



**ALTFORT**  
Tank Cleaning Solutions

**PRODUCT**  
INTRODUCTION

# ALTFORT CLEANING TECHNOLOGY

## Optimizing Mechanical Action to Maximize Resource Efficiency

At **Altfort**, we believe that effective cleaning starts with the smart integration of mechanical principles. By increasing the impact of the mechanical element, businesses can significantly reduce the consumption of water, chemicals, and energy — leading to higher efficiency and lower operational costs.

The concept is rooted in the Sinner's Circle, which illustrates how mechanical action, temperature, chemical concentration, and time interact to define cleaning performance. While the proportion of each factor may vary based on application, maximizing the mechanical component consistently yields the greatest improvement in cleaning power.

Enhancing mechanical performance allows for the reduction of other resource-intensive elements. While impact remains a key driver, Altfort's technology is engineered to combine multiple performance-enhancing forces — increasing overall cleaning efficacy without compromising cost-efficiency.

By leveraging cutting-edge innovation and precision engineering, Altfort delivers advanced cleaning systems that offer consistent, repeatable performance. Our solutions are designed to reduce energy usage, minimize chemical and water requirements, and streamline cleaning cycles — enabling businesses to optimize production timelines and boost profitability. Altfort's advanced cleaning technology ensures minimal total cost of ownership and maximized return on investment — making it the smart choice for future-ready industrial operations.





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# PRINCIPLES OF CLEANING TECHNOLOGY

## Optimizing Cleaning Efficiency through the Dynamic Sinner's Circle

The dynamic Sinner's Circle illustrates the interplay between the key elements of cleaning—mechanical action, chemical action, temperature, and time—to determine the most effective approach for any given application.

The proportion of these four elements varies depending on the specific cleaning requirements, directly influencing the liquid volume required at the center of the process. Among these elements, mechanical action offers the greatest potential for impact. By enhancing mechanical action, the dependency on other elements—such as chemicals, temperature, time, and liquid usage—can be significantly reduced.

At Alfort, our cleaning philosophy centers around amplifying mechanical action while integrating additional innovative forces to enhance overall cleaning performance. While mechanical impact is critical, we believe in a synergistic approach that leverages advanced technologies and precision engineering to boost cleaning power.

Our cutting-edge cleaning systems are designed to maximize efficiency by reducing energy consumption, minimizing chemical usage, and shortening cleaning time—all while ensuring repeatable, high-quality results. This focus on operational efficiency helps our clients reduce total cost of ownership and achieve a superior return on investment.

By maintaining tight control over ongoing costs—whether related to energy, chemicals, or water usage—Alfort's solutions empower organizations to optimize production schedules and enhance process profitability.

Alfort's advanced cleaning technology delivers consistent, high-performance results, enabling sustainable and cost-effective operations across a wide range of industries.



# DYNAMIC SINNER'S CIRCLE



## TIME

The time required to adequately achieve the level of cleaning



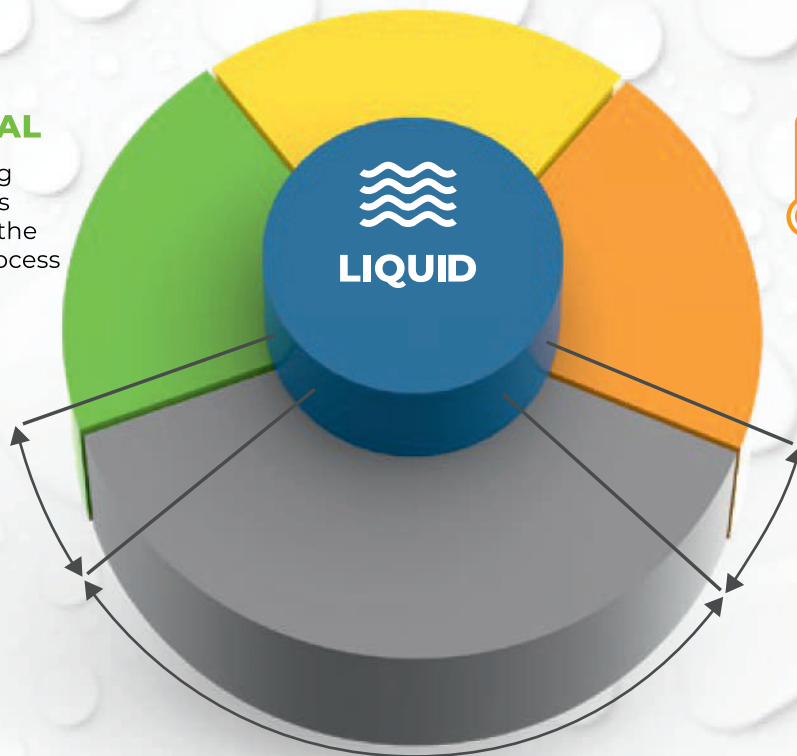
## CHEMICAL

The cleaning agent that is used to aid the cleaning process



## TEMPERATURE

The temperature required to perform the cleaning



## MECHANICAL

The force required to remove the soils (shear, impact or friction)

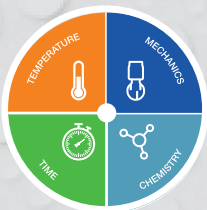


Fig. 1

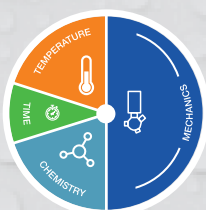


Fig. 2

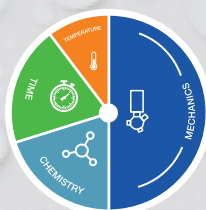
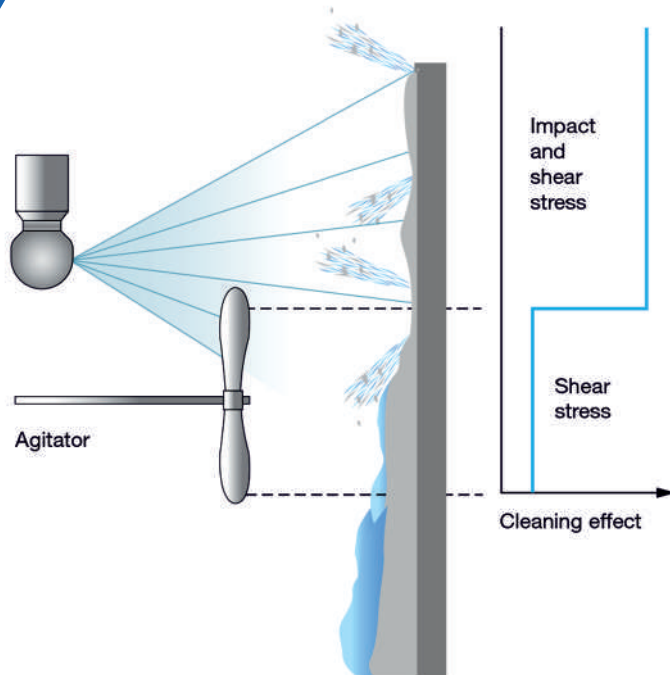


Fig. 3

## Example

Assumption: A given tank can be successfully cleaned with equal shares for the time, temperature, chemical and mechanical factors (fig. 1). Choosing a different nozzle with more powerful cleaning force results in additional freedom for cleaning faster (fig. 2) or with a lower temperature (fig. 3) and thus more energy-efficiently, for example.



Cleaning by impact only occurs if it takes place directly

## Cleaning by Impact

When a jet hits a surface directly, it creates a mechanical impact that significantly improves cleaning. This force—combined with shear stress from fluid movement—helps rinse even areas not hit directly.

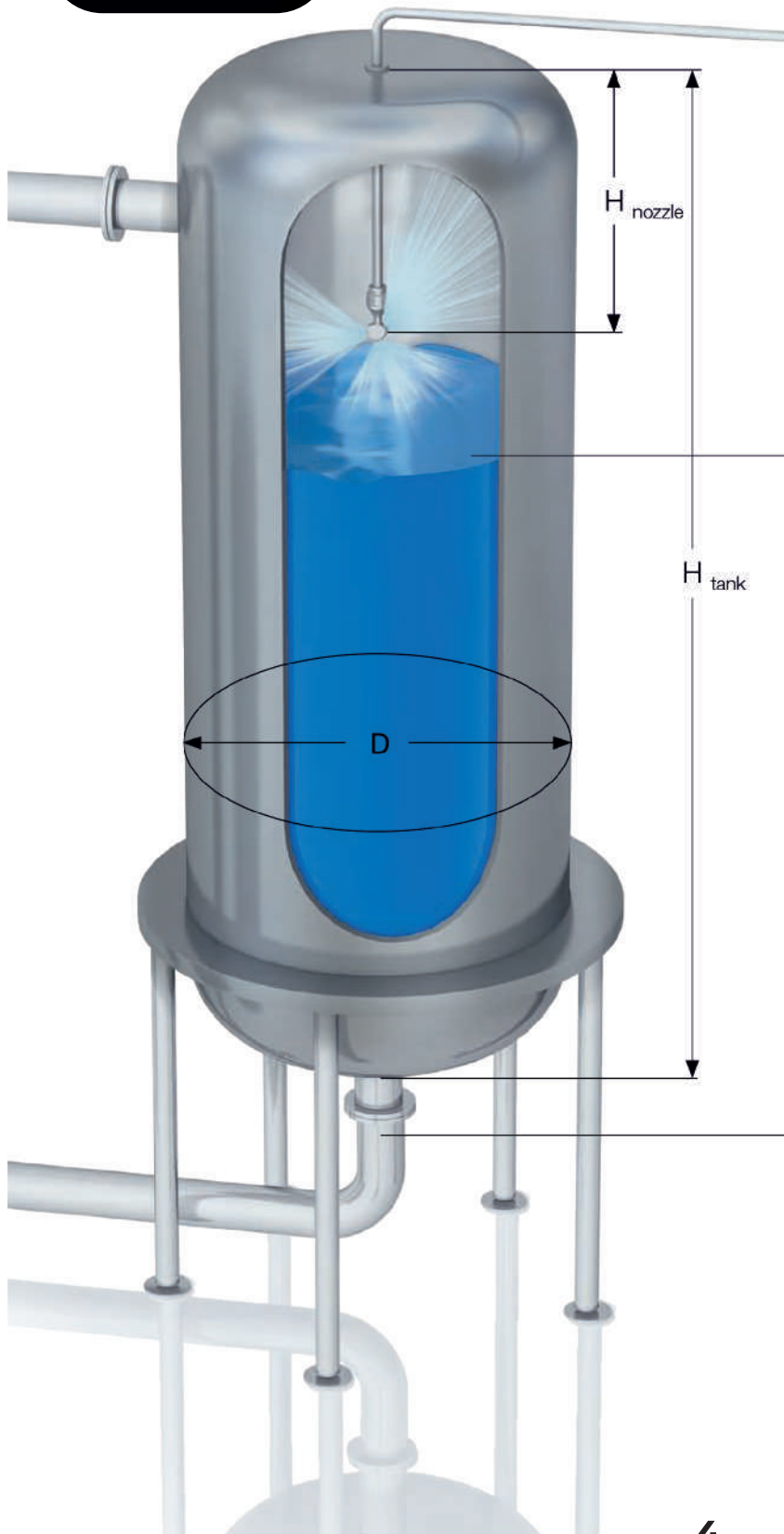
**Important:** Maximum cleaning is achieved only when impact occurs at the exact target area.

Low-pressure systems (2–5 bar) typically deliver the best results for large tanks. Higher pressure may cause misting, reducing effectiveness. Altfort's high-pressure cleaning systems are designed to tackle persistent soiling in small tanks while preserving performance and efficiency.

