

CHECK VALVE WAFER FM-UL



With today's demanding system requirements, engineers must specify piping components that are both **COST EFFICIENT** and **RELIABLE**. The design of the Val-Matic DUAL DISC® Check Valve answers those needs by incorporating many unique characteristics not found in similar check valves. 2" - 12" (50 -300mm) valves include Ductile Iron construction, with a 250 psi (17.2 BAR), cold working pressure rating. They are UL/ FM approved and available in Wafer (ANSI 125, ISO PN10, ISO PN16) and Grooved End IPS connections. Sizes 14" (350mm) and larger are available in cast and ductile iron.

INSTALLATION COST: Choose between compact wafer design to minimize space requirements or grooved end for ease of installation. Both provide low initial installation cost and minimal maintenance. The following quality features you expect from Val-Matic can be found in both the wafer and grooved end valves.

OPERATING COST: Careful attention to inlet contouring and streamlined flow design, combined with an expansive flow area, result in unusually low pressure loss characteristics. The resulting low power consumption translates into dollar savings throughout the long life of the valve.

REF: VR8800CD_052021_REV0

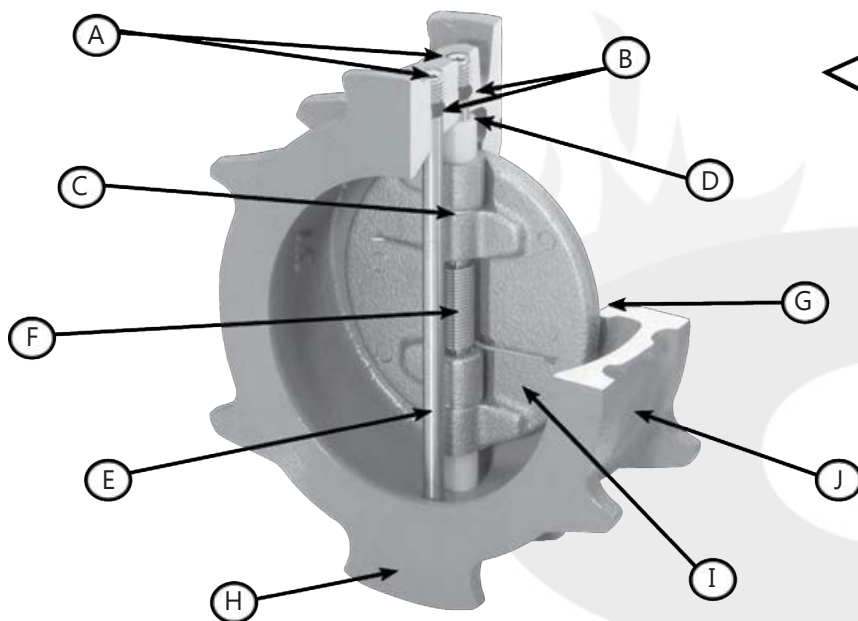
AQL PROTECCION

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COMPONENTS



■ A. RETAINER PLUGS

Retain hinge and stop pins while providing compression to stabilization spheres.

■ B. STABILIZATION SPHERES

Stabilize hinge and stop pins, preventing vibration and wear.

■ C. THRUST BEARINGS

Reduce friction and wear during disc action.

■ D. HINGE PIN

Heavy duty construction with increased bearing surface and strength.

■ E. STOP PIN

Positions discs on slight angle during flow preventing disc flutter.

■ F. SPRING

Specially designed torsion spring closes discs upon pump shutdown minimizing water hammer normally associated with valve shutoff. Also provides for Lift and Pivot disc action. Cycle tested 50,000 cycles to assure long, trouble free life.

■ G. VULCANIZED SEAT

Pressure sensitive seating with full disc overlap provides positive seating at high and low pressures.

■ H. ALIGNMENT FINNS

Provide for precise alignment in ANSI 125 and ISO PN10 and PN16 installations. (Patent Pending.)

■ I. DISC

Dual Disc design increases valve sensitivity to flow, allowing discs to close quickly on pump shutdown.

