



# Aseptic Tank bottom valves



Sanitary  
flow  
equipment

# SELF-DRAINING 10° TANK BOTTOM VALVES

## RADIAL SEATED DIAPHRAGM

Designed for pharmaceutical and biopharmaceutical applications, the radial seated diaphragm valves combine the best features of a piston valve with the inherent cleanability of a standard flat diaphragm valve.

### Aseptic design for pharmaceutical applications

All materials of construction conform to FDA and cGMP requirements.

The valve is completely self-draining and without dead legs.

All moving parts in the actuator are completely isolated from contact with the process.

**Available Sizes:** 3/4" (19,05), 1"(25,4), 1 1/2" (38,1), 2" (50,8), 3" (76,2), 4" (101,6).

### Pressure directive

The bodies are designed according to PED Directive 2014/68/EU for Europe, ASME VIII Div.2 for US and F.E.M. (Finite Element Method) calculated, approved and certified by notified body. The valve body is machined from solid round bar in AISI 316L 1.4404 as standard, other materials 1.4435 or Hastelloy available upon request.

### Optionals:

- ATEX certification according to the **European Directive 2014/34/EU**
- CIP / SIP connection
- Proximity switch for indication of open/close valve position
- Customized welding plate
- Integrated CIP / SIP satellite valve
- Electropolishing
- Level gear box for manual actuator
- Adjustable flow regulator/manual override
- Assembling tightening tool for locking ring
- Special materials

The diaphragms are available in:

- Silicone certified FDA
- TFM PTFE™ certified FDA and USP Class VI

The outlet connection is flush to the diaphragm to minimize hold-up volume, the standard outlet connection on the valve body is designed with a 45° angle to the horizontal axis and with an ASME BPE clamp ferrule, other optional end connections upon request include ISO/ DIN connections. The 45° angle outlet facilitate the ease of fit-up and permit using standard tubing to connect.

Available with manual thermoplastic handwheel ergonomically designed to provide ease of operation or with thermoplastic pneumatic actuator, as standard for general purpose use. Stainless steel handwheel or stainless steel pneumatic actuators are available upon request.

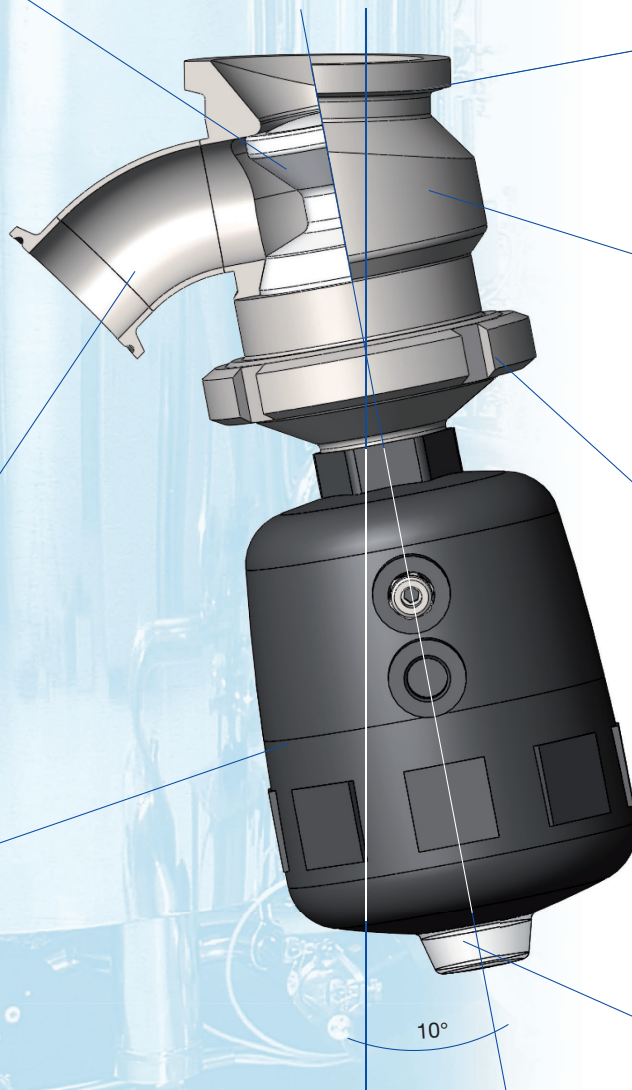
The welding pad of the body is conceived to be flush welded to the vessel bottom, resulting as an integral part of the tank surface, for preventing stagnation of the media.