# CRITERIA FOR NOZZLE SELECTION



The size of the tank, its shape and possible fittings are important factors for selection of the right cleaning nozzle. Fittings in particular determine the number of nozzles required for optimum cleaning.



## Tank size

The diameter of the tank to be cleaned should be smaller than the maximum tank diameter recommended in the product tables. You can find the necessary information on the product pages.

## Fill level

If possible, the nozzle should not come into contact with the product during production. It is therefore recommended to install nozzles above the maximum tank fill level.

## Arrangement

The nozzle must be positioned in the upper part of the tank if possible. The following recommendation applies:

$$H_{\text{nozzle}} = \frac{1}{3} \cdot H_{\text{tank}}$$

Make sure that sufficient cleaning fluid strikes the tank ceiling.

$$H_{\text{nozzle}} < \frac{1}{3} \cdot D_{\text{max. nozzle}}$$

## Conversion

Flow rate according to density:

If the density of the cleaning agent (R) differs from that of water (W), the flow rate is calculated as follows:

$$V_R = V_W \sqrt{\frac{\rho_W}{\rho_R}}$$

Flow rate according to differential pressure:

If the tank cleaning nozzle is operated with a deviating differential pressure, the flow rate is calculated as follows:

$$V_2 = \sqrt{\frac{\rho_2}{\rho_1}} \cdot V_1$$

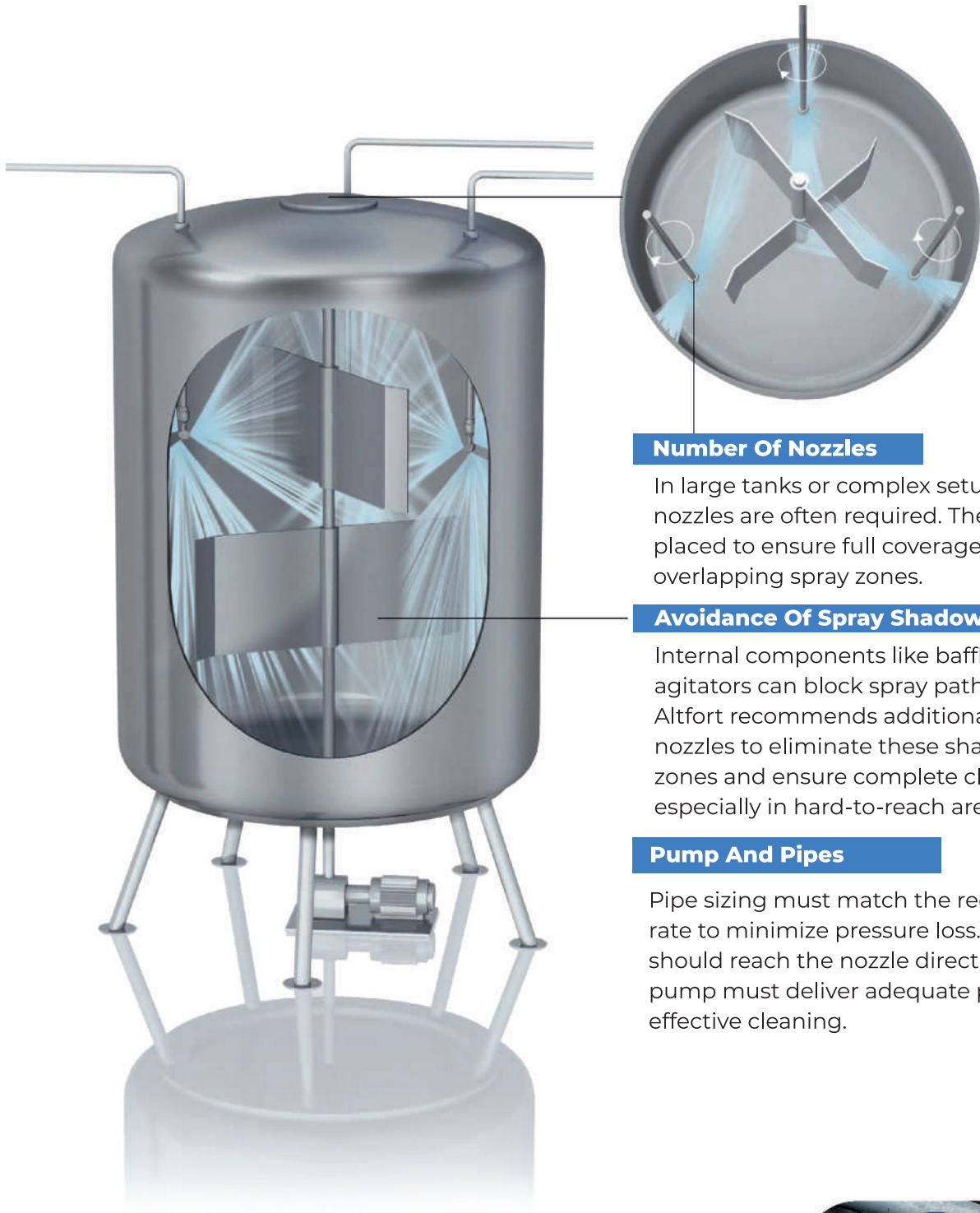
Differential pressure according to volume flow:

$$\rho_2 = \left(\frac{V_2}{V_1}\right)^2 \cdot \rho_1$$

## Tank drainage rate

The tank drainage rate must be chosen so that the liquid level does not rise during the cleaning process. The following values are recommended.

Drain ["]	Drainage rate [l/min]
1	23
1 1/2	50
2	87
2 1/2	132
3	190
4	330



### Number Of Nozzles

In large tanks or complex setups, multiple nozzles are often required. They must be placed to ensure full coverage with overlapping spray zones.

### Avoidance Of Spray Shadows

Internal components like baffles or agitators can block spray paths. Altfort recommends additional nozzles to eliminate these shadow zones and ensure complete cleaning, especially in hard-to-reach areas.

### Pump And Pipes

Pipe sizing must match the required flow rate to minimize pressure loss. Pressure should reach the nozzle directly, and the pump must deliver adequate power for effective cleaning.



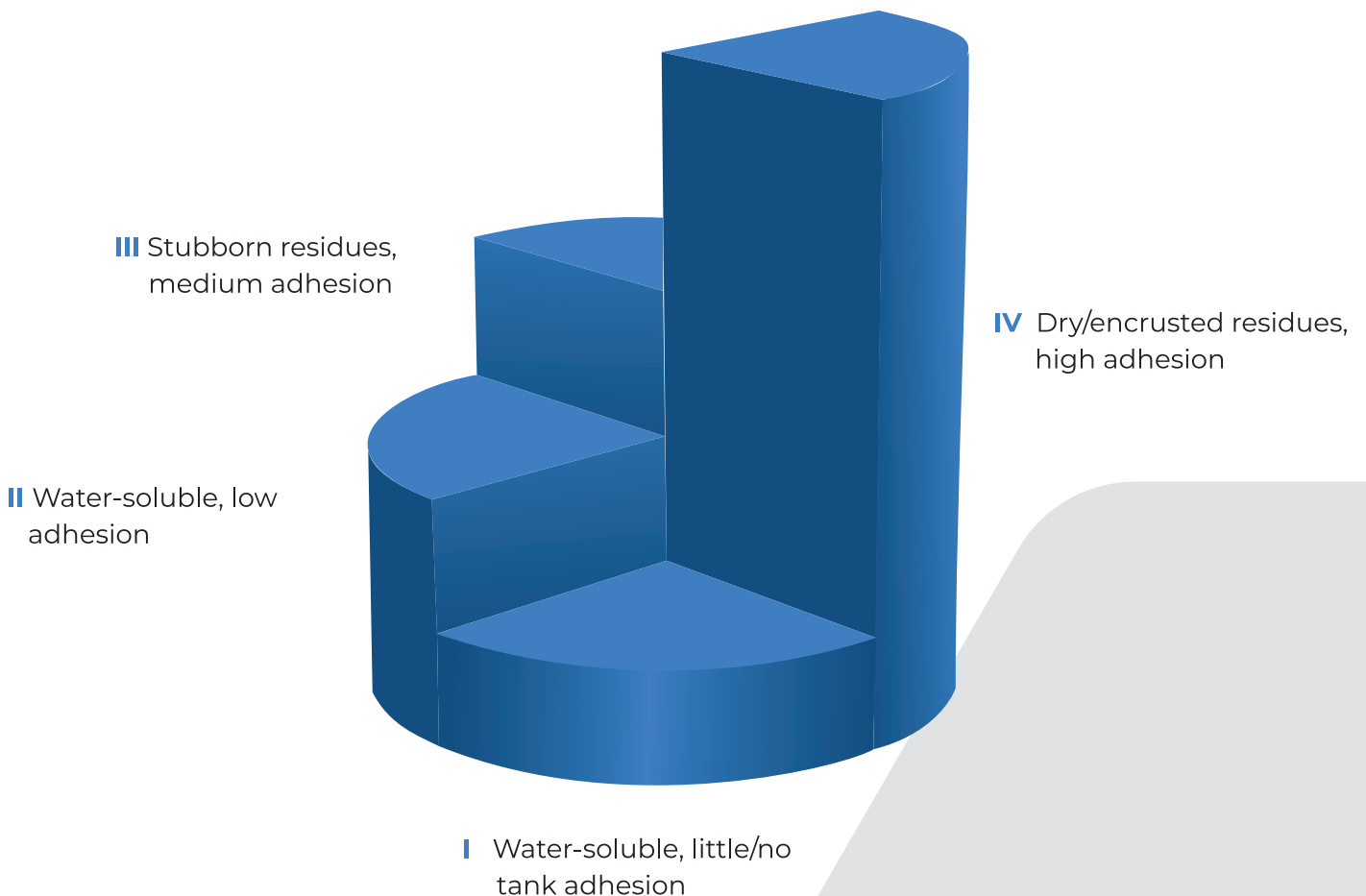
# UNDERSTANDING SOILING CLASSES



Soiling classifications define the mechanical cleaning force needed for effective results.

To select the ideal cleaning method, it's important to identify the type of residue. Altfort categorizes soils into four classes — each requiring increasing levels of mechanical action for optimal cleaning within the Sinner's Circle framework.

Precise classification can be challenging due to varying production conditions, but this guide serves as a reliable starting point.



**Altfort systems are engineered to match cleaning force with soil type — improving efficiency and consistency.**



## Soil Class Breakdown

### Soil Class I

Water-soluble materials with little to no adhesion to tank walls. Common in systems with smooth surface finishes.

### Soil Class II

Water-based residues with low adhesion. Easy to rinse, typically requiring minimal mechanical action.

### Soil Class III

Sticky or stubborn residues with moderate adhesion. Best cleaned before they dry or harden.

### Soil Class IV

Dried or encrusted materials with strong adhesion. Require high mechanical force for effective cleaning.

**Higher classification = Greater mechanical power needed for a clean, cost-effective result.**



## Our Solution

### Targeted cleaning systems for every level of soiling

Cleaning requirements vary — from simple rinsing to removal of hardened residues. At Alfort, we use a structured soiling classification model to guide the selection of cleaning systems, ensuring precision and efficiency for every cleaning task.

### Recommended Solutions by Soiling Type:

- **Soil Class I** – Static Cleaners
- **Soil Class II** – Free Rotating Cleaners
- **Soil Class III** – Controlled Rotating Cleaners
- **Soil Class IV** – Index and Orbital Cleaners

Each solution is designed to match the cleaning intensity required — delivering performance, reliability, and resource savings across all applications



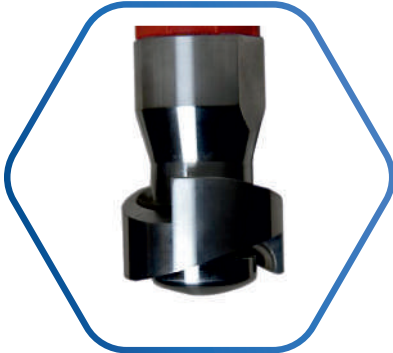
### Soiling Class I – Rinsing

#### Static Cleaners

Cleaning vessels categorized under Soiling Classification I requires a cleaning method that ensures uniform liquid distribution, delivering high volumes of fluid across the entire interior surface. Static spray balls, commonly used for this purpose, generate minimal mechanical force and depend primarily on the flow of liquid down the vessel walls to create surface friction or dissolve residues.

