

Alfa Laval Unique Mixproof PMO Curd CP

Double seat valves

Introduction

The Alfa Laval Unique Mixproof PMO Curd CP Valve is a highly flexible, easy-to-service double block-and-bleed valve that is specially designed for use in dairy applications with very large particles or highly viscous fluids that require large openings up to 1¾" (45 mm) in diameter.

Based on the well proven and exceptionally versatile principle of the Unique Mixproof valves from Alfa Laval, it enables the simultaneous flow of two different products or fluids through the same valve, or the safe handling of one product while seat-lift cleaning operations are being conducted in the other portion of the valve – without the risk of cross-contamination.

The valve provides exceptional spillage-free operation and is compliant with most hygienic standards, including the 3-A Sanitary Standards, the Pasteurized Milk Ordinance and the seat lift requirements of the US Food and Drug Administration. With its modular design and a wide variety of options, the valve can be customized to meet any process requirement and provides low total cost of ownership.

Application

The Unique Mixproof PMO Curd CP Valve is designed for continuous flow management in hygienic processes where product safety is at the top of the agenda. It is widely used across the dairy, food, beverage and many other industries.

Benefits

- Gentle product handling, large particles handling
- Cost-effective, spillage-free operation
- Optimized plant efficiency and enhanced cleanability
- Leakage detection

Standard design

The Unique Mixproof PMO Curd CP Valve is comprised of a series of base components, including valve body, valve plugs, fail-safe actuator, and cleaning options and accessories that support a wide range of applications. Leakage detection holes enable visual inspection without requiring valve disassembly and provide advance notification of parts wear. Few straightforward moveable



parts contribute to reliable operation and reduced maintenance costs.

The valve plugs are balanced and not sensitive to pressure spikes. Both lower and upper seats are position-detectable with the Alfa Laval ThinkTop® sensing and control unit and a yoke-mounted, external sensor.

Available in 4" and 6" tube O.D. sizes, the Unique Mixproof PMO Curd CP valve has an O.D. balancer cleaning element which allows cleaning of the exterior of the lower seat balancer during a lower seat push operation. This eliminates Cleaning-in-Place downtime thereby enabling 24/7 uptime.

Working principle

The Alfa Laval Unique Mixproof PMO Curd CP Valve is a normally closed (NC) valve that is controlled from a remote location by means of compressed air. To separate the two liquids, the valve has two independent plug seals. The space between the two seals forms an atmospheric leakage chamber. In the rare case of

accidental product leakage, the product flows into the leakage chamber and is discharged through the leakage outlet.

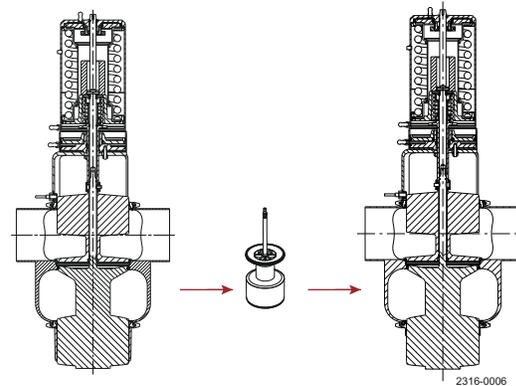
When the valve is open, the leakage chamber is closed. The product can then flow from one line to the other without spillage. The radial design of the valve ensures that virtually no product spillage occurs during valve operation. It is possible to adapt valve cleaning and water hammer protection to the requirements of individual process specifications.

Build-up

This PMO Curd CP edition of the Unique Mixproof valve is a high-end valve with regards to process security as well as from a hygienic point of view. The valve plugs are always balanced in both upper and lower valve body, securing no sensitivity to pressure spikes. The lower and upper seats are position-detectable by the ThinkTop® and a yoke-mounted, external sensor. The Unique Mixproof PMO Curd CP valve is provided with an O.D. balancer cleaning element which allows cleaning of the outside soiled area of the lower seat balancer during a lower seat push operation. This provides around-the-clock

production by eliminating CIP downtime. The Unique Mixproof PMO Curd CP valve is available in 4" and 6" tube O.D. sizes.