Upon request a CIP/SIP port can be integrated into the valve body, providing access to the internal contact surfaces of the valve as well as downstream piping. With the same purpose, also a satellite valve can be integrated into the valve body.

The method of installation for both the manual and automatic bonnet assemblies is through a bonnet adapter ring which is easily tightened or loosened utilizing a standard sector wrench facilitating the maintenance.

A bright red indicator provides positive indication of closed and open position, standard for all actuators. The pneumatic actuators can be integrated with mechanical or inductive limit switch box.

The 10° vertical angle enhances drainability while minimizing the internal cavity within the vessel. Completely cleanable and sterilizable design.

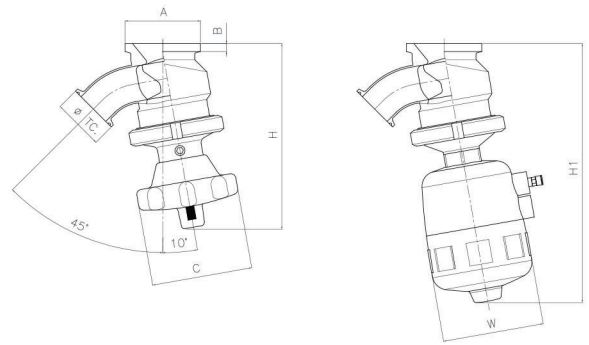


# SELF-DRAINING 10° BODY

## VAA - Tank Bottom Flush Welded Body



DIAPHRAGM  
 # = X Silicone (till 2" only)  
 # = T TFM PTFE  
 ACTUATOR  
 \*\* = MD manual thermoplastic  
 \*\* = PB pneumatic thermoplastic n.c.



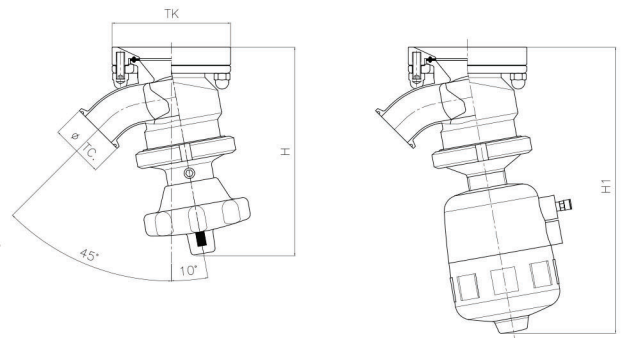
Dimensions table

CODE	INCH	DN	ØTC	ID	A	B	C	H	W	H1
VAA-075AH-##*-71A	3/4"	20	25	15,75	50	6	50	86	53	145
VAA-100AJ-##*-71A	1"	25	50,4	22,1	60	8	100	170	80	215
VAA-150AM-##*-71A	1 1/2"	40	50,4	34,8	75	8	100	185	101	260
VAA-200AN-##*-71A	2"	50	64	47,5	115	10	100	195	126	320
VAA-300AP-##*-71A	3"	80	91	72,9	125	12	100	240	211	400
VAA-400AR-##*-71A	4"	100	119	97,4	170	15	/	/	261	450

## VAK - Removable Body for TKC/TC Connections



DIAPHRAGM  
 # = X Silicone (till 2" only)  
 # = T TFM PTFE  
 ACTUATOR  
 \*\* = MD manual thermoplastic  
 \*\* = PB pneumatic thermoplastic n.c.