■ J. BODY

Choose between compact wafer design to minimize space requirements (pictured) or grooved end for ease of installation. Both provide low initial installation cost and minimal maintenance. Compact wafer style reduces installation time, minimizes space required for installation, and results in low initial unit cost. Alignment fins provide precise alignment for ANSI 125 and ISO PN10 and PN 16 installations.

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PRODUCT RELIABILITY: Design features such as Lift and Pivot Disc Action, Disc Seal Overlap, Pressure Sensitive Seating, Stabilization Spheres, Disc Stabilization, and Flow Sensitive Closure, combined with careful selection of materials of construction, reflect Val-Matic’s efforts to build a quality valve. These efforts result in a COST EFFICIENT and RELIABLE product that will provide many years of trouble free service.



1. Disc in closed position.

2. Heel lifts as flow begins.

3. Disc pivot as flow increases.

4. Toe touches as flow diminishes.

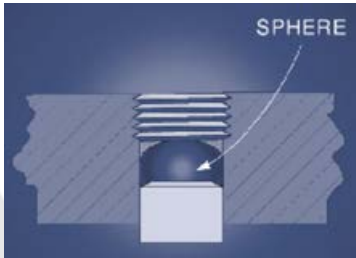
5. Disc reset as flow stopped.

LIFT AND PIVOT DISC ACTION:

This feature, designed to give longer valve life, is activated during the opening and closing cycles. It works by a combination of clearance between the pivot pin and disc bores, and the placement of the legs of the torsion spring. With this design the disc will always lift first at the pivot on opening, and not return until the disc is closed, preventing wear between disc and seat surfaces.

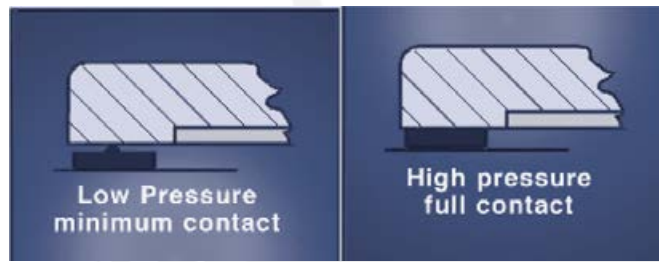
STABILIZATION SPHERES:

These resilient, synthetic spheres inserted into the pivot and stop pin holes are compressed against the pins and effectively stabilize them during flow conditions, eliminating vibration and wear.



PRESSURE SENSITIVE SEATING:

This design provides for minimum disco- seat contact at low pressures, and maximum contact at high pressures resulting in positive seating at all times without seal destruction.



DISC STABILIZATION:

When the valve is fully open, the discs are positioned on a slight angle, causing the flow velocity to force the discs firmly against the stop pin.

The ensuing vector forces act to stabilize the disc during flow conditions thereby preventing excessive wear due to disc "flutter."

DISC SEAL OVERLAP:

Contact between the seal and the disc is uniquely designed to eliminate indentation ridges found in designs which do not allow the disc to fully overlap the seal. Indentation ridges caused by valve designs with discs smaller in diameter than the seal can result in valve leakage.



FLOW SENSITIVE CLOSURE:

The torsion spring closes the valve when the flow is reduced, preventing flow reversal and lessening the potential for water hammer normally associated with conventional swing check valves.

Maximum Pressure-Temperature Ratings							
Maximum Non-Shock Working Pressure PSIG (BAR) ANSI Class 125, ISO PN 10 - 16							
Temperature		Ductile Iron		Cast Iron			
°F	°C	2" - 12"	50 - 300 mm	14" - 24"	30" - 60"	350 - 600 mm	750 - 1500 mm
150	65	250	17.2	150	150	10.3	10.3
200	95	235	16.2	135	115	9.3	7.9
250	120	220	15.2	125	85	8.6	5.9
Hydro test	Hydro test	500	35	230	230	16	16