**Main benefits include:**

- Low capital investment
- Maintenance-free operation
- Wide range of spray patterns, materials, and surface finishes available



### Soiling Class II – Low impact

#### Free Rotating Cleaners

Free-rotating cleaners spin quickly around one axis, powered by the flow of cleaning liquid. This spinning creates fast-moving droplets that help remove dirt by hitting the walls of the vessel with gentle force.

**Main benefits include:**

- Long-lasting performance with no need for maintenance
- Different spray options: full 360°, 180° towards the inlet, or 180° away from the inlet
- Small, efficient design that fits easily into various systems



### Soiling Class III – Medium impact

#### Controlled Rotating Cleaners

Altfort's controlled rotating cleaners utilize precisely directed flat or round jets to deliver the cleaning solution onto vessel surfaces with high impact. Operating at higher liquid pressures than traditional free-rotating units, these cleaners maintain a consistent, controlled rotation speed. This controlled motion increases the dwell time of the spray jets on the vessel walls, significantly enhancing cleaning effectiveness—particularly for stubborn or hard-to-remove residues.

**Main benefits include:**

- Enhanced cleaning performance through reduced rotational speed and increased jet dwell time
- Optimized jet design for efficient and thorough cleaning
- Extended service life supported by robust hydrodynamic bearing technology



### Soiling Class IV – High impact

Altfort's comprehensive range of orbital and indexing cleaners provides high-impact cleaning solutions for the most demanding applications. Both product lines feature Altfort's advanced solid stream nozzle technology, which enhances spray jet projection and maximizes cleaning efficiency by delivering powerful, targeted impact to vessel surfaces.

## Orbital Cleaners

Orbital cleaners operate using two rotating axes—horizontal and vertical—following a defined cleaning path that forms a precise 3D spray pattern. This ensures thorough and consistent coverage of the entire vessel interior.

**Key benefits include:**

- Hygienic design that minimizes contamination risks
- Cost-effective operation
- High-impact cleaning performance
- Low maintenance and service costs

## Index Cleaners

Altfort's exclusive range of index cleaners delivers exceptional cleaning performance through a piston-driven indexing mechanism. This slow, deliberate movement allows for the application of high energy directly onto the vessel walls, ensuring thorough and effective cleaning even in the most challenging conditions.















**Key advantages include:**




















- Optimized design for maximum jet impact and cleaning power
- Reliable, jam-free operation enabled by the piston drive system
- Extended service intervals for reduced maintenance and downtime



# PRODUCT SELECTION GUIDE

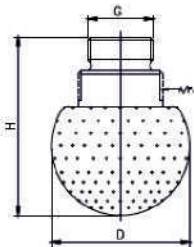
## Cleaning diameter

	1 m	2 m	3 m	4 m	5 m	6 m	7 m	8 m	9 m	10 m	28 m
Rinse Soil Class I	Altostatic 										
	Altospray AS 25 										
	Alto Chem 25 										
Low impact Soil Class II		Altospray 75, 100, 150 									
		Altochem 75, 100 									
		RotaAlt 40 & 75 									
		Altoz 50, 75 & 100 									
		Rotadisc 									
		Altojet 75 									
		Sanialt 									
Medium Impact Soil Class III					RotaAlt 125 						
					Rotadisc 						
					Altojet 125 						
High Impact Soil Class IV				Orbiclean 							

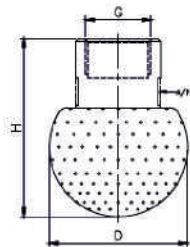
Cleaner	Type	Coverage [deg]*	Pressure [bar]	Flow range [l/min]	ATEX	Beverage, Wine Brewery, Distillery	Food & Dairy	Transport	(Bio-) Chemical	Pharma/ Personal Care	Pulp & Paper	Utilities
<b>Alto static</b>	 Static	Various	1.0–2.5 Optimum 2	6–450		.	.	.	.	.	.	.
<b>Altospray</b>	 Free rotating	360	2–4 Optimum 2	40–245		.	.	.	.	.	.	.
<b>Alto-Chem</b>	 Free rotating	360	2–4 Optimum 3	40–134		.	.	.	.	.	.	.
<b>Rota Alt</b>	 Free rotating	360	1–4 Optimum 3	38–408		.	.	.	.	.	.	.
<b>Altoz</b>	 Controlled rotating	360	1–4 Optimum 4	15–118		.	.	.	.	.	.	.
<b>Rota Disc</b>	 Controlled rotating	360	2–4 Optimum 3	140–1100		.	.	.	.	.	.	.
<b>AltoJet</b>	 Controlled rotating	360	3–12 Optimum 3	50–270		.	.	.	.	.	.	.
<b>Orbi Clean</b>	 Orbital	360	4–10 Optimum 6–8	80–380		.	.	.	.	.	.	.
<b>Sani Alt</b>	 Orbital	360	3–20 Optimum 6–8	25–92		.	.	.	.	.	.	.
<b>Alto Flush</b>	 Orbital	270	1.5–7 Optimum 6–8	17–75		.	.	.	.	.	.	.

The above selection guide is only provided as an assistance to the cleaner selection process. Altfort's policy of continued improvement means that specifications may vary without prior notice

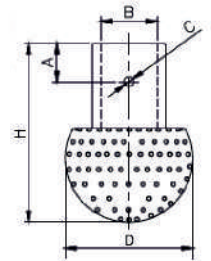
# ALTOSTATIC







Male Connection



Female Connection



Pin Type Connection

Coverage Type	Spray Angle
A 	180°
B 	180°
D 	270°
E 	360°

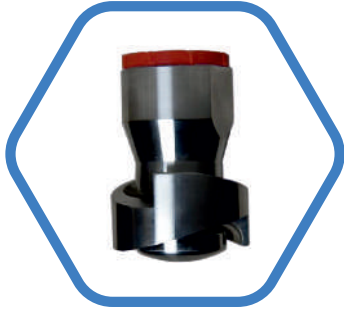
SPECIFICATION	ALTOSTATIC
Standard Connections	BSP, NPT, Pin Type
Insertion Opening	20 mm to 100mm
Standard Construction Matl.	Stainless Steel 316L
Cleaning Diameter in m	Upto 2.0 m
Flow rate in LPM	6.50 - 450.00
Operating Pressure in Bar	2.0 Bars
Max Operating Temperature	Max 95°C
Max Ambient Temperature	Max 140°C
Spray Angle	360°

## DESIGN FEATURES

- ✓ Jet type cleaning
- ✓ Impact type cleaning
- ✓ Can be used for stream applications.
- ✓ Available in Threaded, Pin type and Tri clover end connection
- ✓ Available in SS304, SS316, SS316L, Hastelloy C-276, PTFE

# ALTOSPRAY SERIES

## AS 25, 75, 100 & 150



**ALTOSPRAY  
AS 25 CPTFE**



**ALTOSPRAY  
AS 25 PTFE**



**ALTOSPRAY  
AS 75**



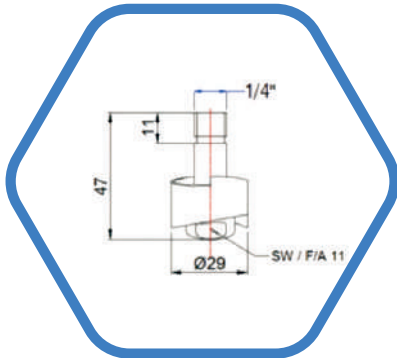
**ALTOSPRAY  
AS 100**



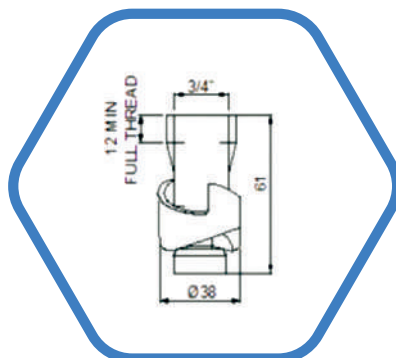
**ALTOSPRAY  
AS 150**

SPECIFICATION	AS 25	AS 75	AS 100	AS 150
Standard Connection: Thread	1/2" BSP, NPT Female	3/4" BSP, NPT Female	1" BSP, NPT Female	1.1/2" BSP, NPT Female
Optional Connection: Pin Fix	1/2" Pipe / DIN 10	1" Pipe / DIN 25	1" Pipe / DIN 25	1.5" Pipe / DIN 40
Insertion Opening	Min. Ø 31 mm	Min. Ø 41 mm	Min. Ø 55mm	Min. Ø 75mm
Standard Construction Matl.	Stainless Steel 316L/CPTFE/ PTFE			
Cleaning Diameter in m	Max 1.5 m	Max 2.4 m	Max 4.5 m	Max 5 m
Flow rate in LPM	40-60	75-105	120-158	180-245
Operating Pressure in Bar	2-4			
Max Operating Temperature	Max 95°C	Max 95°C	Max 95°C	Max 95°C
Max Ambient Temperature	Max 140°C			
Spray Angle	360°			
Preferred mounting Position	Any Angle			
Weight	0.05 kg	0.19 kg	0.44 kg	0.73 kg

