CSE Mixproof Valve

Concept 概念

The Unique Mixproof Valve is designed with user flexibility in mind. The customer can choose additional options as required individually; for example higher hygiene demands or higher resistance against physically tough conditions. Please see next page for a graphic overview of the modularity of the Unique Mixproof Valve.
獨特的混合閥門設計考慮到用戶靈活性。 客戶可以根據需要單獨選擇其他選項; 例如更高的衛生要求或更高的抵抗物理上堅韌的條件。 請參閱下一頁，了解獨特混合閥的模塊化圖形概述。

Working Principle 工作準則

Unique is remote-controlled by means of compressed air. The valve is a normally closed (NC) valve.
獨特的是通過壓縮空氣遙控。 該閥是常閉（NC）閥。

The valve has two independent plug seals, forming a leakage chamber between them under atmospheric pressure during every working condition. In case of rare accidental leaking of product, this will flow into the leakage chamber and be 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.
閥具有兩個獨立的插塞密封，在每個工作條件下在大氣壓力下在它們之間形成洩漏室。 如果產品出現罕見的意外洩漏，則會流入洩漏室並通過洩漏出口排出。 當閥打開時，洩漏室關閉。 產品然後可以從一條線路流向另一條線路。

The valve can be cleaned and water hammer protected to any level according to the needs in the specific process. There is virtually no spillage of product when operating the valve.
根據具體過程的需要，可以對閥門進行清洗和水錘保護。 操作閥門時，幾乎沒有產品溢出。

TECHNICAL DATA 技術數據

Max. product pressure: . . . . . 1000 kPa (10 bar)
Min. product pressure: . . . . . Full vacuum.
Temperature range: . . . . . -5°C to +125°C (Depending on rubber quality)
Air pressure: . . . . . Max. 800 kPa (8 bar).

PHYSICAL DATA 物理數據

Product wetted steel parts: 1.4404 (316L)
Other steel parts: 1.4301 (304)

Surface finish choose from the following:
Internal/external semi-bright . . . . . Ra<1.6
Internal Bright (polished) . . . . . Ra<0.8
Internal/external Bright (internal polished) . . . . . Ra<0.8
Note! The Ra values are only for the internal surface.

Product wetted seals: . . . . . EPDM

Other seals:
CIP seals: . . . . . NBR
Actuator seals: . . . . . NBR
Guide strips: . . . . . PTFE

Valve body combination 閥體組合

Valve body combinations, example: type 11-00

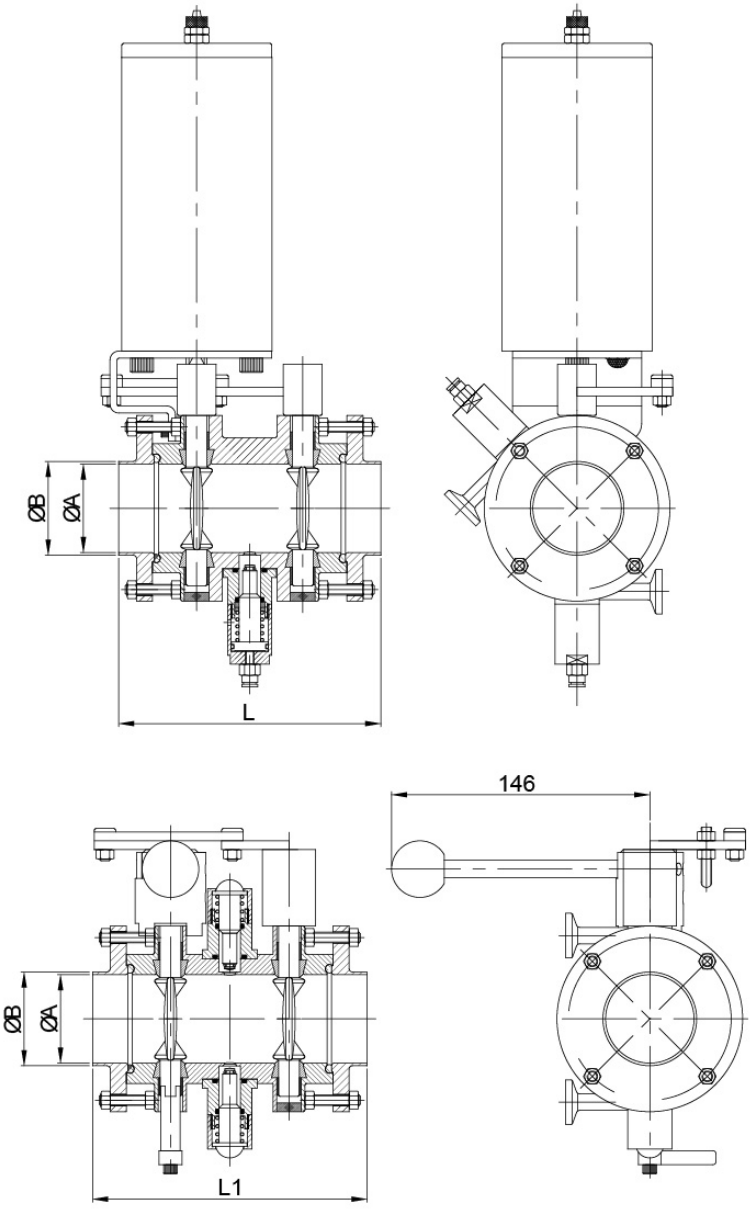
1 Number of ports - lower valve body
1 Number of ports - upper valve body
00 Angle between ports