Materials of Construction				
Component		Standard		Optional
Body	2" - 12"	50 - 300 mm	Ductile Iron ASTM A536 Gr. 65-45-12	N/A
	14" - 60"	350 - 1.500 mm	Cast Iron ASTM A126, Class B	Ductile Iron ASTM A536 Gr. 65-45-12
Disc	2" - 12"	50 - 300 mm	Bronze ASTM B584, C83600	N/A
	14" - 60"	350 - 1.500 mm	Aluminum Bronze ASTM B148, Alloy C95200	Ductile Iron, Electroless Nickel Plated
Seal		Buna-N (NBR)		Viton (FKM)
Spring		316 SS (2"-16"/50-400mm), 17-7 PH (18"- 60"/450-1,500mm)		N/A
Trim		316 Stainless Steel		N/A
Exterior Coating		Universal Primer		ANSI/NSF 61 Fusion Bonded Epoxy*

*FBE also available on interior.

FLOW COEFFICIENTS

Series 8800W	IN	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	Series 8800		Series 8800					
	*Cv	76	161	224	400	648	1.060	1.890	3.340	5.270	Size	*Cv	**Kv	Size	*Cv	**Kv		
	mm	50	65	80	100	125	150	200	250	300	IN	mm			IN	mm		
	**Kv	65	137	191	341	553	904	1.612	2.850	4.495	14	350	5.200	4.435	36	900	50.000	42.650
Series 8800G	IN	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	16	400	7.200	8.018	42	1.100	72.000	61.400
	*Cv	77	129	209	358	573	898	1.740	3.180	4.950	18	450	9.400	10.240	48	1.200	97.000	82.740
	mm	50	65	80	100	125	150	200	250	300	20	500	12.000	15.780	54	1.144	130.000	112.400
	**Kv	66	110	178	305	489	766	1.484	2.712	4.222	24	600	18.500	28.150	60	1.500	180.000	155.700
											30	800	33.000	42.650				

*Cv = The number of U.S. gallons/minute of 60° F water that will flow through the valve with a 1 PSI pressure drop across the valve.

**Kv = The number of cubic meters per hour of 20° C water that will flow through a valve with a 1 bar pressure drop across the valve.

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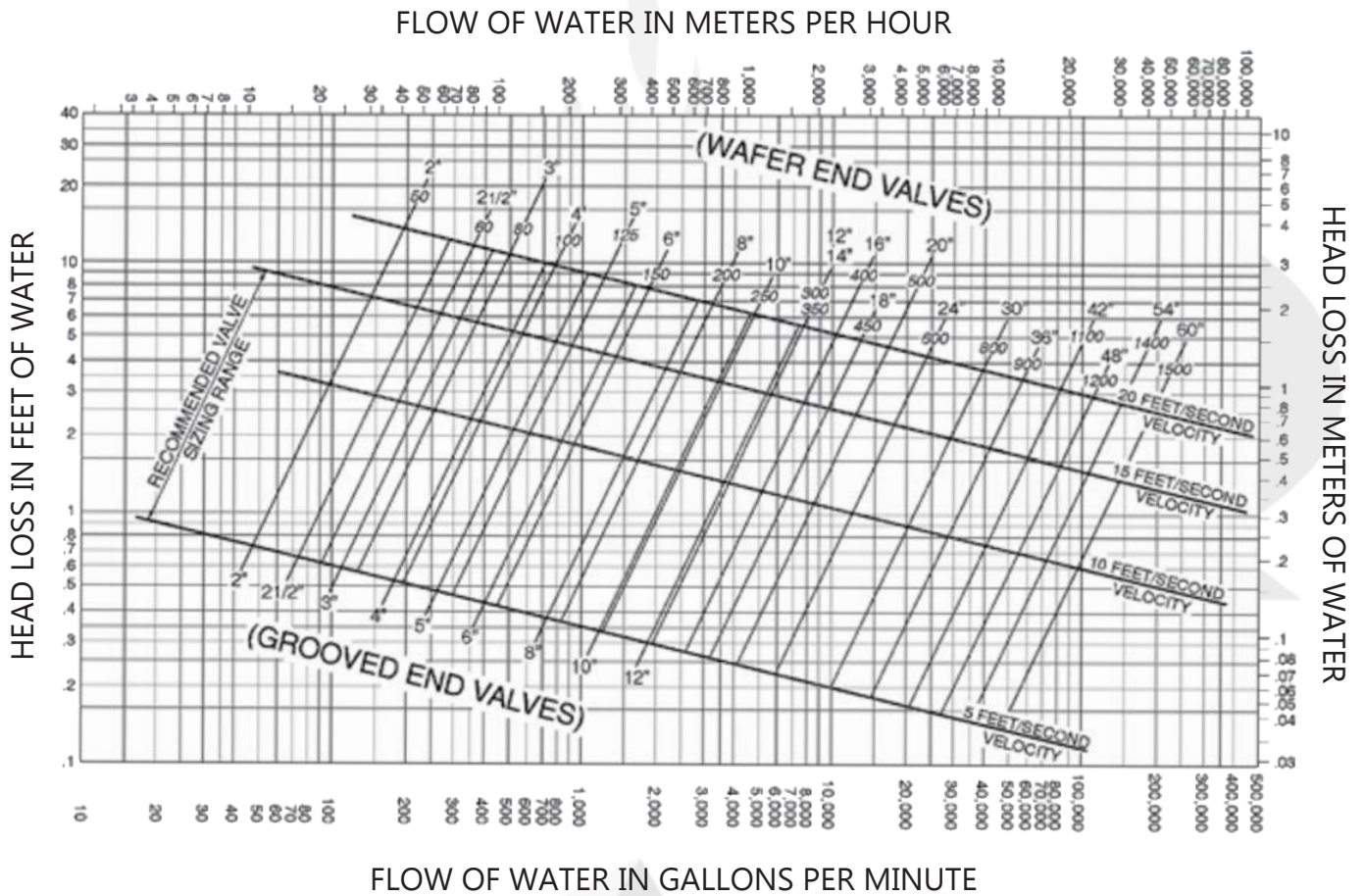
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HEAD LOSS CHART