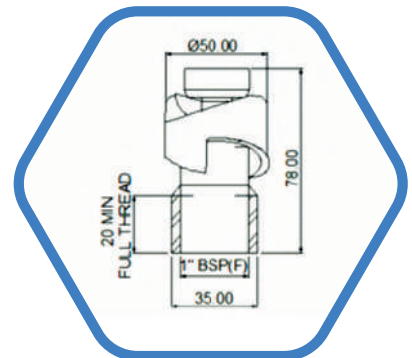
# ALTOSPRAY DIMENSION DIAGRAMS



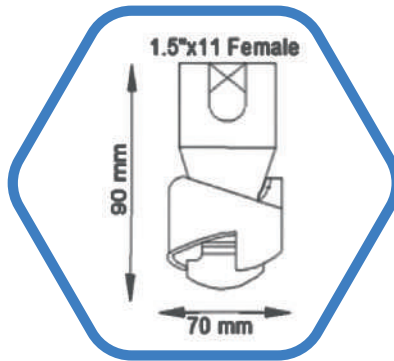
Dimension of AS 25



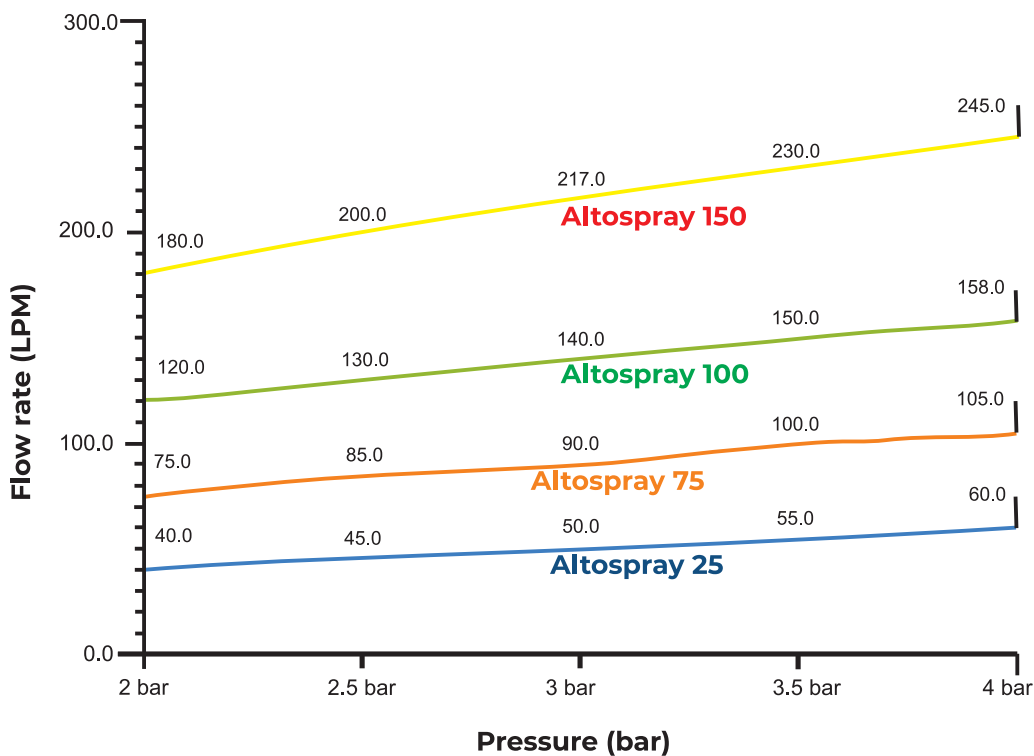
Dimension of AS 75



Dimension of AS 100



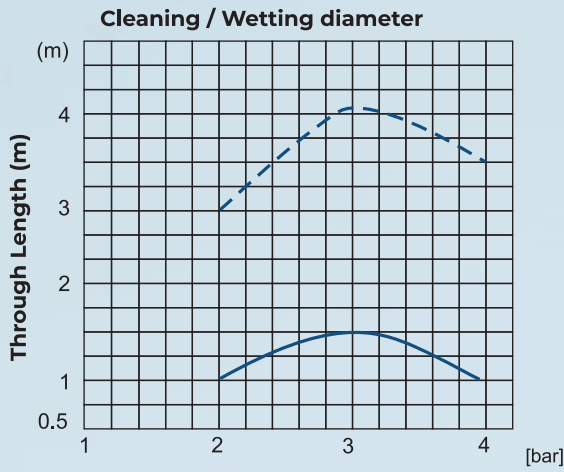
Dimension of AS 150



Altospray Pressure V/S Flow Rate Curve



- Altospray 25
- Altospray 75
- Altospray 100
- Altospray 150

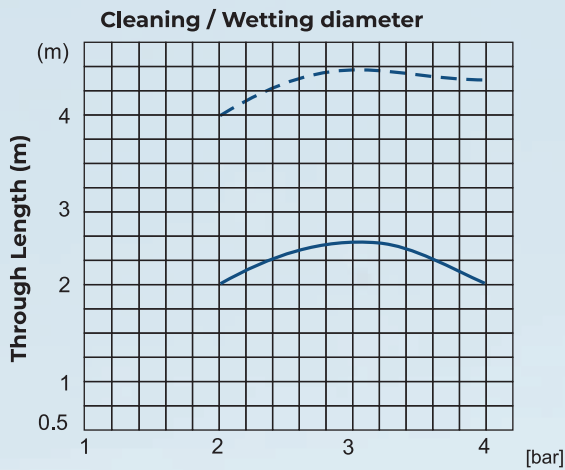


Wetting - - -

Cleaning —



**ALTOSPRAY AS 25 WETTING / CLEANING DIAMETER CURVE**

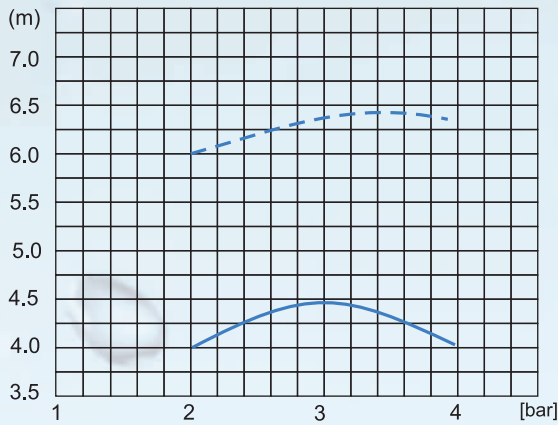


Wetting - - -

Cleaning —



**ALTOSPRAY AS 75 WETTING / CLEANING DIAMETER CURVE**

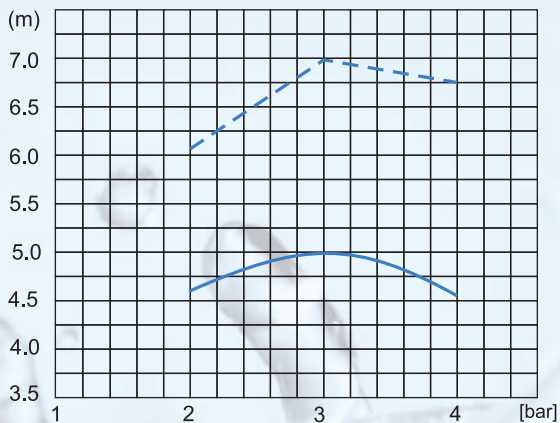


Wetting - - -

Cleaning —



**ALTOSPRAY AS 100 WETTING / CLEANING DIAMETER CURVE**



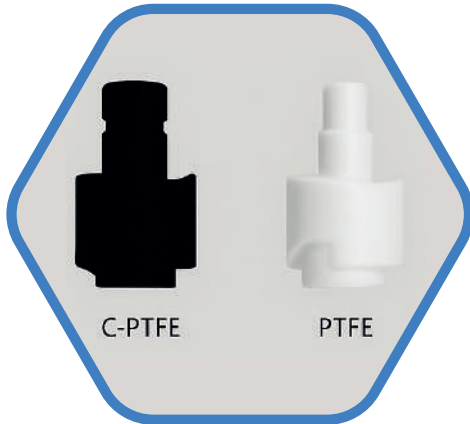
Wetting - - -

Cleaning —

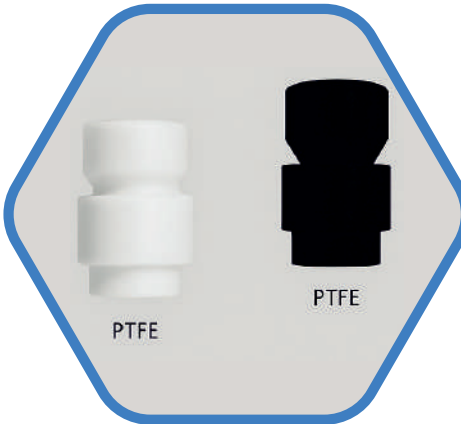


**ALTOSPRAY AS 150 WETTING / CLEANING DIAMETER CURVE**

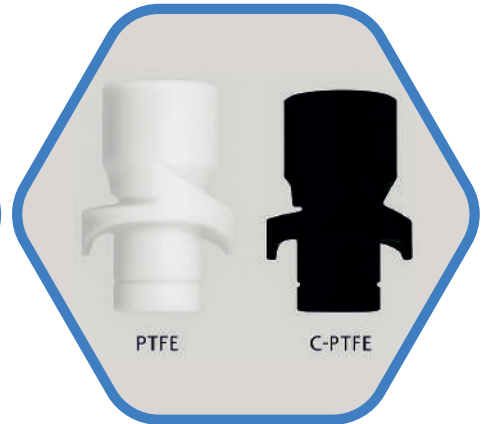
# ALT-O-CHEM 25, 75 & 100



**ALT-O-CHEM 25**



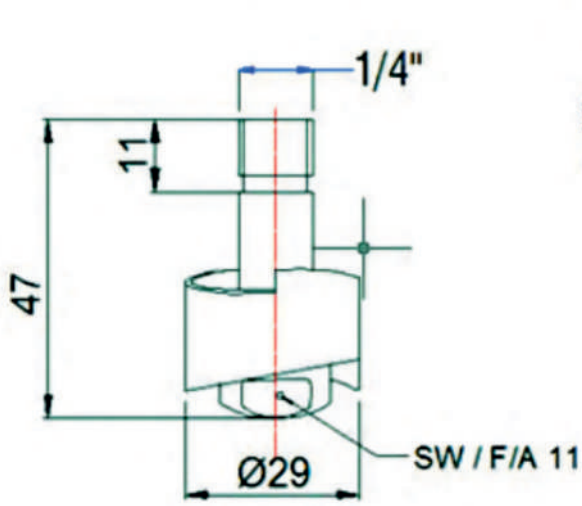
**ALT-O-CHEM 75**



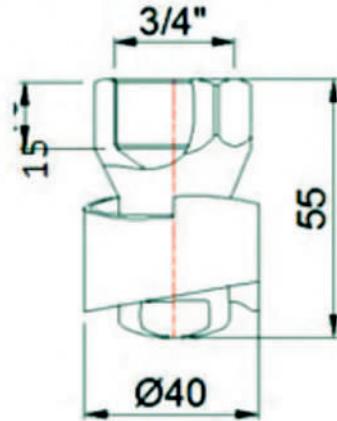
**ALT-O-CHEM 100**

SPECIFICATION	ALT-O-CHEM 25	ALT-O-CHEM 75	ALT-O-CHEM 100
Standard Connection: Thread	1/4" BSP, male	3/2" BSP Female	1" BSP Female
Insertion Opening	Min. Ø 31 mm	Min. Ø 41 mm	Min. Ø 55mm
Standard Construction Matl.	CPTFE/ PTFE		
Cleaning Diameter in m	Max 1.5 m	Max 3 m	Max 4.6 m
Flow rate in LPM	40-60	59-83	95-134
Operating Pressure in Bar	2-4		
Max Operating Temperature	Max 95°C	Max 95°C	Max 95°C
Max Ambient Temperature	Max 140°C		
Spray Angle	360°		
Preferred mounting Position	Any Angle		
Weight	0.024 kg	0.075 kg	0.113 kg

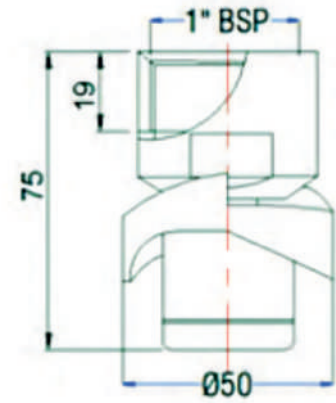
# ALT-O-CHEM DIMENSION DIAGRAMS



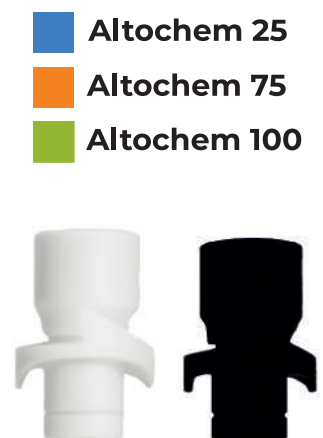
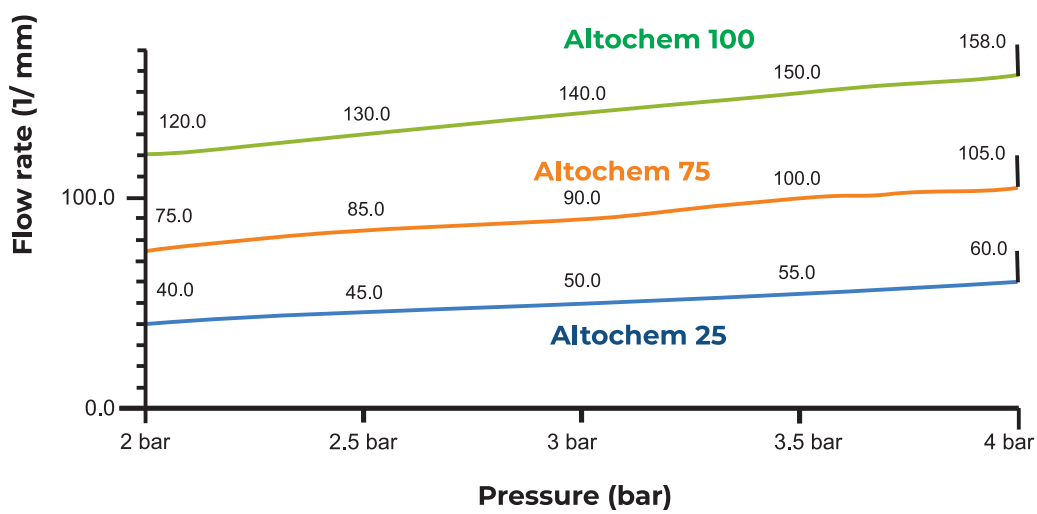
**ALT-O-CHEM 25**