SpiralClean 螺旋清潔

The SpiralClean system to clean the upper and lower balanced plugs and leakage chamber. The system cleans more efficiently, uses less cleaning fluid by ensuring that a directional flow of CIP fluid reaches all the surfaces in much less time than with conventional systems SpiralClean.

系統清潔上下平衡塞和洩漏室。該系統通過確保 CIP 流體的定向流以比常規系統更少的時間到達所有表面而更有效地清潔，使用更少的清潔流體。

Size flexibility 尺寸靈活性



DIN

SIZE	ØA	ØB	L	L1
DN40	37	40	143	150
DN50	49	52	148	155
DN65	66	70	160	167
DN80	81	85	176	183
DN100	100	104	200	207

Imperial

SIZE	ØA	ØB	L	L1
1.5"	34.8	38.1	143	150
2.0"	47.5	50.8	148	155
2.5"	60.2	63.5	160	167
3.0"	72.9	76.2	176	183
4.0"	97.4	101.6	200	207

The Unique Mixproof concept offers balanced and unbalanced plugs, seat lift, CIP for the plugs and leakage chambers and any combination in between.
獨特的混合概念提供平衡和不平衡插頭，座椅升降，插頭和洩漏室的 CIP 以及它們之間的任何組合。
ISO 51 (2")/ISO 76.1 (3"), 11-90, with spiral clean on lower unbalanced plug, group 3 basic actuator incl. seat lift and seat push ISO 51（2"）/ ISO 76.1（3"）· 11-90.
下部不平衡插頭上的螺旋清潔，3 組基本執行器，座椅提升和座椅推動。
ISO 76.1(3")/ISO 51 (2"), 22-90, with lower balanced plug, basic actuator incl. seat lift and seat push ISO 76.1（3"）/ ISO 51（2"）· 22-90.
帶平衡插頭，基本執行器，座椅提升和座椅推動。
ISO 76.1(3")/ISO 51 (2"), 22-90, with lower balanced plug, basic actuator incl. seat lift and seat push ISO 76.1（3"）/ ISO 51（2"）· 22-90.
帶較低平衡插頭，座椅提升和座椅推動。
ISO 63.5 (2½"), 22-90, with spiral clean on leakage chamber, unbalanced plugs, group 5 basic actuator ISO 63.5（2½"）· 22-90.
在洩漏室上有螺旋清潔，不平衡插頭，組 5 基本執行器。
ISO 63.5 (2½"), 22-90, with lower balanced plug, group 4 basic actuator incl. seat lift and seat push ISO 63.5（2½"）· 22-90.
帶較低平衡插頭，第 4 組基本執行器，座椅提升和座椅推動。

Selection guide 選擇指南

The drawings below give an overview of all options when choosing the valve to fit your process, thus demonstrating the actual flexibility of the Unique Mixproof Valve.
下圖提供了選擇閥門以適應過程時的所有選項的概述，從而展示了獨特混合閥的實際靈活性。

Balancing flexibility 平衡靈活性

Lower balanced plug 下平衡插頭
Upper balanced plug 上平衡插頭
Upper and lower balanced plugs 上下平衡插頭
Balanced lower and upper plug. 平衡的下插頭和上插頭。

Hygienic flexibility (spiral clean options) 衛生靈活性（螺旋清潔選項）

External CIP of leakage chamber 洩漏室的外部 CIP
External CIP of leakage chamber, upper and lower unbalanced plug 洩漏室，上下不平衡插頭的外部 CIP
External CIP of leakage chamber, upper and lower balanced plug 洩漏室外部 CIP，上下平衡插頭