Unique Mixproof PMO Curd CP Plug



Unique PMO Curd O.D. Balancer Cleaning Unique Mixproof PMO Curd CP

TECHNICAL DATA

Temperature

Temperature range:	23 °F to +257 °F (Depending on elastomer type)
--------------------	--

Pressure

Max. product pressure:	145 PSI
Min. product pressure:	Full vacuum
Air pressure:	Max. 116 PSI

Air and CIP consumption

Size	OD	
	4"	6"
Cv-value Upper Seat-lift	[gpm/PSI] 5.3	12.1
Cv-value Lower Seat-lift	[gpm/PSI] 6.7	10.2
Air consumption Upper Seat-lift	* [cubic inches] 38	38
Air consumption Lower Seat-lift	* [cubic inches] 13	13
Air consumption Main Movement	* [cubic inches] 216	216

$$Q = Cv \cdot \sqrt{\Delta p}$$

Q = water flow [gpm]

Cv = value from the above table.

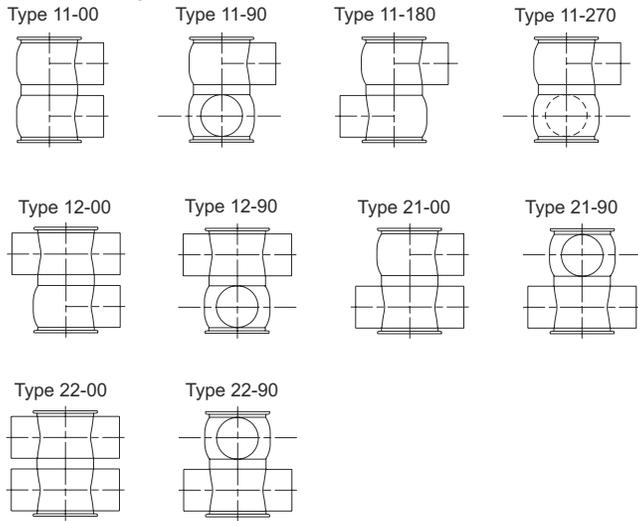
Δ p = water pressure [psi]

PHYSICAL DATA

Materials

Product wetted steel parts:	Acid-resistant steel AISI 316L
Other steel parts:	Stainless steel AISI 304
Product wetted parts:	NBR (std.) EPDM, HNBR or FPM
Other seals:	CIP seals: EPDM Actuator seals: NBR
Surface finish:	External bright/internal polished Ra<32 μ"

Valve body combinations



2316-0007

Ordering

For ordering, contact Alfa Laval.

Control & Indication for both upper and lower seat lift as well as main movement, is given via the ThinkTop® control unit. Please refer to 200006070 EN-US and 200006060 EN-US for further information.

Dimensions (inch)

