



NEW GENERATION

VDCI MC PMO-C

Mixproof valve designed by DEFINOX

**INNOVATIVE
DESIGN**



**SAFE
TECHNOLOGY**

**COST-SAVINGS
SOLUTION**

The new design of DEFINOX VDCI MC PMO-C mixproof valve meets the 3A recommendations (85-02) in accordance with dairy sanitary requirements.

The PMO-C mixproof valve technology allows two different liquids to cross over in complete safety even during seat lifting operations.

Production no longer needs to completely stop during cleaning operations.

Simple and high-tech design

- No need for an additional seal, thanks to an intermediate plug made from PEEK resistant plastic (FDA approved)
- 3 identical O-rings which avoid risk of confusion between the spare parts during maintenance operations
- The innovative design of the intermediate plug prevents turbulences into the leakage chamber and facilitates its correct positioning onto the lower plug.

Patented solution

- The intermediate plug ensures double protection, even during the seat lifting operations:
 - No risk of mixing between two different liquids
 - Natural vacuum in the leakage chamber, thanks to the patented design of the lower plug, which prevents any CIP solution transfer into the opposite leakage chamber.

3A design

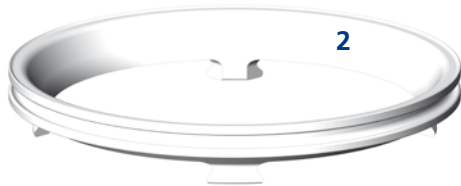
Our valve technology complies with 3A standard 85-02 which allows pasteurized milk in one chamber while CIP solution is flowing into the other chamber, without any risk of cross mixing. Another feature is to provide a leakage section identical to the one of the process pipeline.



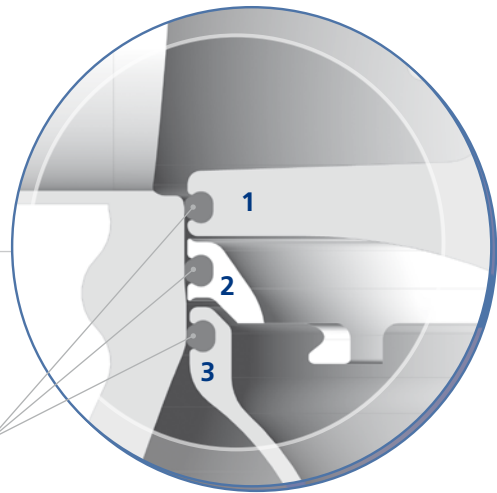
PEEK INTERMEDIATE PLUG

- An intermediate plug "2" is inserted between the lower plug "3" and the upper plug "1" to prevent any risk of contamination between non-compatible products during the seat lifting (such as milk and cleaning solutions).
- This intermediate plug is made from a specific type of natural plastic called PEEK and approved by the FDA. This plastic is more resistant to high temperatures and high pressure.

An intermediate plug made from PEEK



3 identical O-rings



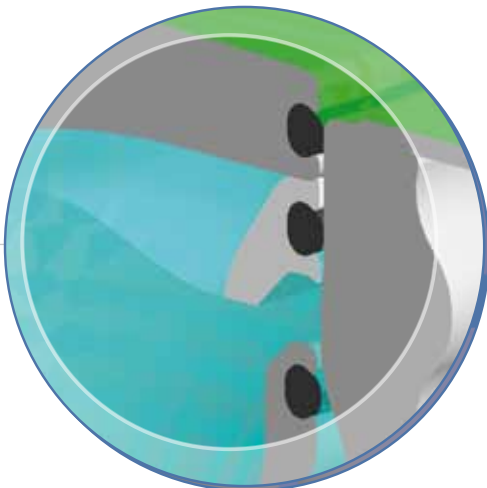
SLIDING O-RINGS

- 3 identical sliding O-ring seals "4" assembled on each plug ensure a perfect sealing during the opening and the closing of the valve. These O-rings offer a double security against the risk of mixing and facilitate the maintenance.