Standard configurations 標準配置

To assist you in the selection we have included some standard configurations: 為了幫助您進行選擇，我們提供了一些標準配置：
Unique Basic 唯一基本
Unique Seat Clean 獨特的座椅清潔
Unique High Clean 獨特高清
Unique Ultra Clean 獨特的超潔淨
You can either choose these directly or add additional features ensuring that the valve suits your specific needs.
您可以直接選擇這些或添加其他功能，以確保該閥適合您的特定需求。

Unique Basic has the basic components, providing significant safety and leakage detection. 具有基本組件，提供顯著的安全和洩漏檢測。.
Actuator without seatlift. 無座提升的執行機構。
Unbalanced plugs. 不平衡插頭。
No SpiralClean of leakage chamber or plugs. 無螺旋清洗洩漏室或堵頭。

Unique SeatClean meets the typical demands of a process valve in the food and drink industry. 滿足食品和飲料行業中過程閥的典型需求。
Actuator with seat lift integrated 集成座提升裝置的執行器。.
Balanced lower plug, Unbalanced upper plug. 平衡下插頭，不平衡上插頭。
No SpiralClean of leakage chamber or plugs. 無螺旋清洗洩漏室或塞子。

Unique HighClean is sure to meet your processing needs when dealing with sticky products or if no recontamination can be accepted at all. 在處理粘性產品時或者如果根本不接受再次污染時，一定能滿足您的加工需求。

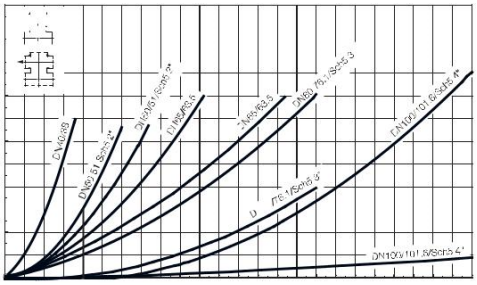
Actuator without seatlift integrated. 沒有座提升裝置的執行機構。
Balanced lower and upper plug. 平衡的下插頭和上插頭。
SpiralClean of leakage chamber as well as of upper and lower plug. 螺旋清潔洩漏室以及上下塞。

Unique UltraClean meets the highest demands for hygienic processing. It has: 滿足衛生加工的最高要求。它有：
Actuator with seat lift integrated. 集成座提升裝置的執行器。
Balanced lower and upper plug. 平衡的下插頭和上插頭。
SpiralClean of leakage chamber, upper and lower plug 螺旋清潔室，上下塞子。.

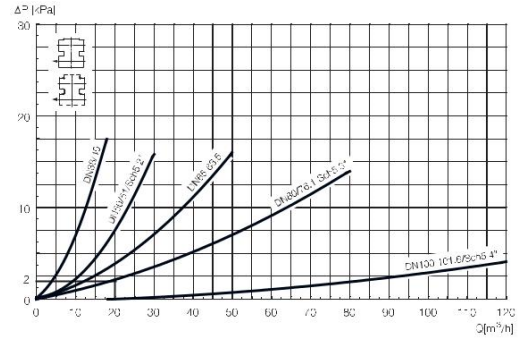
Options 選項

Male parts or clamp liners in accordance with required standard. 陽部件或夾緊襯墊符合要求的標準。
Control and Indication: IndiTop, ThinkTop or ThinkTop Basic. 控制和指示：IndiTop，ThinkTop 或 ThinkTop Basic。
Side indication for detection of upper seat lift. 側面指示，用於檢測上部座椅升降。
Product wetted seals in HNBR, NBR or FPM HNBR，NBR 或 FPM 中的產品潤濕密封。
Various internal/external surface finish. 各種內部/外部表面光潔度。
3A (sanitary standard) on request 3A. 3A（衛生標準）根據要求 3A（衛生標準）。
Mixed housing. 混合住房。

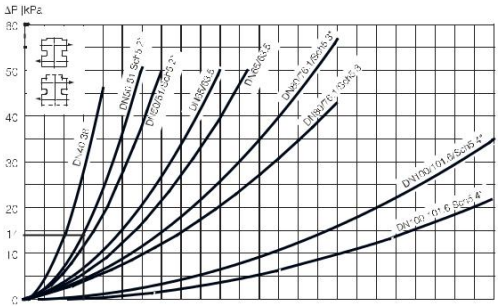
Pressure drop/capacity diagrams 壓降/容量圖



Pressure drop/capacity diagram, upper body. 壓降/容量圖，上體。
Full lines: Balanced upper plug. 實線：平衡上插頭。
Dotted lines: Unbalanced upper plug. 虛線：不平衡上插頭。



Pressure drop/capacity diagram, lower body, balanced and unbalanced lower plugs.
壓降/容量圖，下本體，平衡和不平衡下插頭。