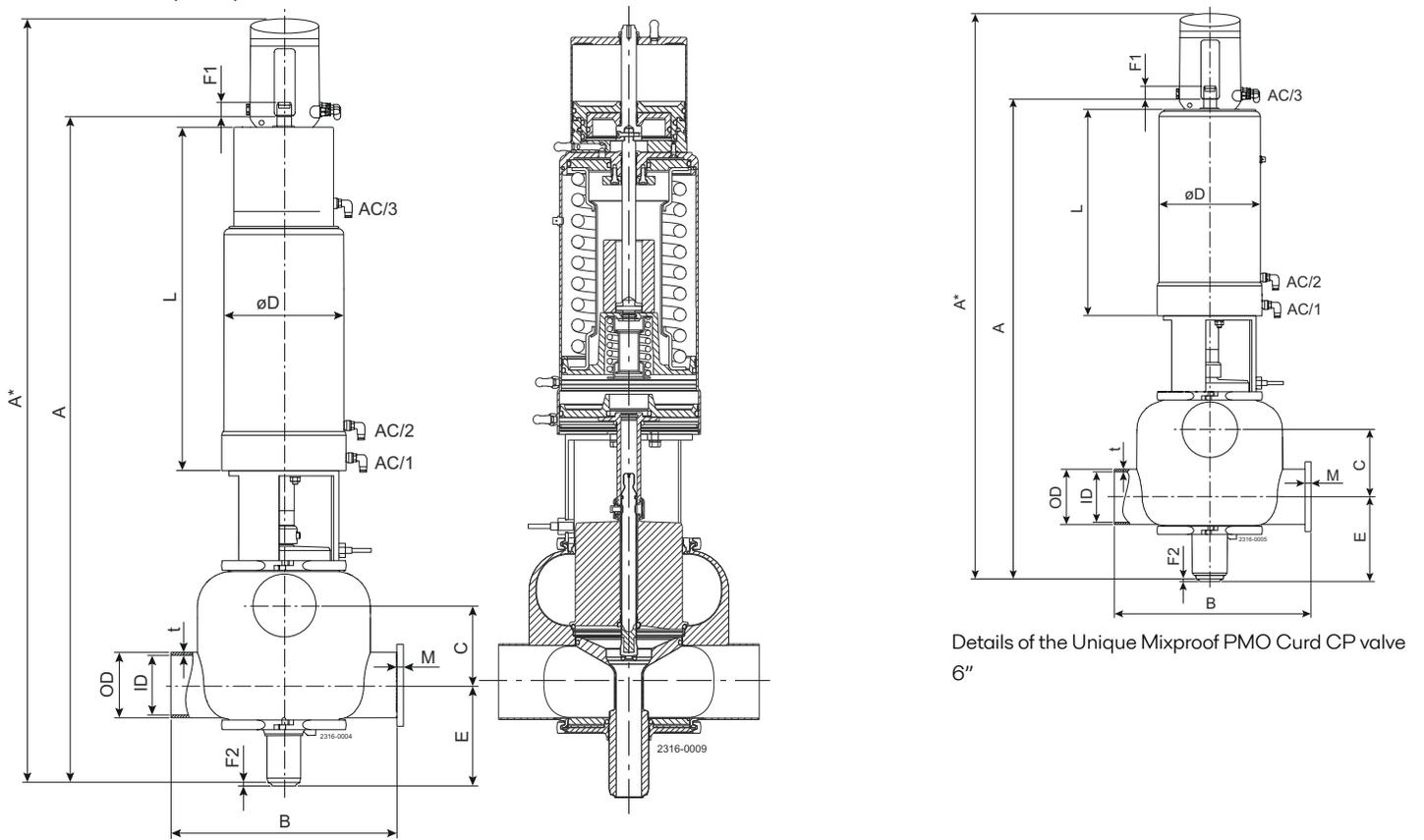


Fig. 1 Details of the Unique Mixproof PMO Curd CP valve 4"

Size	4"	6"
A	40.87	39.45
A*	46.69	46.26
B	13.78	17.32
**C	4.87	6.80
OD	4	6
ID	3.84	5.78
t	0.08	0.11
E	6.54	8.30
F1	2.95	2.95
F2	0.20	0.20
øD	7.32	7.32
L	21.02	14.92
M/Tri-clamp	0.83	1.52
Weight (lb)	143	190



Note!