Dimensions table

CODE	INCH	DN	ØTC	ID	TK	ØTK	H	H1
VAK-075AH-##*-71A	3/4"	20	25	15,75	1 1/2"	85	100	160
VAK-100AJ-##*-71A	1"	25	50,4	22,1	2"	100	185	226
VAK-150AM-##*-71A	1 1/2"	40	50,4	34,8	2 1/2"	112	200	270
VAK-200AN-##*-71A	2"	50	64	47,5	4"	170	210	335
VAK-300AP-##*-71A	3"	80	91	72,9	4"	170	255	415
VAK-400AR-##*-71A	4"	100	119	97,4	6"	220	/	470

## NET VOLUME OF VALVE BODY CAVITY WITH PTFE DIAPHRAGM INSTALLED

Tank bottom valve body available in the following type:

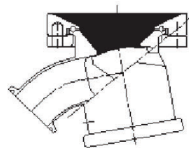
VAA

10° Angled body to be welded



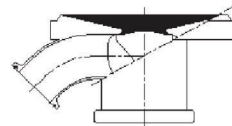
VAK

10° Angled TK removable body



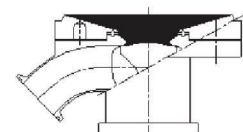
VAF

Straight body to be welded



VAR

Removable flanged body



Net volume in ml

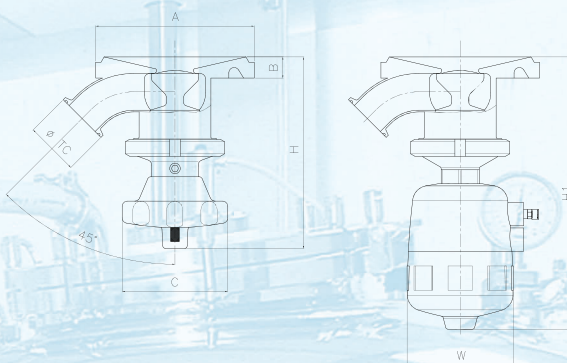
Valve Code/Size	INCH	DN	VAA	VAK	VAF	VAR
VA...-075AH...	3/4"	20	6	34	3	Not available
VA...-100AJ...	1"	25	12	53	24	30
VA...-150AM...	1 1/2"	40	26	86	76	95
VA...-200AN...	2"	50	51	210	119	177
VA...-300AP...	3"	80	167	326	277	432
VA...-400AR...	4"	100	567	1055	557	1393

# STRAIGHT BODY

## VAF - Tank Bottom Flush Welded Body



DIAPHRAGM  
 # = X Silicone (till 2" only)  
 # = T TFM PTFE  
 ACTUATOR  
 \*\* = MD manual thermoplastic  
 \*\* = PB pneumatic thermoplastic n.c.



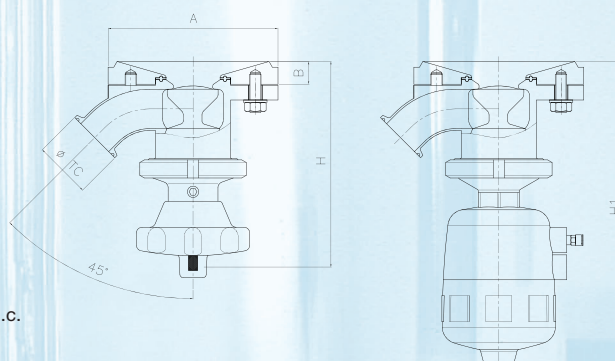
Dimensions table

CODE	INCH	DN	ØTC	ID	A	B	C	H	W	H1
VAF-100-025AJ-***-71A	1"	25	50,4	22,1	100	25	100	175	80	220
VAF-150-030AM-***-71A	1 1/2"	40	50,4	34,8	150	30	100	210	101	270
VAF-200-030AN-***-71A	2"	50	64	47,5	180	30	100	210	126	330
VAF-300-035AP-***-71A	3"	80	91	72,9	200	35	100	245	211	405
VAF-400-040AR-***-71A	4"	100	119	97,4	250	40	/	/	261	435

## VAR - Removable Flanged Body



DIAPHRAGM  
 # = X Silicone (till 2" only)  
 # = T TFM PTFE  
 ACTUATOR  
 \*\* = MD manual thermoplastic  
 \*\* = PB pneumatic thermoplastic n.c.