Pressure drop/capacity diagram, between bodies. 壓降/容量圖，在物體之間。
Full lines: Balanced. 實線:平衡。
Dotted lines: Unbalanced. 虛線:不平衡。

Note! For the diagrams the following applies:

Medium: Water (20°C). 注意！ 對於圖表適用：介質：水（20°C）。
Measurement: In accordance with VDI 2173.
測量：符合 VDI 2173。

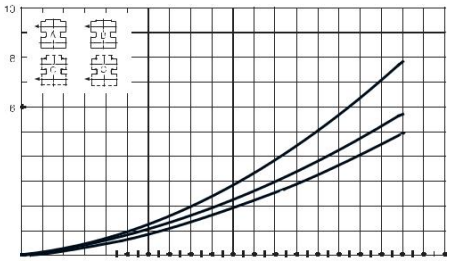
Example to determine pressure drop: 確定壓降的示例：

Upper body size: . . . . .DN/OD 51mm. Balanced upper plug. Capacity = 20 m^3/h.

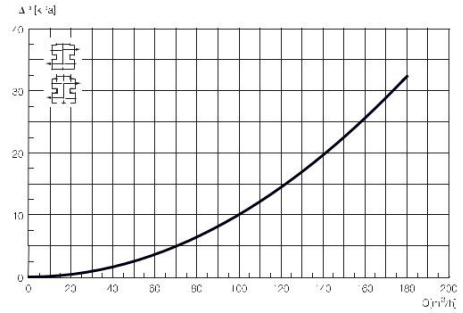
Lower body size: . . . . .DN/OD 76.1mm. Balanced lower plug. Capacity = 20 m^3/h.
Between bodies:. . . . . .Capacity = 15 m^3/h

Result:結果

From fig. 3, Δp = 7.5 kPa through upper body.通過上本體
From fig. 4, Δp = 2 kPa through lower body.通過下本體
From fig. 5, Δp = 14 kPa seeing that:
The smallest body determines the curve for Δp between bodies. 最小的物體確定物體之間的 Δp 的曲線。
Always choose the curve for balanced plugs if upper plug is balanced. If only lower plug is balanced, always choose the curve for unbalanced. 如果上插頭平衡，請務必選擇平衡插頭的曲線。 如果只有下插頭是平衡的，總是選擇不平衡的曲線。



Pressure drop/capacity diagram, through bodies DN 125, DN 150 壓降/容量圖，通過閥體 DN 125，DN 150
Balanced upper plug 平衡上插頭
Unbalanced upper plug 不平衡上插頭
Balanced and unbalanced lower plug 平衡和不平衡的下插頭



Pressure drop/capacity diagram between bodies Balanced and unbalanced plugs, DN 125, DN 150 平衡和不平衡插頭，DN 125，DN 150

Size			**DN/OD**						**DN**			
ISO/DIN	**38**	**51**	**63.5**	**76.1**	**101.6**	**40**	**50**	**65**	**80**	**100**	**125**	**150**
Kv-value												
Upper Seat-lift [m^3/h]	1.5	1.5	2.5	2.5	3.1	1.5	1.5	2.5	2.5	3.1	3.7	3.7
Lower Seat-lift [m^3/h]	0.9	0.9	1.9	1.9	2.5	0.9	0.9	1.9	1.9	2.5	3.1	3.1
Air consumption												
Upper Seat-lift * [n litre]	0.2	0.2	0.4	0.4	0.62	0.2	0.2	0.4	0.4	0.62	0.62	0.62
Lower Seat-lift * [n litre]	1.1	1.1	0.13	0.13	0.21	1.1	1.1	0.13	0.13	0.21	0.21	0.21
Main Movement * [n litre]	0.86	0.86	1.63	1.63	2.79	0.86	0.86	1.62	1.62	2.79	2.79	2.79
Kv-value - SpiralClean												
Spindle CIP [m^3/h]	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
External CIP of leakage chamber [m^3/h]	0.25	0.25	0.29	0.29	0.29	0.25	0.25	0.29	0.29	0.29	0.29	0.29

TD900074-1

Note

* [n litre] = volume at atmospheric pressure 大氣壓下的體積

Recommended min. pressure for SpiralClean: 2 bar 推薦最小。 螺旋清洗壓力：2 bar。.

Formula to estimate CIP flow during seat lift:
座升降過程中 CIP 流量估算公式：

(for liquids with comparable viscosity and density to water): （對於具有與水相當的粘度和密度的液體）

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

Q = CIP - flow (m^3/h).

Kv = Kv value from the above table.

Δ p = CIP pressure (bar).

