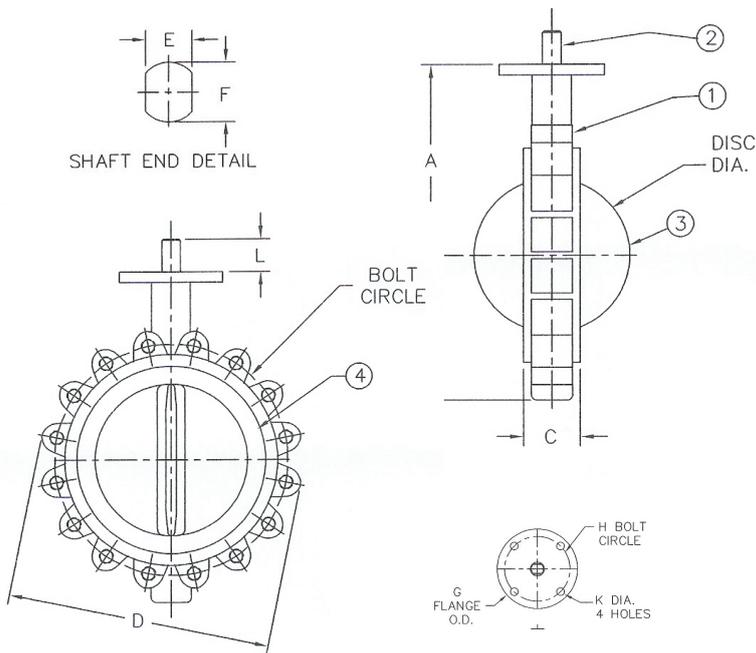
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Flange Connection

Stealth valves are designed for installation between ANSI Class 125/150 lb. weld-neck or slip-on flanges, BS 10 Tables D & E, BS 4504 NP 10/16, DIN ND 10/16, AS 2129 and JIS 10, either flat faced or raised faced.



Pressure Rating

For bi-directional zero leakage shut off, disc in closed position.

mm	inch	KPa	Psig
50-300	2-12	1724	250
350-500	14-20	1034	150

CV VALUES - VALVE SIZING COEFFICIENT

Valve Size		Disc Position (degrees)									
mm	ins	90°	80°	70°	60°	50°	40°	30°	20°	10°	
50	2	144	114	84	61	43	27	16	7	1	
65	2 1/2	282	223	163	107	67	43	24	11	1.5	
75	3	461	364	267	154	96	61	35	15	2	
100	4	841	701	496	274	171	109	62	27	3	
125	5	-	-	-	-	-	-	-	-	-	
150	6	1850	1542	1025	567	354	225	129	56	6	
200	8	3316	2842	1862	1081	680	421	241	102	12	
250	10	5430	4525	2918	1710	1076	667	382	162	19	
300	12	8077	6731	4393	2563	1594	1005	555	235	27	
350	14	10538	8874	5939	3384	2149	1320	756	299	34	
400	16	13966	11761	7867	4483	2847	1749	1001	397	45	
450	18	17214	14496	10065	5736	3643	2237	1281	507	58	
500	20	22339	18812	12535	7144	4536	2786	1595	632	72	
600	24	33245	27260	18285	11070	6981	4255	2394	1031	260	

Cv is defined as the volume of water in U.S.G.P.M. that will flow through a given restriction or valve opening with a pressure drop of one (1) p.s.i. at room temperature. Recommended control angles are between 25° - 70° open. Preferred angle for control valve sizing is 60° - 65° open.