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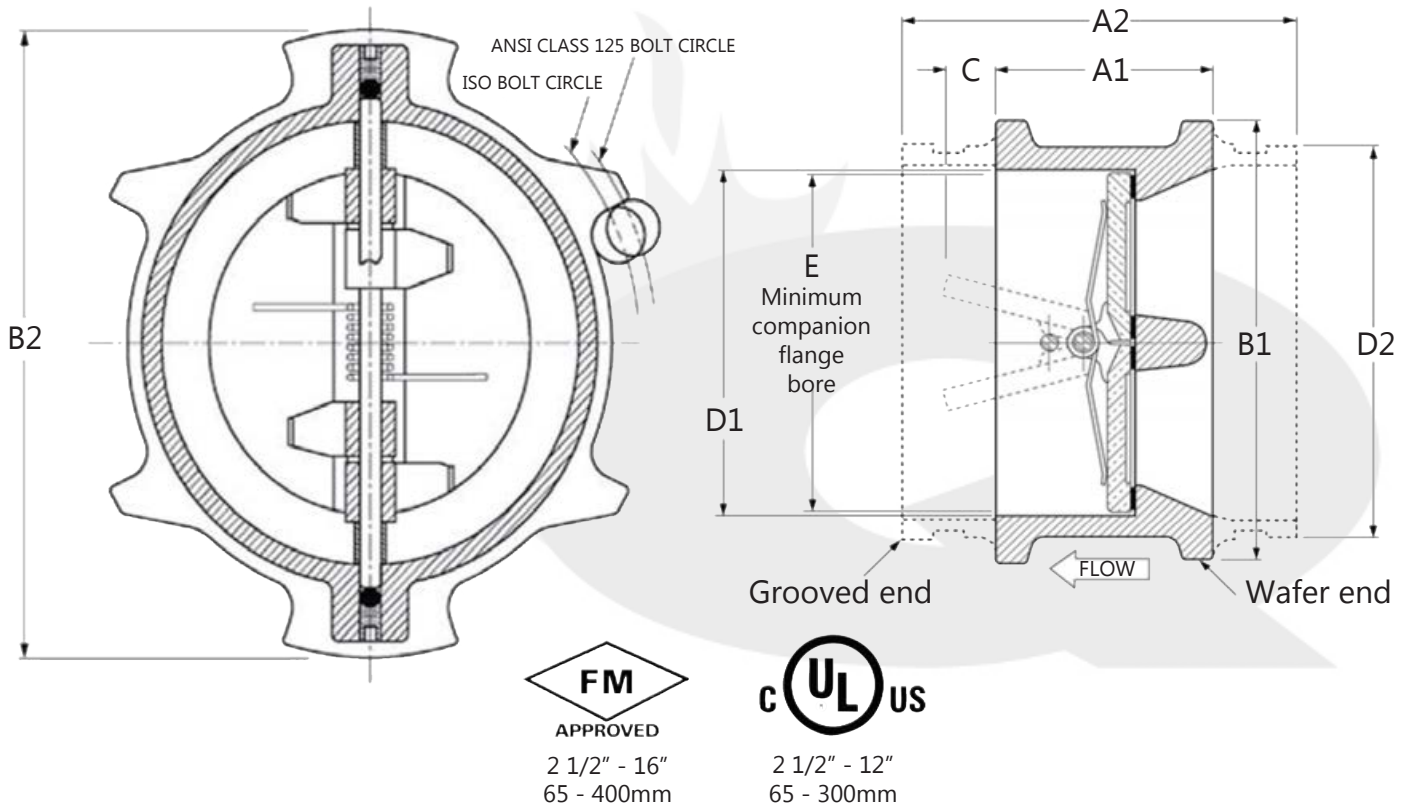
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INSTALLATION DIMENSIONS