Actuator

Configurator Code							STD	STD/STD*
							Operating pressure for SeatClean, High Clean	Operating pressure for Basic
(Ordering leaflet)		2	3	4	5	6	and Ultra Clean at 6 bar air pressure	at 6 bar air pressure
Actuator Type		3	4BS[1]	4SS[2]	5BS	5SS		
Actuator dimensions		120 x	157 x	186 x	186 x	186 x		
øD x L		230	252	281	281	379		
Connection Size								
ISO (DN/OD)	DIN (DN)							
38	40	STD	OP				1000 kPa	600 kPa
51	50	STD	OP	OP			1000 kPa	600 kPa
63.5	65	OP	STD	STD*	OP	OP	1000 kPa	600 kPa
76.1	80	OP	STD	STD*	OP	OP	1000 kPa	600 kPa
101.6	100		OP	OP	STD	STD*	1000 kPa	600 kPa
	125		OP	OP	STD	STD*	800 kPa	600 kPa

STD: Normal size of actuator. 汽動頭正常尺寸。
STD*: Normal size actuator if lower plug is UNBALANCED. 如果下插頭為 UNBALANCED，則為正常尺寸的執行器。
OP: Alternative size of actuator (NB: For choice and performance of optional actuators please contact Alfa Laval or refer to the Anytime Configurator).
執行器的可選尺寸（NB：有關可選執行器的選擇和性能，請聯繫阿法拉伐或參考 Anytime 配置器）。
BS = Basic spring
SS = Strong spring

Radial Seat Diameter 徑向座徑

ISO (DN/OD)	DIN (DN)	Seat
38	40	ø53.3
51	50	ø53.3
63.5	65	ø81.3
76.1	80	ø81.3
101.6	100	ø100.3
	125	ø115.3
	150	ø115.3

Note for mixed bodies: 混合體注意事項：
The seat always applies to the smallest valve body. 座總是適用於最小的閥體。
Dimension B is equal with the largest valve body size. 尺寸 B 等於最大閥體尺寸。

Dimensions (mm)

Size	DN/OD					DN						
ISO/DIN	38	51	63.5	76.1	101.6	40	50	65	80	100	125	150
*A - BasicClean	530	575	699	699	899	530	575	699	699	899	993	993
*A - SeatClean	530	575	670	670	791	530	575	670	670	791	895	895
*A - HighClean + UltraClean	611	656	760	760	922	611	656	760	760	922	1026	1026
B	170	220	220	220	300	170	220	220	220	300	300	300
**C	60.8	73.8	86.3	98.9	123.6	64	76	92	107	126	151	176
OD	38	51	63.5	76.1	101.6	41	53	70	85	104	129	154
ID	34.8	47.8	60.3	72.9	97.6	38	50	66	81	100	125	150
t	1.6	1.6	1.6	1.6	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0
E - Basic/SeatClean	100	121	149	142	177	99	119	146	138	176	215	202.5
E - HighClean/UltraClean	144	165	200	193	248	143	163	197	189	247	286	273.5
F1	31.5	31.5	38	38	59	31.5	31.5	38	38	59	59	59
F2	5	5	5	5	5	5	5	5	5	5	5	5
øD - Basic	120	120	186	186	186	120	120	186	186	186	186	186
øD - SeatClean, HighClean and UltraClean	120	120	157	157	186	120	120	157	157	186	186	186
L - Basic	230	230	281	281	379	230	230	281	281	379	379	379
L - SeatClean, HighClean and UltraClean	230	230	252	252	281	230	230	252	252	281	281	281
M/ISO clamp	21	21	21	21	21							
M/DIN clamp						21	21	21	21	21	28	28

M/ISO male	21	21	21	21	21							
M/DIN male						22	23	25	25	30	46	50
M/SMS male	20	20	24	24	35							
M/BS male	22	22	22	22	27							
Weight (kg) - Basic	13.5	15	24	24	34	13.5	15	24	24	34	44	45
Weight (kg) - SeatClean	13.5	15	24	24	34	13.5	15	24	24	34	47	48
Weight (kg) - High-/UltraClean	14.5	16	27	27	38	14.5	16	27	27	38	51	52

Note! * For the A-measure if different upper/lower body sizes, please refer to Anytime configurator or contact Alfa Laval.. ** The measure C can always be calculated by the formula C = ½ID_{upper} + ½ID_{lower} + 26 mm.
注意！ *對於 A 尺寸，如果不同的上/下體尺寸，請參考 Anytime 配置器或聯繫阿法拉伐.. **測量 C 總是可以通過公式計算 C =½ID 上+½下降器+ 26 毫米。.