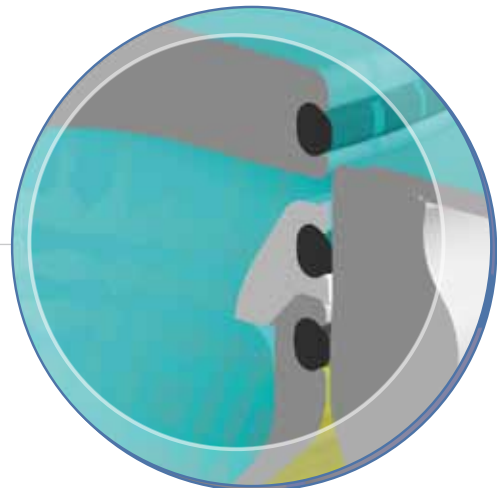
ORIGINAL & INTELLIGENT DESIGN

The legs of the intermediate plug are positioned on the outside diameter to facilitate its centering onto the lower plug. This design prevents turbulences in the leakage chamber.

Lifting of the lower plug



Lifting of the upper plug





ACS control top with 3 solenoid valves and a linear sensor
(detection of lower plug lifting)

Compact actuator machined from solid stainless steel block, common to the complete range of VDCI MC mixproof valve, fitted with quick-fitting pneumatic connections for easy maintenance

Lantern fitted with switch for detection of the upper plug lifting

Robust clamp collar enabling a quick disconnect of the plugs, which facilitates the maintenance

Seal support plate
Flush seals

Upper plug machined from solid stainless steel block
Upper and lower plugs fitted with EPDM or FKM seals

Leak indicator showing faults in the sealing point between the plugs

The counterbalance offers good resistance against water hammer

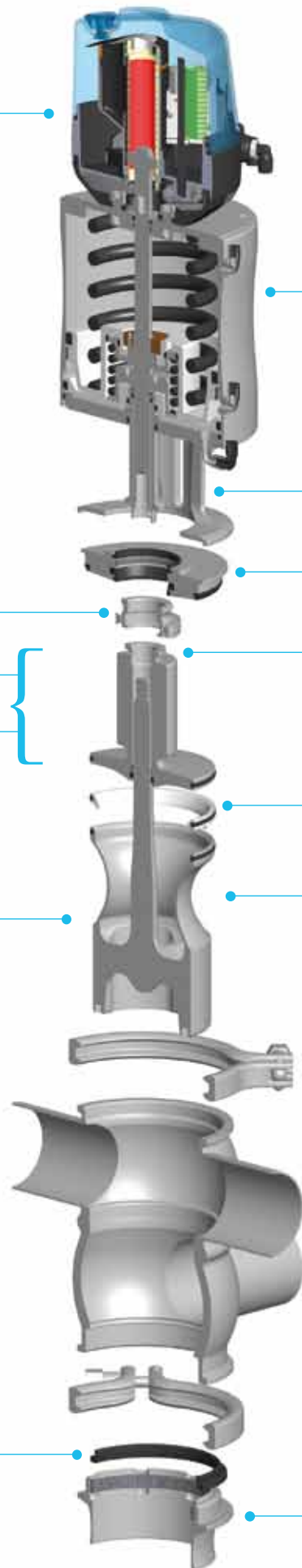
Intermediate plug made from high resistant plastic (PEEK)

Lower plug machined from solid stainless steel block
Leakage section identical to the one of the process pipeline meeting PMO requirements

Body machined from solid stainless steel block guaranteeing excellent resistance against mechanical and thermal distortions
Common body to the other versions of the VDCI MC mixproof valve

Flush seal easy to clean

Cleanable counterbalance cover



Closed phase



Transfer of fluids in the upper line and the lower line with a leakage chamber between the two lines preventing the mixing of two different liquids

Open phase



Transfer of the fluid between the upper line and the lower line

Cleaning of the upper line



Washing of the upper line and of the leakage chamber while operating the upper plug