Valve Size		A1	A2	B1	B2	C	D1	D2	E	Wafer	Groover
IN	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	kg
2"	50mm	54,0	118,3	104,8	130,2	4,8	65,1	60,3	49,2	1,8	1,8
2 1/2"	65mm	60,3	124,6	123,8	142,9	7,9	77,8	73,0	58,7	2,3	2,3
3"	80mm	66,7	134,9	136,5	136,5	12,7	93,7	88,9	73,0	3,2	3,6
4"	100mm	66,7	136,5	174,6	196,9	25,4	117,5	114,3	98,4	4,1	4,1
5"	125mm	82,6	145,3	196,9	192,1	28,6	144,5	141,3	122,2	5,9	5,9
6"	150mm	95,3	152,4	22,3	219,1	31,8	171,5	168,3	146,1	8,6	8,2
8"	200mm	127,0	170,7	279,4	311,2	33,3	222,3	219,1	193,7	17,2	13,6
10"	250mm	139,7	197,6	339,7	349,3	63,5	276,2	273,1	242,9	29,5	25,4
12"	300mm	181,0	208,0	409,6	441,3	60,3	327,0	323,9	288,9	42,6	36,7
14"	350mm	184,2	N/A	450,9	N/A	82,6	365,1	N/A	317,5	84,8	N/A
16"	400mm	190,5	N/A	514,4	N/A	114,3	415,9	N/A	381,0	122	N/A
18"	450mm	203,2	N/A	549,3	N/A	136,5	466,7	N/A	431,8	150	N/A
20"	500mm	212,7	N/A	606,4	N/A	161,9	514,4	N/A	482,6	192	N/A
24"	600mm	222,3	N/A	717,6	N/A	215,9	616,0	N/A	584,2	267	N/A
30"	800mm	304,8	N/A	882,7	N/A	241,3	762,0	N/A	723,9	504	N/A
36"	900mm	368,3	N/A	1.048	N/A	304,8	914,4	N/A	876,3	846	N/A
42"	1.050mm	431,8	N/A	1.219	N/A	349,3	1.067	N/A	1.029	1.310	N/A
48"	1.200mm	523,9	N/A	N/A	1.511	431,8	1.219	N/A	1.181	2.506	N/A
54"	1.350mm	539,8	N/A	N/A	1.683	508,0	1.372	N/A	1.334	3.175	N/A
60"	1.500mm	660,4	N/A	N/A	1.854	482,6	1.524	N/A	1.486	4.580	N/A

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