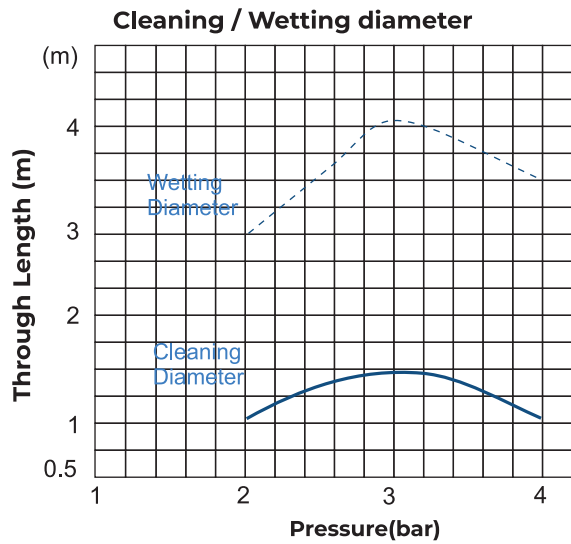
**ALT-O-CHEM 75**



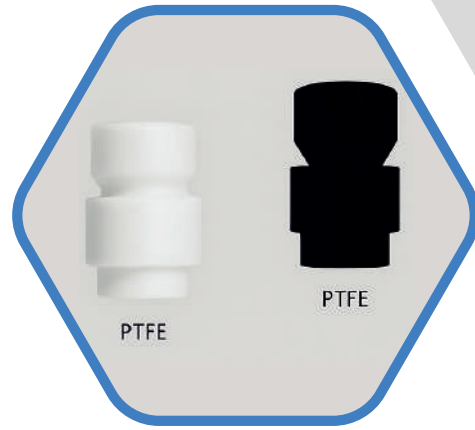
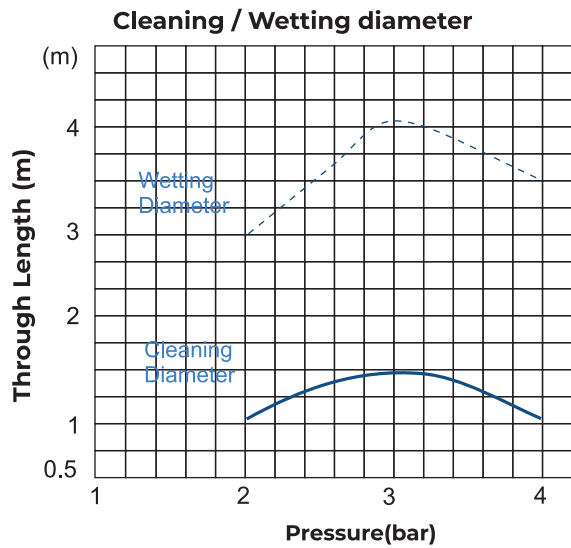
**ALT-O-CHEM 100**



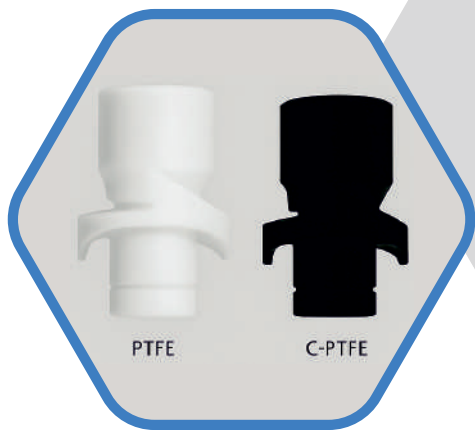
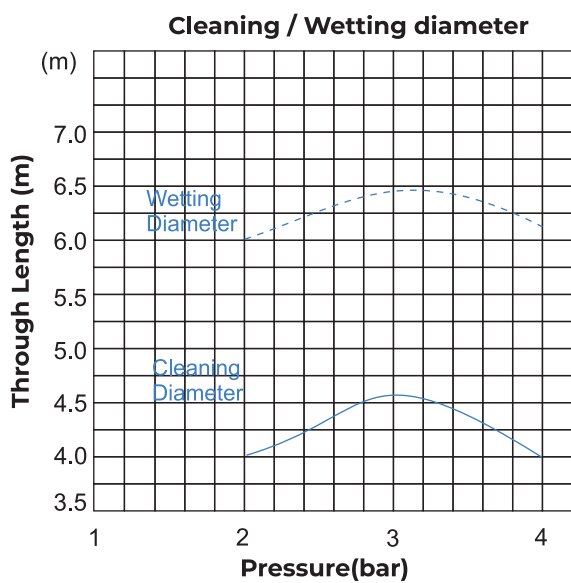
**Altochem Pressure V/S Flow Rate Curve**



**ALTOCHEM 25 WETTING / CLEANING DIAMETER CURVE**



**ALTOCHEM 75 WETTING / CLEANING DIAMETER CURVE**



**ALTOCHEM 100 WETTING / CLEANING DIAMETER CURVE**



# ROTA ALT SERIES 40, 75 & 125



**ROTA-ALT-40**



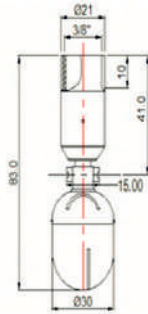
**ROTA-ALT-75**



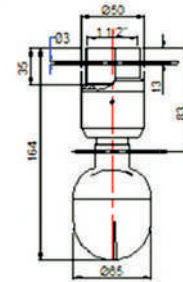
**ROTA-ALT-125**

SPECIFICATION	ROTA-ALT-40	ROTA-ALT-75	ROTA-ALT-125
Standard Connection: Thread	3/8" BSP/NPT Female	3/4" BSP/ NPT Female	1.1" BSP/NPT Female
Optional Connection: Pin Fix	1/2" OD Pipe	1" OD Pipe	1.1/2" OD Pipe
Insertion Opening	Min. Ø 40 mm	Min. Ø 60 mm	Min. Ø 90mm
Standard Construction Matl.	316L With CPTFE/ PTFE		
Cleaning Diameter in m	Max 3 m	Max 4.7 m	Max 10 m
Flow rate in LPM	38.3-61.7 l/min	60-153.3 l/min	200-408.3 l/min
Operating Pressure in Bar	2-4 bar	2-10 bar	2-6 bar
Max Operating Temperature	Max 90°C	Max 90°C	Max 90°C
Max Ambient Temperature	Max 140°C		
Spray Angle	360°		
Preferred mounting Position	Vertical down		
Weight	0.12 kg	0.37 kg	0.74 kg