LUG/WAFER DIMENSIONS - Stealth Avenger Butterfly Valve

Size		A		B		C		D (Lug only)		Disc. Dia.		Bolt Circle		E		F		G		H		K		L		D (Wafer only)	
mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins
50	2	140	5 1/2	76	3	41	1 5/8	165	6 1/2	51	2	121	4 3/4	10	.393	13	.496	92	3 5/8	70	2.750	7	.275	32	1 1/4	95	3 3/4
75	3	165	6 1/2	89	3 1/2	44	1 3/4	194	7 5/8	79	3 1/8	152	6	10	.393	13	.496	92	3 5/8	70	2.750	7	.275	32	1 1/4	127	5
100	4	178	7	108	4 1/4	51	2	219	8 5/8	105	4 1/8	191	7 1/2	12	.472	16	.620	92	3 5/8	70	2.750	10	.393	32	1 1/4	165	6 1/2
125	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	6	203	8	124	4 7/8	54	2 1/8	283	11 1/8	156	6 1/8	241	9 1/2	14	.550	19	.744	92	3 5/8	70	2.750	10	.393	32	1 1/4	213	8 3/8
200	8	251	9 7/8	175	6 7/8	64	2 1/2	338	13 15/16	203	8	298	11 3/4	17	.668	22	.868	125	4 15/16	102	4.000	12	.472	38	1 1/2	270	10 5/8
250	10	292	11 1/2	203	8	64	2 1/2	406	16	251	9 7/8	362	14 1/4	22	.865	28	1.118	125	4 15/16	102	4.000	12	.472	44	1 3/4	330	13
300	12	337	13 1/4	241	9 1/2	76	3	476	18 3/4	302	11 7/8	432	17	24	.943	32	1.242	140	5 1/2	102	4.000	12	.472	44	1 3/4	400	15 3/4
350	14	368	14 1/2	267	10 1/2	79	3 1/8	502	19 3/4	333	13 1/8	476	18 3/4	24	.943	32	1.242	140	5 1/2	102	4.000	12	.472	44	1 3/4	432	17
400	16	394	15 1/2	318	12 1/2	89	3 1/2	564	22 3/16	389	15 5/16	540	21 1/4	27	1.061	33	1.305	197	7 3/4	140	5.500	18	.707	51	2	495	19 1/2
450	18	419	16 1/2	337	13 1/4	108	4 1/4	614	24 3/16	440	17 5/16	578	22 3/4	27	1.061	38	1.494	197	7 3/4	140	5.500	18	.707	51	2	527	20 3/4
500	20	479	18 7/8	346	13 5/8	133	5 1/4	668	26 5/16	491	19 5/16	635	25	32	1.257	41	1.616	197	7 3/4	140	5.500	18	.707	64	2 1/2	584	23
600	24	560	22 1/8	445	17 1/2	156	6 1/8	778	30 5/8	591	23 1/4	749	29 1/2	36	1.415	51	1.989	276	10 7/8	165	6.500	23	.904	70	2 3/4	686	27

All metric units are soft conversion from original imperial units.



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Typical Applications:

- On/off isolation or control
- Dead end service/removal of downstream piping
- Heating ventilating and air conditioning systems
- Industrial process piping
- Municipal raw water intake
- Municipal chlorinated water systems (2000 ppm)
- Municipal feed water and reservoir
- Throttling and process control
- Full vacuum service
- Aeration and blower installations
- Membrane isolation or control

Installation:

Full conformance to MSS-SP-67 for universal interchangeability and ISO 5752 and API-609 latest revision. All valves are designed for ANSI 125/150lb flanges and zero leakage. Rated to 1724 KPa (250 PSIG) WOG service in sizes 50mm-300mm (2"-12") and 1034 KPa (150 PSIG) 350mm-1200mm (14"-48").



Testing:

All valves are factory tested on both sides for bi-directional installations and zero leakage.

Features	Benefits
Extended neck	Allows for 2" insulation
Ductile iron body	High strength body when in tension (lug body)
Non corrosive bushings	No side loading Elimination of shaft to body corrosion or shaft seizure
High cycle low wear	High cyclic capabilities while maintaining zero leakage Elastomer displacement is minimized
Cartridge seat	Excellent on full vacuum distortion proof seat and primary shaft seal movement with consistent displacement on closing
Splined shaft	High torsional capabilities with zero disc deflection Adjustable for low torque and reduced seat wear
Field replaceable parts	Seats and components are field replaceable
High shear capabilities	No lower shaft turndown is required Full diameters maximize shear strength





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Key features

- Actuator mounting to ISO 5211.
- Splined shaft with 360 degree positive drive.
- Three bearings in the shaft journal eliminating shaft to body seizure.
- Rigid hard backed seats for pressure ratings of 1724 KPa (250 PSIG) 50mm-300mm (2"-12").
- Direct mount actuation.
- Primary and secondary seals.
- MSS-SP67 face to face and ISO 5752.

Upper Stem Design

- Moulded primary seal design.
- High strength full shaft diameter.
- Solid 316 shaft retainer ring for blow out proof stem design eliminating hysteresis in any position.
- Inboard bearing at the inner radius.
- Splined connection eliminating hysteresis in the mid position.
- Shaft diameters are maximized for full delta P applications.