**The measure C can always be calculated by the formula $C = \frac{1}{2}ID_{upper} + \frac{1}{2}ID_{lower} + 1"$.

Pressure drop/capacity diagrams

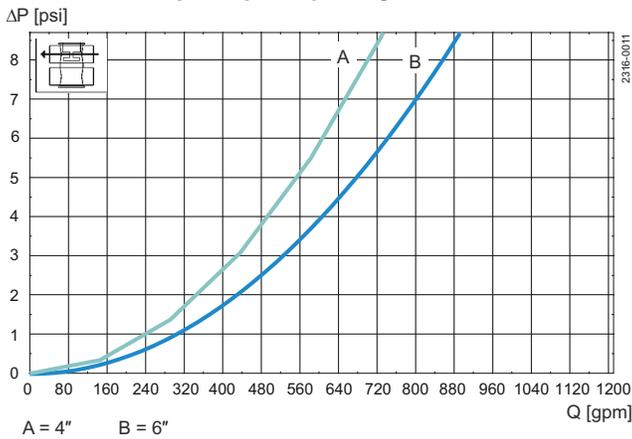


Fig. 2. Pressure drop/capacity diagram, upper bodies.

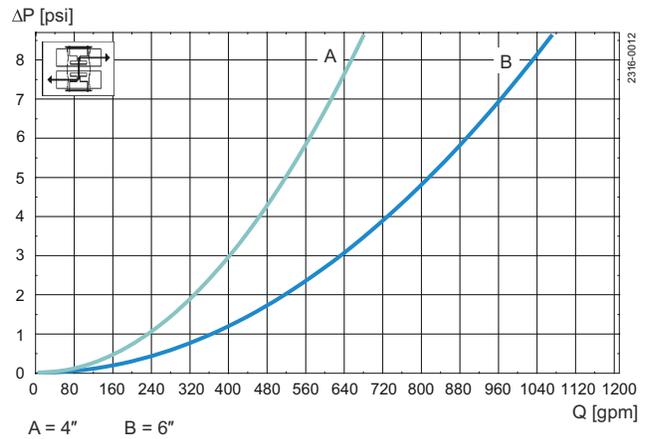


Fig. 3. Pressure drop/capacity diagram, between bodies.

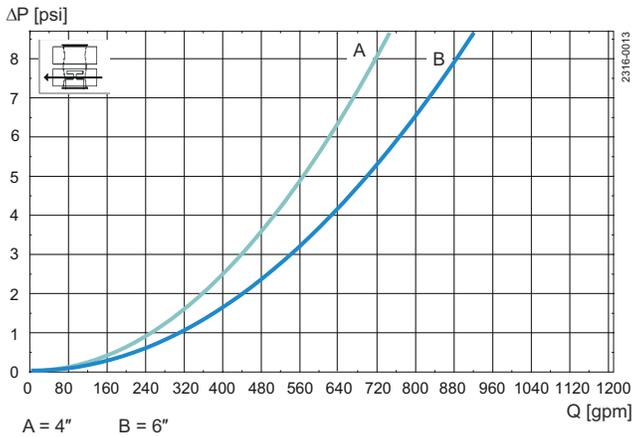


Fig. 4. Pressure drop/capacity diagram, lower body.

Example to determine pressure drop at a given flow rate:

Upper body size:	2". Capacity = 80 gpm
Lower body size:	2". Capacity = 80 gpm
Between bodies:	2". Capacity = 60 gpm

Result:

From fig. 2, $\Delta p = 0.72$ PSI through upper body.

From fig. 3, $\Delta p = 1.1$ PSI between bodies.

From fig. 4, $\Delta p = 0.52$ PSI through lower body



Note!

For the diagrams the following applies:

Medium: Water (68 °F).

Measurement: In accordance with VDI 2173.

This document and its contents are subject to copyrights and other intellectual property rights owned by Alfa Laval AB (publ) or any of its affiliates (jointly "Alfa Laval"). No part of this document may be copied, reproduced or transmitted in any form or by any means, or for any purpose, without Alfa Laval's prior express written permission. Information and services provided in this document are made as a benefit and service to the user, and no representations or warranties are made about the accuracy or suitability of this information and these services for any purpose. All rights are reserved.

200006117-3-EN-US

© Alfa Laval Corporate

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com