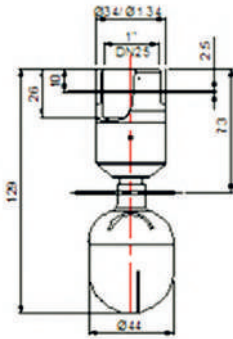
# ROTA ALT DIMENSION DIAGRAMS



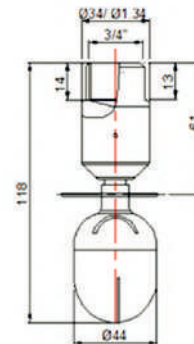
**ROTA-ALT 40**



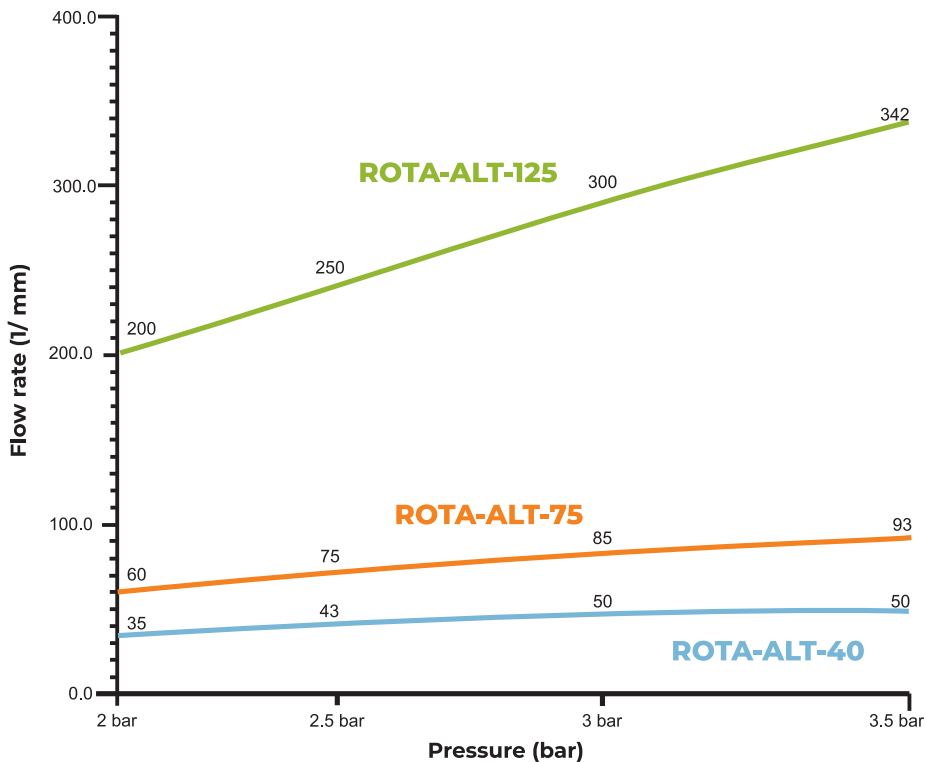
**ROTA-ALT 125 - PIN FIXED**



**ROTA-ALT 75- PIN FIXED**

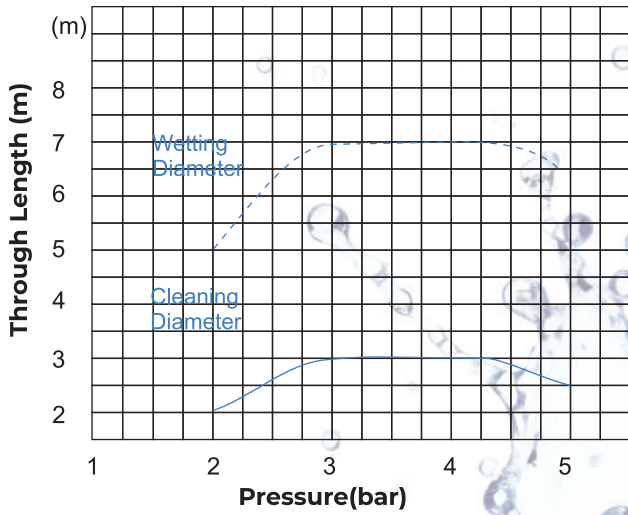


**ROTA-ALT 75- BSP/ NPT THREADED**



**Rotaalt Pressure V/S Flow Rate Curve**

**Cleaning / Wetting diameter**

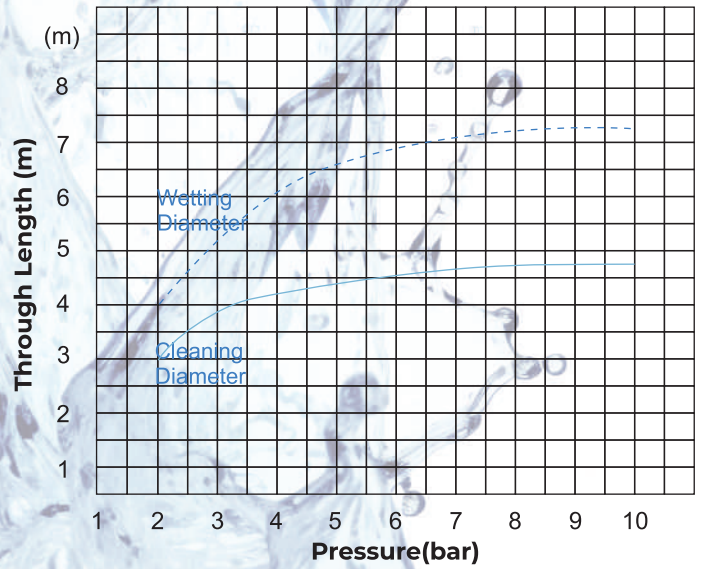


**ROTO 40 WETTING / CLEANING DIAMETER CURVE**

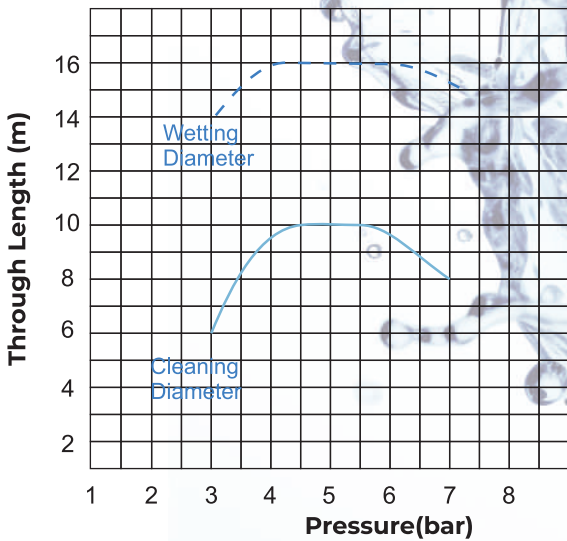


**ROTO 75 WETTING / CLEANING DIAMETER CURVE**

**Cleaning / Wetting diameter**



**Cleaning / Wetting diameter**



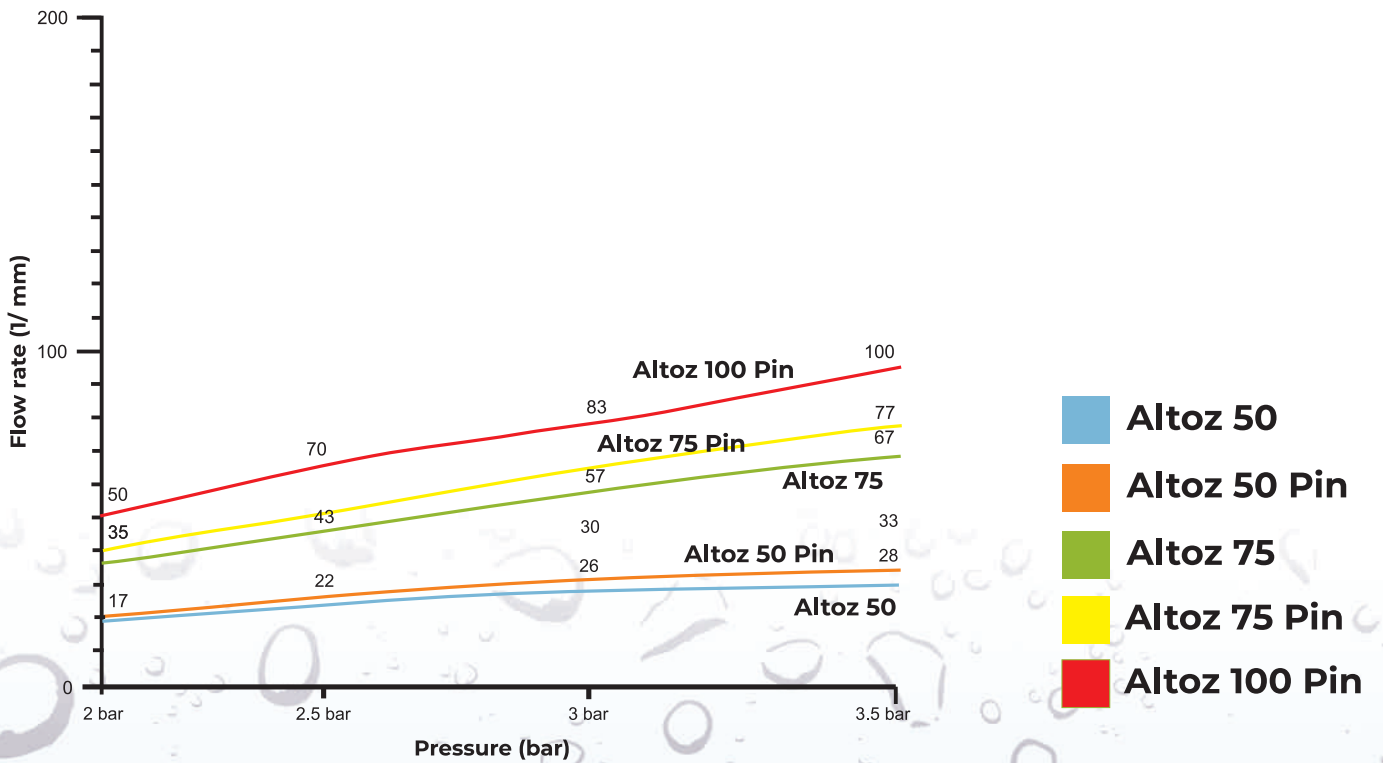
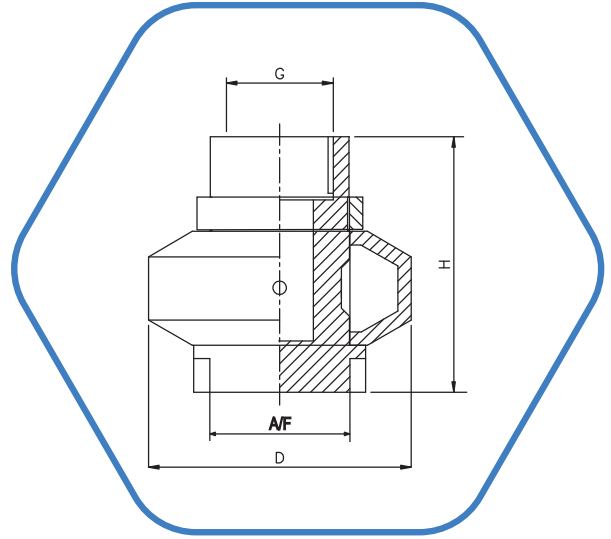
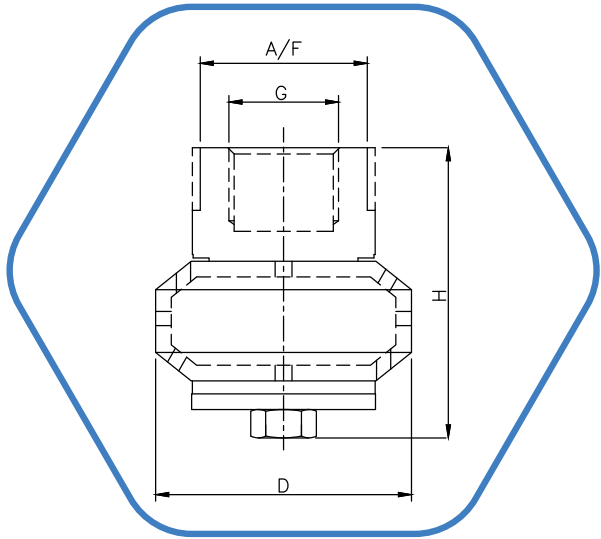
**ROTO 125 WETTING / CLEANING DIAMETER CURVE**

# ALTOZ SERIES



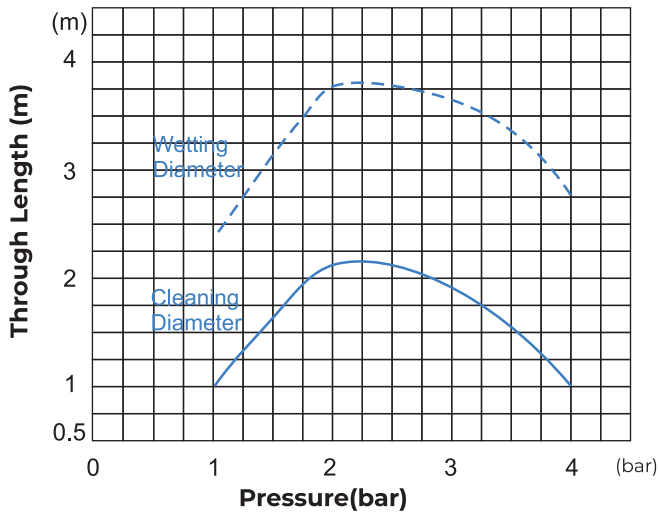
SPECIFICATION	ALTOZ 50	ALTOZ 75	ALTOZ 100
Standard Connection: Thread	3/8" BSP/NPT Female	1/2" BSP/ NPT Female	3/4" BSP/NPT Female
Optional Connection: Pin Fix	1/2" OD Pipe	3/4" OD Pipe	1" OD Pipe
Insertion Opening	Min. Ø 42 mm Pin Fix Ø 60 mm	Min. Ø 52 mm Pin Fix Ø 70 mm	Min. Ø 58 mm Pin Fix Ø 85 mm
Standard Construction Matl.	316L With CPTFE/ PTFE		
Cleaning Diameter in m	Max 2.2 m	Max 3.3 m	Max 4.8 m
Flow rate in LPM	15-33	30-76.7	50-118.3
Operating Pressure in Bar	1-4 bar	1-4 bar	1-4 bar
Max Operating Temperature	Max 65°C	Max 65°C	Max 65°C
Max Ambient Temperature	Max 75°C		
Spray Angle	360°		
Preferred mounting Position	Any		
Weight	0.11 kg	0.16 kg	0.195 kg

