

Optimum Flow Conditions

Aseptic Diaphragm Valves - Valve Bodies

Standard design

The valve body is available in a number of configurations and options. The seat and pipe connections are the parts determining the size of the valve body.

The seat area is where the diaphragm seals against the valve body. The valve bodies are available in 7 different seat sizes, and each seat size is available in up to 3 different port sizes.

The seat size determines which diaphragm size and actuators that fit the valve body.

The most common body configuration is the 2-way valve body that works as a typical on-off valve.

The standard tube connections have welding ends designed to provide the optimum conditions for orbital welding. The lengths of the welding ends are suitable for mounting and welding in most orbital welding machines available in the market.

On request a number of connections are available eg. clamp, aseptic unions and flanges.

Materials

All our valve bodies are made of 1.4435 (316L), optional they are available with low Ferrite contents, $fe < 0.5\%$ (BN 2). Upon request other material is available.

The valve bodies are available in forged or investment casting production method.

Surface finishes

The standard internal surface finishes of the aseptic diaphragm valve bodies are $Ra \leq 0.8\mu m$ and $Ra \leq 0.4\mu m$.

On request the internal surface finishes of $Ra \leq 0.6\mu m$ and $\leq 0.25\mu m$ are available.

For all the above specifications the external surface finish is blasted.

The investment casted version is also available in a raw quality 6.3. All surface finishes can additionally be applied with electropolishing.



Tube standards

The standard pipe connection of the aseptic diaphragm valve is according to the DIN 11866 standard:

DIN 11866 range A dimensions acc. to DIN 11850 range 2

DIN 11866 range B dimensions acc. to ISO 1127

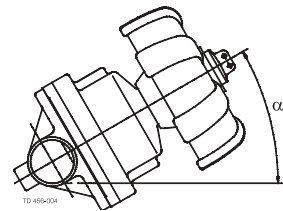
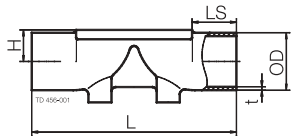
DIN 11866 range C dimensions acc. to ASME BPE

Further the pipe dimensions of JIS 3459 is in the standard range.

On request other options are available eg. DIN 11850 range 1 and 3, SMS 3008 and BS OD 4825.

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Dimensions 2-way valve bodies



Forged

Seat					DIN 11866 A (DIN 11850 range 2)	DIN 11866 B (ISO 1127)	DIN 11866 C (ASME BPE)	JIS 3459					
Size	DN	H	L	LS min.	OD x t	$\alpha^{1)}$	$K_v^{2)}$	OD x t	α°	K_v	OD x t	α°	K_v
8	6	8	72	20							10.5 x 1.2	25	1
8	8	8	72	20				13.5 x 1.6	19	2.5	6.35 x 0.89	34	1
8	10	12	72	20	13 x 1.5	19	2.5				9.53 x 0.89	26	1.8
8	15	12	72	20							12.7 x 0.89	21	2.4
10	10	13	108	25	13 x 1.5	24	3.0	17.2 x 1.6	16	3.9			
10	15	13	108	25	19 x 1.5	12	4.0	21.3 x 1.6	7	5.3	12.7 x 1.65	25	
10	20	16	108	25							19.05 x 1.65	13	4.5
25	15	13	120	25	19 x 1.5	33	10.5	21.3 x 1.6	31	11	12.7 x 1.65	40	4.8
25	20	16	120	25	23 x 1.5	28	11	26.9 x 1.6	24	12.5	19.05 x 1.65	33	10
25	25	19	120	25	29 x 1.5	21	13	33.7 x 2	17	21	25.4 x 1.65	26	11.5
40	32	24	153	25	35 x 1.5	25	38	42.4 x 2	19	43	42.7 x 2.80	20	
40	40	26	153	25	41 x 1.5	19	43	48.3 x 2	14	50	38.1 x 1.65	22	40
50	50	32	173	30	53 x 1.5	18	59	60.3 x 2	14	64	50.8 x 1.65	20	58
80	65	61	216	30	70 x 2	18	87	76.1 x 2	16	95	63.5 x 1.65	21	85
80	80	62	254	30	85 x 2	12	110	89.9 x 2.3	11	127	76.2 x 1.65	16	110
100	100	76	305	30	104 x 2	14	190	114.3 x 2.3	11	205	101.6 x 2.11	15	185

Investment cast

Seat					DIN 11866 A (DIN 11850 range 2)	DIN 11866 B (ISO 1127)	DIN 11866 C (ASME BPE)	JIS 3459					
Size	DN	H	L	LS min.	OD x t	α°	K_v	OD x t	α°	K_v	OD x t	α°	K_v
8	6		72	20							10.5 x 1.2	27	1
8	8		72	20				13.5 x 1.6	21	2.5	6.35 x 0.89	36	1
8	10		72	20	13 x 1.5	22	2.5				9.53 x 0.89	28	1.8
8	15		72	20							12.7 x 0.89	23	2.4
10	10		108	25	13 x 1.5	28	3.0	17.2 x 1.6	20	3.9			
10	15		108	25	19 x 1.5	17	4.0	21.3 x 1.6	12	5.3			
10	20		108	25							19.05 x 1.65	17	4.5
25	15		120	25	19 x 1.5	43	10.5	21.3 x 1.6	40	11	12.7 x 1.65	51	4.8
25	20		120	25	23 x 1.5	34	11	26.9 x 1.6	29	12.5	19.05 x 1.65	39	10
25	25		120	25	29 x 1.5	24	13	33.7 x 2	19	21	25.4 x 1.65	28	11.5
40	32		153	25	35 x 1.5	28	38	42.4 x 2	22	43			
40	40		153	25	41 x 1.5	21	43	48.3 x 2	16	50	38.1 x 1.65	24	40
50	50		173	30	53 x 1.5	21	59	60.3 x 2	16	64	50.8 x 1.65	22	58
80	65		216	30	70 x 2		87	76.1 x 2		95	63.5 x 1.65		85
80	80		254	30	85 x 2		110	89.9 x 2.3		127	76.2 x 1.65		110
100	100		305	30	104 x 2		190	114.3 x 2.3		205	101.6 x 2.11		185

1) Calculated angle for optimum drainage

2) Calculated average K_v values

Other body combinations

T-valve body:

Alfa Laval also offers T-valve bodies where the weir of the T-valve is as close as possible to the internal contour of the main tube and thereby almost dead leg free. T-valve bodies are also available for sampling for main rings \geq DN50 and outlets $<$ DN15.

**Ordering**

The valves are sold as complete valves and the item numbers for the standard program are included in the ordering leaflets. For other configurations please specify:

- Port size
- Seat Size
- Body configuration
- Tube standard
- Connection
- Surface finish
- Stainless steel quality
- Diaphragm material
- Actuator type
- Additional options

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Tank outlet valve body:

Alfa Laval also offers compact free tank outlet valves with optimum dead leg and drainage capabilities. The tank outlet valve body is machined from a single piece of block material and is available both as tank bottom valve and tank wall valve.



GMP and SAP Configurations:

Basically the arrangement consists of two valves welded together to suit the respective application providing maximum functionality in a restricted area. The dead space is reduced to a minimum in the GMP and SAP valves.