Dimensions table

CODE	INCH	DN	ØTC	ID	A	B	H	H1
VAR-100AJ-***-71A	1"	25	50,4	22,1	100	20	180	225
VAR-150AM-***-71A	1 1/2"	40	50,4	34,8	150	25	195	275
VAR-200AN-***-71A	2"	50	64	47,5	180	30	220	340
VAR-300AP-***-71A	3"	80	91	72,9	200	35	250	415
VAR-400AR-***-71A	4"	100	119	97,4	300	40	/	465

## AVAILABLE RADIAL DIAPHRAGMS



STANDARD

Material: SILICONE  
 Code: MVA-X  
 Available size: 3/4"-2"



Material: TFM PTFE™  
 Code: MVA-T  
 Available size: 3/4"-4"



BELLOW ON REQUEST

Material: TFM PTFE™  
 Code: MSVA-T

Double stroke for high viscosity media



Material: TFM+INOX  
 Code: MSVA-T INOX

Aisi 316L safety coating cap with unique O-Ring in FEP for save the TFM from abrasive crystal

Regulatory compliance:

- FDA 21CFR177.1550
- USP Class VI<87> and <88> (70°C and 121° C)
- ADIF animal derived ingredient free

TFM is a registered trademark of Dyneon

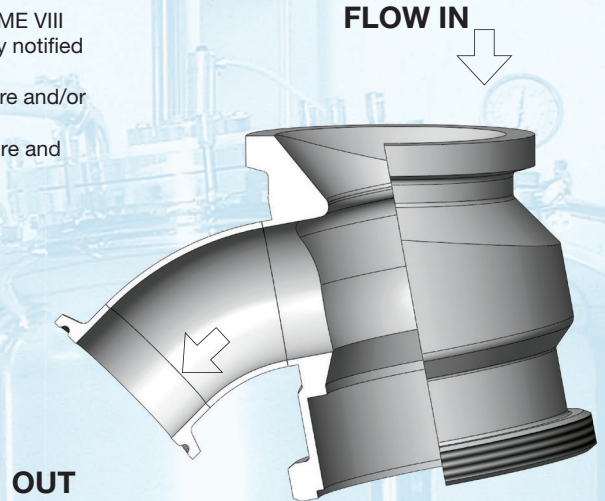
# SELF-DRAINING 10° TANK BOTTOM VALVES BODY – INFORMATION

**Design temperature, valve body:** -10°C to 200°C (-14°F to 392°F)  
**Design pressure, valve body:** 10 bar (145 psi)

The valve body are designed according to PED Directive 2014/68/EU for Europe, ASME VIII Div.2 for US and F.E.M. (Finite Element Method) calculated, approved and certified by notified body.

Warning: the applied diaphragm and actuator may have a different design temperature and/or pressure.

The weakest part in the assembled product set the final, permitted design temperature and pressure limits.



## Available configurations

### STANDARD DESIGN

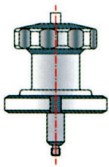
The valves is composed of three following main parts:

- **Actuator** - either manual or pneumatic
- **Diaphragms** - available in Silicone and TFM
- **Valve body** - in line, zero static, tank bottom

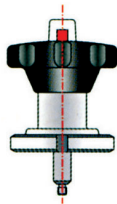
The modular design ensures a wide flexibility and you can combine the three parts in almost any combination.