# ALTOZ SERIES DIMENSION DIAGRAMS

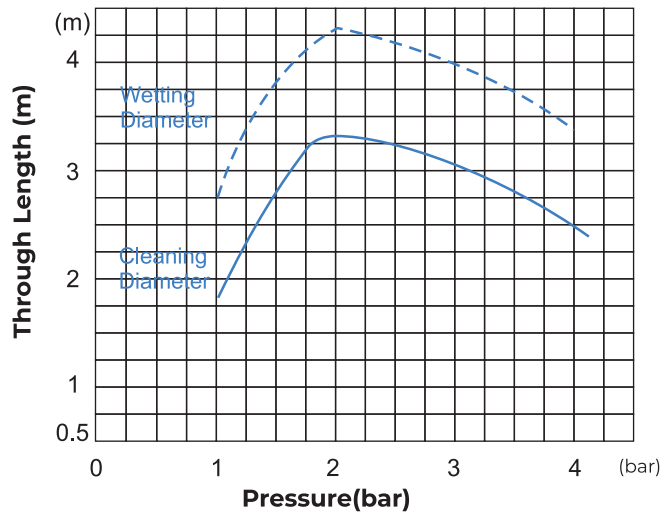


**Altoz Pressure V/S Flow Rate Curve**

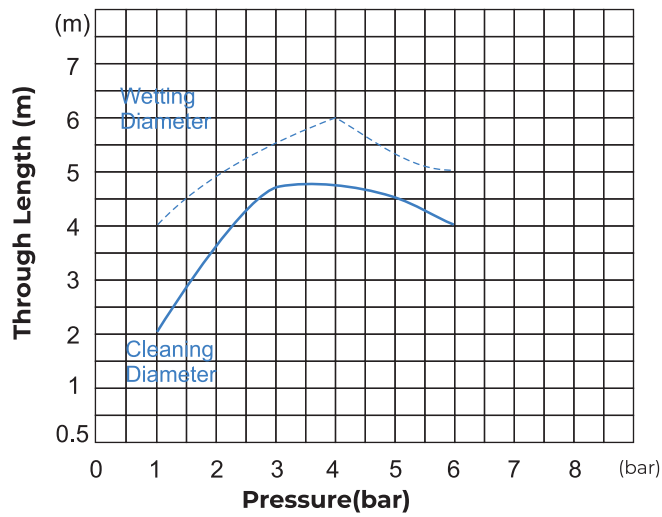
**Cleaning / Wetting diameter**



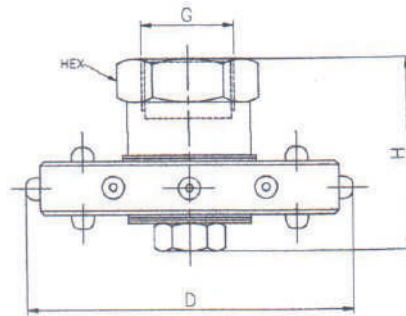
**Cleaning / Wetting diameter**








**Cleaning / Wetting diameter**

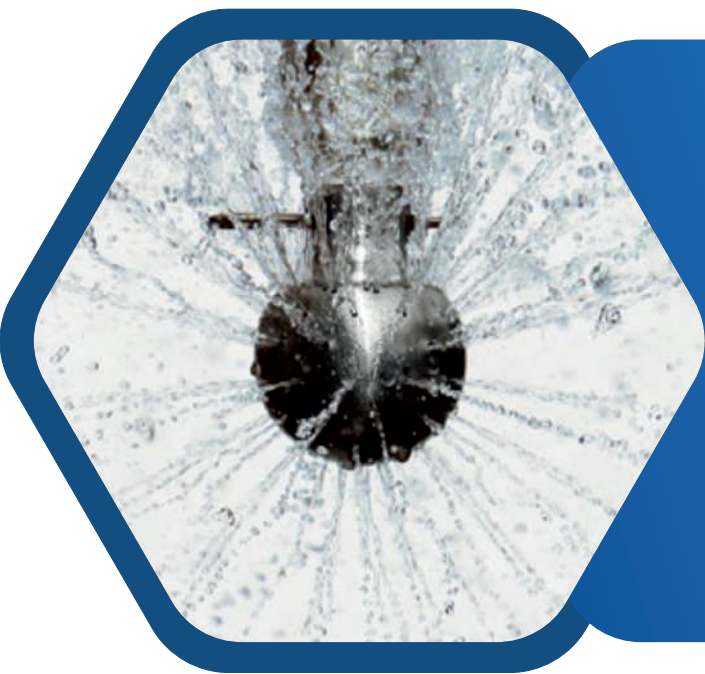


# ROTADISC



Coverage Type	Spray Angle
A 	180°
B 	180°
C 	270°
D 	270°
E 	360°

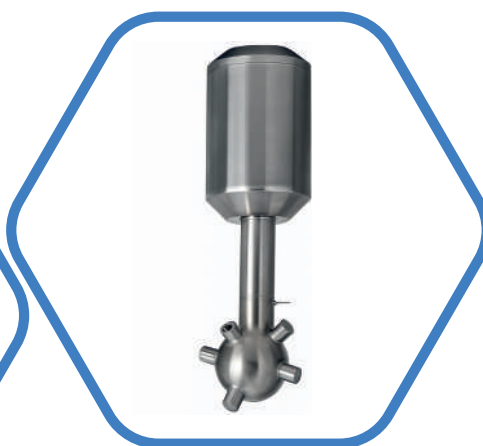
SPECIFICATION	ROTADISC
Standard Connections	BSP, NPT, NPT 1"-3"
Insertion Opening	62.5 mm to 117mm
Standard Construction Matl.	Stainless Steel 316L
Cleaning Diameter in m	Upto 5.0 m
Flow rate in LPM	142 -1100
Operating Pressure in Bar	2.0-3.0 Bars
Max Operating Temperature	Max 95°C
Max Ambient Temperature	Max 140°C
Spray Angle	360°
Weight (Kg)	0.77 - 3.63



# ALTOJET SERIES 75 & 125



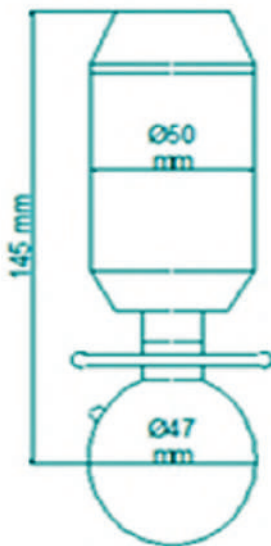
**ALTOJET 75**



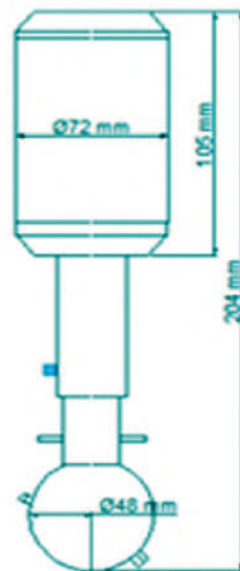
**ALTOJET 125**

SPECIFICATION	ALTOJET 75	ALTOJET 125
Standard Connection: Thread	3/4" BSPT/ NPT Female	1.1/2" BSP / NPT Female
Spray Pattern Options :	Type: C/B, D/F, G/E & H	Type: C/B, D/F, G/E & H
Insertion Opening	60 mm min.	80 mm min.
Standard Construction Matl.	Stainless Steel 316L with CPTFE/ PTFE	
Cleaning Diameter in m	4.5 Meter	7 meter
Flow rate in LPM	50-100 l/ min	110-270 l/ min
Operating Pressure in Bar	3-12 bars	
Max Operating Temperature	Max 95°C	Max 95°C
Max Ambient Temperature	Max 140°C	
Spray Angle	360°	
Preferred mounting Position	Vertical Down, Horizontal Execution On Request	
Weight	1.1 kg	2.3 kg