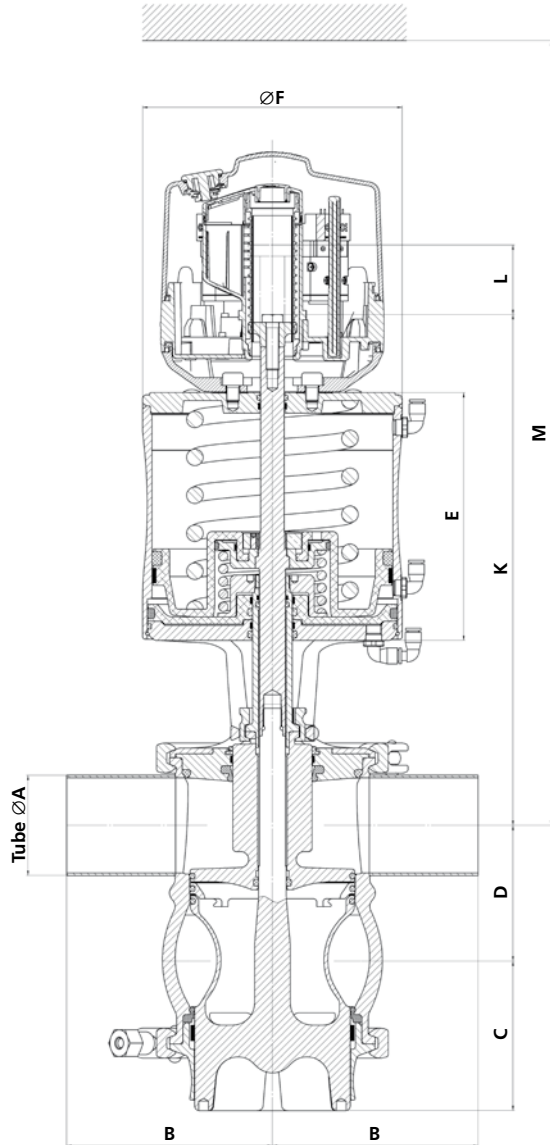
Cleaning of the lower line



Washing of the lower line and of the leakage chamber while operating the lower plug

* Washing of the lower balancer

DIMENSIONS



Working conditions

- Working temperature: **+23°F to 248°F**
(5°C to 120°C)
- Sterilization temperature: **266°F**
(130°C)
- Max. working pressure: **130 psi (9 bar)**
except during
cleaning operations:
101 psi (7 bar)
- Compressed air supply pressure:
from 72 to 101 psi
(from 5 to 7 bar)
with ACS control top.
Up to **116 psi (8 bar)** in direct supply

Roughness

- Interior: **180 grit (0.8 µm)**
- Exterior: **150 grit (1.2 µm)**

Valve VDCI MC PMO-C

Tube ØA	in/mm	B	C	D	E	ØF	L (stroke)	K	M (with control top)	Weight
US 1" 1/2 (34,8/38,1)	in	4.13	3.15	2.17	4.96	5.04	1.02	11.02	16.73	lb 25.35
	mm	105	80	55	126	128	26	280	425	kg 11.5
US 2" (47,5/50,8)	in	4.13	3.46	2.76	4.96	5.04	1.38	11.30	18.58	lb 27.56
	mm	105	88	70	126	128	35	287	472	kg 12.5
US 2" 1/2 (60,2/63,5)	in	5.12	4.05	3.35	6.14	6.46	1.77	13.11	21.61	lb 51.81
	mm	130	103	85	156	164	45	333	549	kg 23.5
US 3" (72,9/76,1)	in	5.12	4.33	3.74	6.14	6.46	1.77	13.39	22.83	lb 52.91
	mm	130	110	95	156	164	45	340	580	kg 24
US 4" (97,4/101,6)	in	6.10	5.55	4.92	7.72	8.58	2.44	16.46	28.94	lb 116.84
	mm	155	141	125	196	218	62	418	735	kg 53

ND	KV FLOW COEFFICIENT			CV FLOW COEFFICIENT			OPENING TIME (s)	AIR CONSUMPTION (NI)
	Low	→	High	Low	→	High		
1" 1/2		50			58		1	1.7
2"		60			70		1	1.7
2" 1/2		105			122		2	3.2
3"		120			139		2	3.2
4"		215			249		3	11

COMMAND AND CONTROL SYSTEMS

The ACS control top offers numerous options to facilitate the control and command of the VDCI MC PMO-C:

- AS-i or multi-voltage interface
- Detection of movements for each plug
- Use of a linear sensor
- Accurate adjustment of the sensor
- Quick disassembly of the control top for easy maintenance

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DETECTION

Linear sensor



- Accuracy to 0.2 mm
- Lifting detection of the lower plug
- Calibration on valve

Proximity switch on lantern



- Lifting detection of the upper plug

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