The manual / pneumatic actuators and body are assembled by a locking ring

**MI**  
STAINLESS  
STEEL  
HANDLE

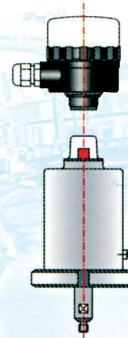


**MD**  
STANDARD  
THERMO PLASTIC  
HANDLE

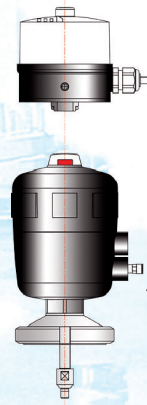


### Manual actuator

MECHANICAL /  
INDUCTIVE  
POSITION INDICATOR  
OPEN-CLOSED



MECHANICAL /  
INDUCTIVE  
POSITION INDICATOR  
OPEN-CLOSED



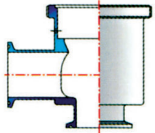
**IS**  
STAINLESS  
STEEL  
PNEUMATIC  
ACTUATOR

**PB**  
THERMO PLASTIC  
PNEUMATIC  
ACTUATOR

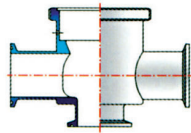
### Pneumatic actuator

### Diaphragms

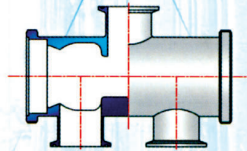
MVA-X Silicone  
MVA-T TFM PTFE



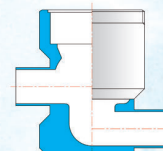
**VAL**  
IN-LINE "L" VALVE BODY



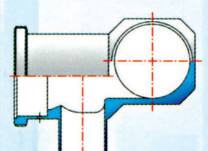
**VAT**  
IN-LINE "T" VALVE BODY



**VA DV DIVERT VALVE**  
VALVE BODY

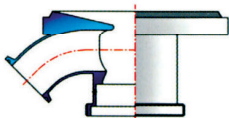


**VA SHUT OFF 180°**  
VALVE BODY

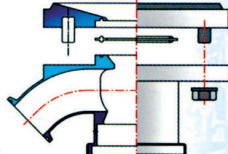


**VZA**  
ZERO STATIC VALVE BODY

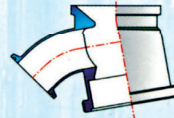
### In line valve body



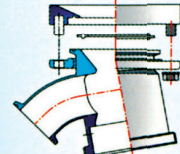
**VAF**  
WELDED BODY



**VAR**  
FLANGED BODY  
REMOVABLE



**VAA**  
WELDED BODY  
10° ANGLED



**VAK**  
REMOVABLE BODY  
10° ANGLED

### Tank bottom



ASEPTIC SAMPLING VALVES



SANITARY SAMPLING VALVES



ASEPTIC SAMPLING BOTTLE



ASEPTIC TANK BOTTOM VALVES



SPRING CHECK VALVES



HIGH PURITY BALL VALVES



BUTTERFLY VALVES



DTS HEAT EXCHANGERS



SIGHT GLASS-FLOW INDICATOR



CLAMP FITTINGS



TANK AND IN-LINE CONNECTIONS



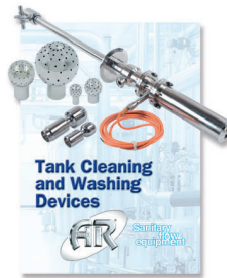
FLEXIBLE HOSES & FITTINGS



MAGNETIC MIXER



HIGH PURITY DIAPHRAGM VALVES



WASHING DEVICES



HYGIENIC RUPTURE DISC



**AERRE INOX s.r.l.**  
Via Gerola, 4  
I-26010 Fiesco (Cremona)  
Tel. +39 0374 370 828 Fax +39 0374 370 833  
[www.aerreinox.it](http://www.aerreinox.it)

Get the information you need and more at [info@erreinox.it](mailto:info@erreinox.it)