Lower Stem

- Guided stem in lower body journal in non-corrosive, non-metallic bearing.
- Full shaft diameter for increased shear strength at full Delta P.

Seat Design

- Cartridge seat design eliminates lipped in seats on installation.
- Less seat lateral movement.
- Rigid backing provides seat integrity at high velocity and Delta P.





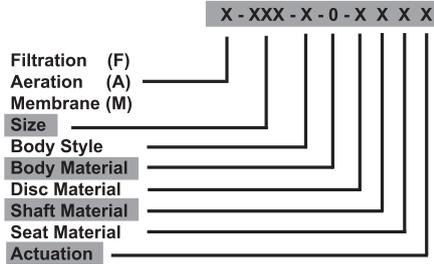
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Ordering Information



Example
8" Filtration Valve-Lug

Body = Lug Body Material = Ductile Iron
 Disc = 316 Stainless Steel Shaft: 316 Stainless Steel
 Seat = EPDM Actuation = Lever

F-080-L-D-SS-1-E-1

SIZE	2" - 020 2 1/2" - 025	3" - 030 4" - 040	5" - 050 6" - 060	8" - 080 10" - 010	12" - 120 14" - 140	16" - 160 18" - 180	20" - 200 24" - 240	30" - 300 36" - 360	
BODY	Wafer - W			Flanges - F			Lug = L		
BODY MTL	Ductile Iron - D			316 Stainless Steel - S					
DISC	316 Stainless Steel - SS			Ductile Iron NCI - NCI			Bronze - BR		
SHAFT	316 Stainless Steel - 1 304 Stainless Steel - 2			416 Stainless Steel - 3 Monel - 4			17 - 4PH - 5		
SEAT	EPDM - E			VITON - V			BUNA - B		
ACTUATION	10 Positioner Lever - 1 Infinite Lever - 2			Gear - 3 Pneumatic - 4			Electric - 4 Gear & Chainwheel - 5		

Valve Seating Torque/Weights

SIZE		1380 KPa (200PSIG)				1034 KPa (150 PSIG)				517 KPa (75 PSIG)				VALVE & GEAR WEIGHT Lug Style				VALVE & GEAR WEIGHT Wafer Style			
mm	ins	GENERAL		SEVERE		GENERAL		SEVERE		GENERAL		SEVERE		Valve		Gear Operator		Valve		Gear Operator	
		Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	Nm	in-lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
50	2	15	176	24	214	20	134	22	196	13	113	20	179	4.5	10	1.8	4	3.6	8	1.8	4
65	2 1/2	21	190	33	290	15	136	29	258	13	119	25	225	5.4	12	1.8	4	4.1	9	1.8	4
75	3	23	205	44	387	22	192	41	364	20	181	39	343	6.3	14	1.8	4	4.5	10	1.8	4
100	4	40	351	73	644	37	328	68	600	33	293	61	536	10.4	23	1.8	4	6.3	14	1.8	4
125	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	6	102	903	174	1540	94	831	165	1460	80	710	141	1248	16.3	36	3.6	8	9.1	20	3.6	8
200	8	192	1700	330	2921	173	1531	297	2629	145	1283	250	2213	21.3	47	9.1	20	14.9	33	9.1	20
250	10	323	2859	549	4859	286	2531	486	4301	232	2053	394	3487	31.3	69	10.9	24	22.2	49	10.9	24
300	12	490	4337	799	7072	429	3797	699	6187	343	3036	559	4948	46.2	102	11.3	25	37.1	82	11.3	25
350	14	-	-	-	-	527	4668	825	7302	434	3841	550	4868	64.8	143	11.8	26	49.8	110	11.8	26
400	16	-	-	-	-	755	6682	1133	10028	565	5001	849	7514	110.1	243	12.7	28	70.2	155	12.7	28
450	18	-	-	-	-	1012	8957	1518	13435	742	6567	1113	9851	140.4	310	16.3	36	135.9	300	16.3	36
500	20	-	-	-	-	1350	11948	2025	17923	965	8541	1447	12807	231.9	512	32.2	71	149.5	330	32.2	71
600	24	-	-	-	-	2111	18684	3234	28621	1166	10319	2241	19834	310.8	686	59.8	132	181.2	400	59.8	132

Under certain conditions, hydrodynamic torque can exceed seating and unseating torques when sizing actuators. Hydrodynamic torque must be considered to help ensure correct selection of actuation to include Delta P and Velocity.

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