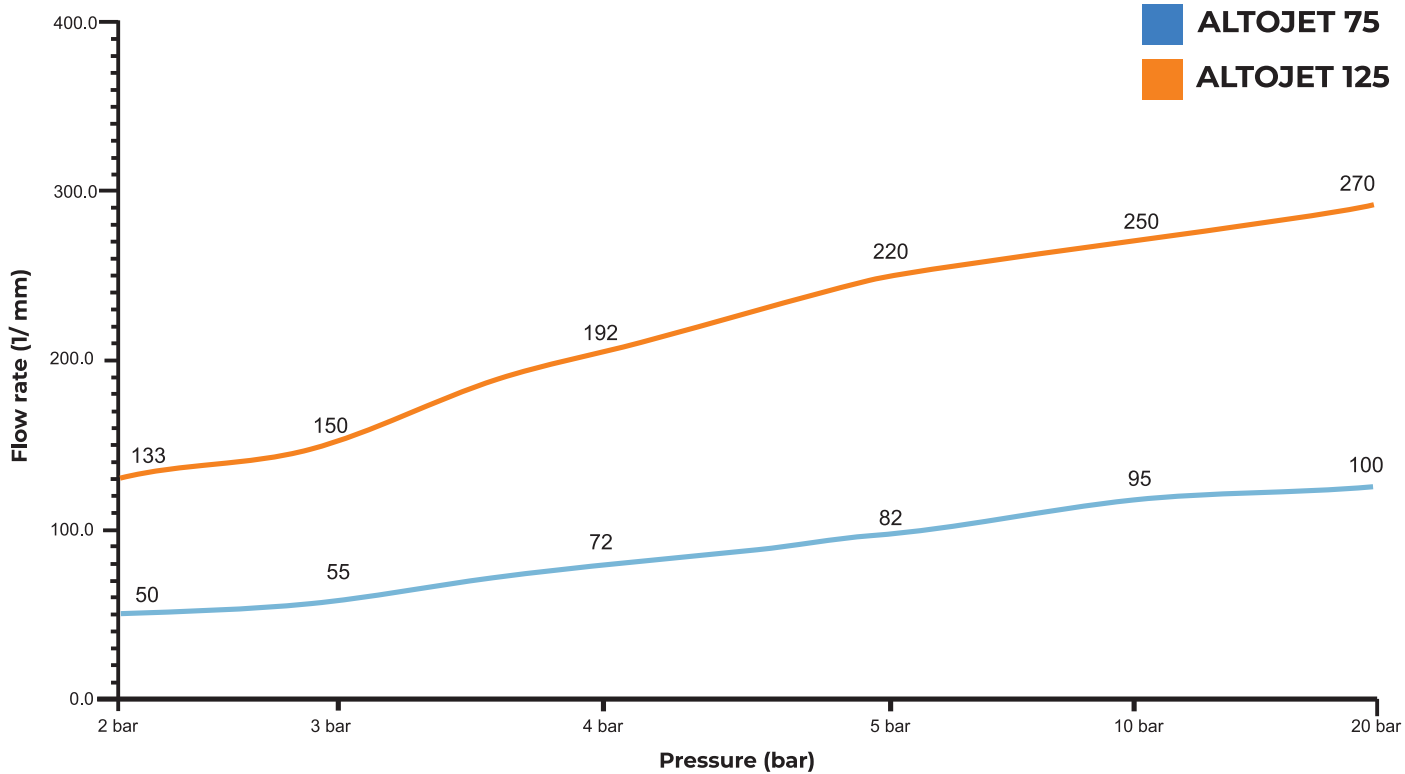
# ALTOJET DIMENSION DIAGRAMS



**ALTOJET 75**

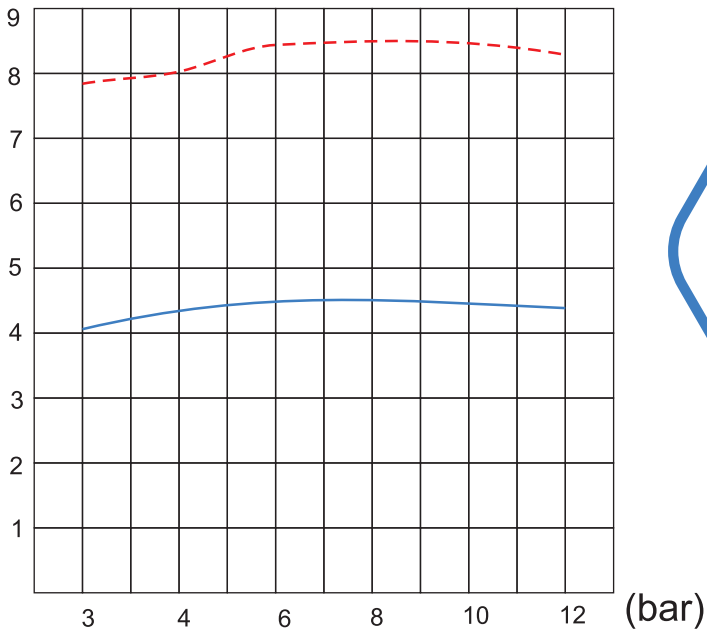


**ALTOJET 125**



**Altojet Pressure V/S Flow Rate Curve**

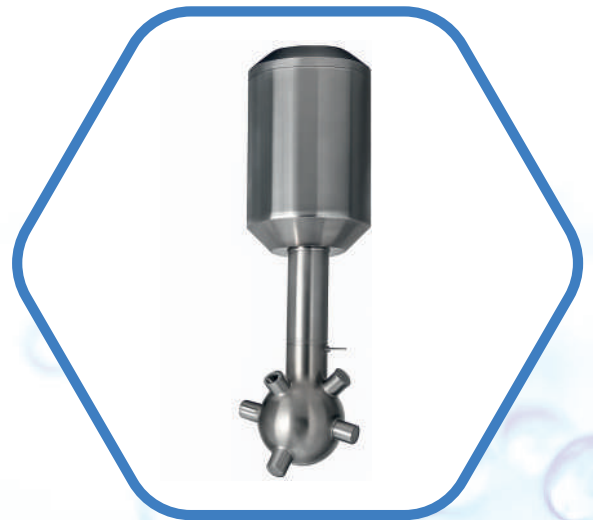
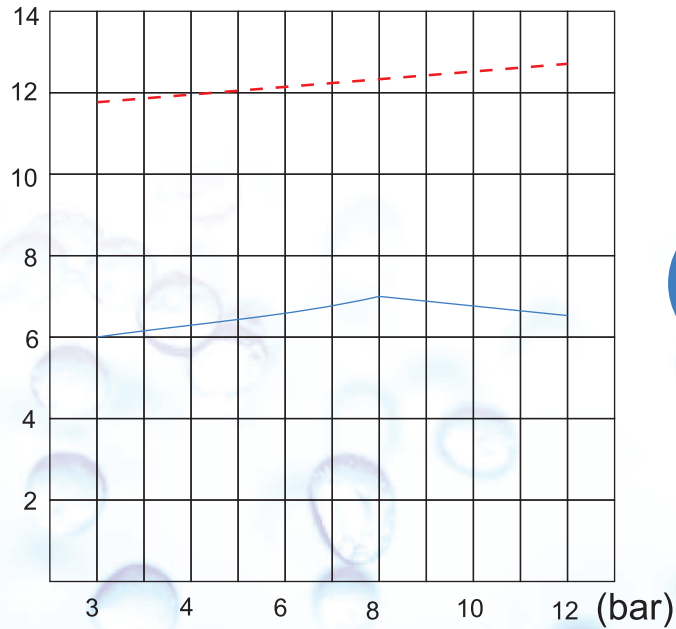
Diameter m



**ALTOJET 75**

**ALTOJET 50 WETTING & CLEANING CURVE**

Diameter m



**ALTOJET 125**

**ALTOJET 75 WETTING & CLEANING CURVE**

# ORBICLEAN SERIES 1,2,3 & 4



**ORBICLEAN 1**



**ORBICLEAN 2**



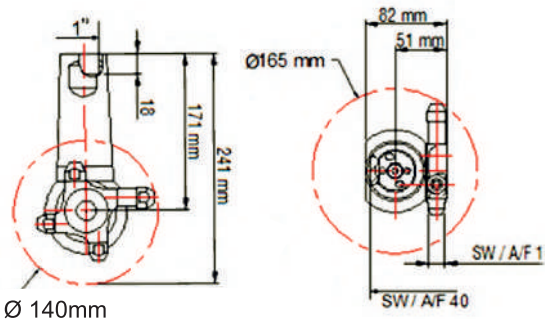
**ORBICLEAN 3**



**ORBICLEAN 4**

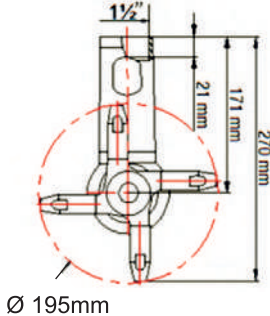
SPECIFICATION		ORBICLEAN 1		ORBICLEAN 2			ORBICLEAN 3		ORBICLEAN 4				
Standard Connection: Thread		1" BSP/NPT Female		1.1/2" BSP/ NPT Female			1.1/2" BSP/ NPT Female		2" BSP/ NPT Female				
Insertion Opening		Min. Ø 130 mm		Min. Ø 210 mm			Min. Ø 55mm		Min. Ø 75mm				
Standard Construction Matl.		Stainless Steel 316L/CPTFE/ PTFE											
Cleaning Diameter in m		Max 17 m		Max 19 m			Max 27 m		Max 33 m				
Flow rate in LPM		93-175		200-390			243-378		236-790				
Operating Pressure	Nozzle Ø in mm	4.5	6	7	8	9	11		8	9	10	11	12
	In Bar	4-10		4-10			4-10		4-10				
Max Operating Temperature		Max 95°C		Max 95°C			Max 95°C		Max 95°C				
Max Ambient Temperature		Max 140°C											
Spray Angle		360°											
Preferred mounting Position		Any Angle											
Weight		2.8 kg		3.9 kg			3.1 kg		4.6 kg				
Cycle time (Min/ 6 bar)		4 min		5 min			8 min		6 min				

# ORBICLEAN DIMENSION DIAGRAMS



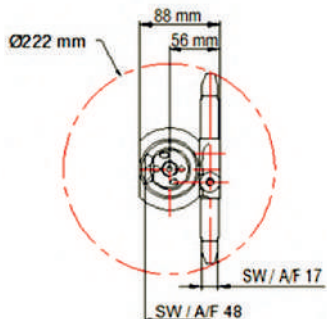
Ø 140mm

**ORBICLEAN 1**

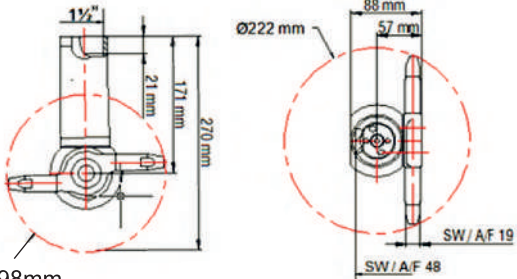


Ø 195mm

**ORBICLEAN 2**

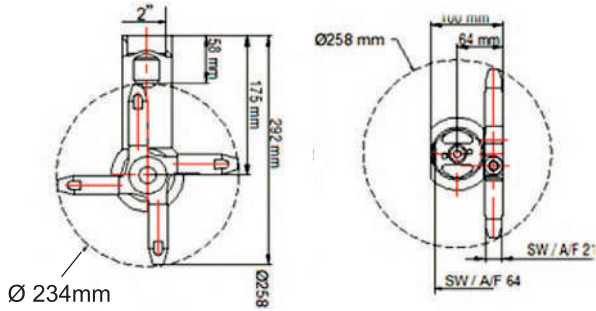


SW/A/F 48



Ø 198mm

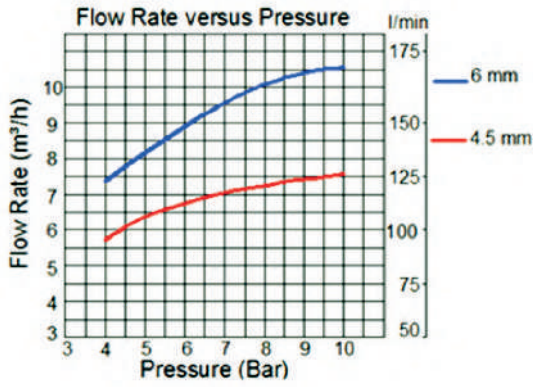
**ORBICLEAN 3**



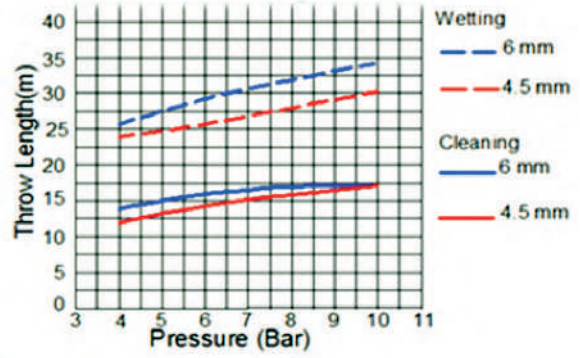
Ø 234mm

**ORBICLEAN 4**

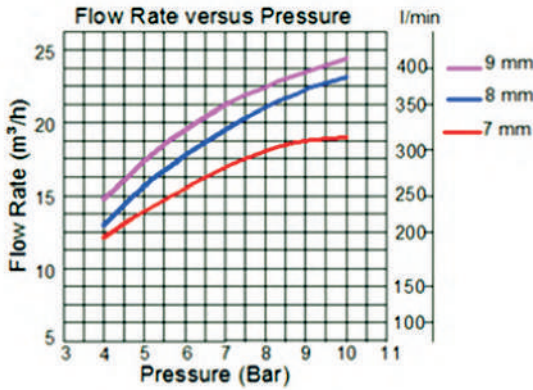




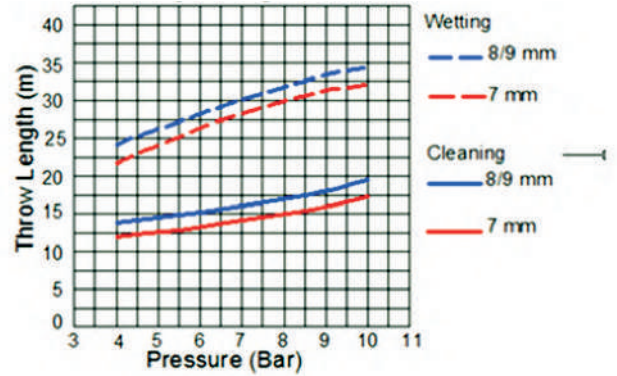
**ORBICLEAN 1 PRESSURE VS FLOW RATE CURVE**



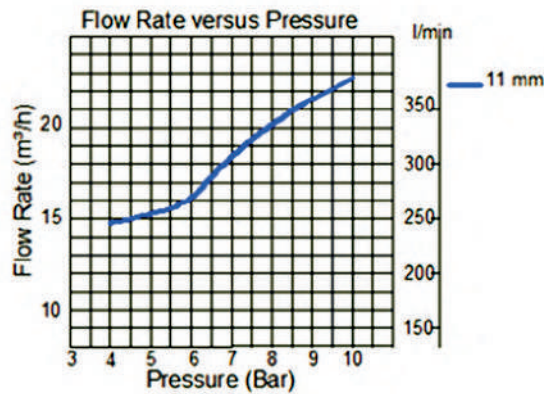
**ORBICLEAN 1 WETTING DIAMETER & CLEANING CURVE**



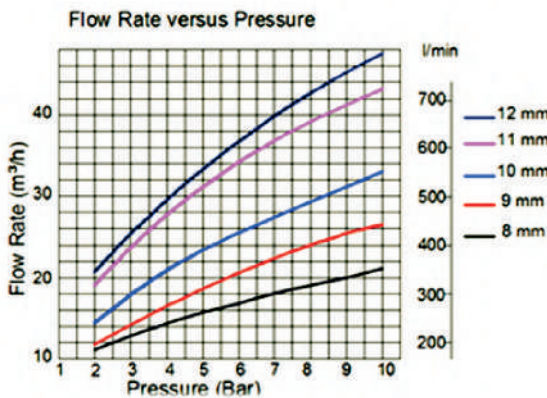
**ORBICLEAN 2 PRESSURE V/S FLOW RATE CURVE**



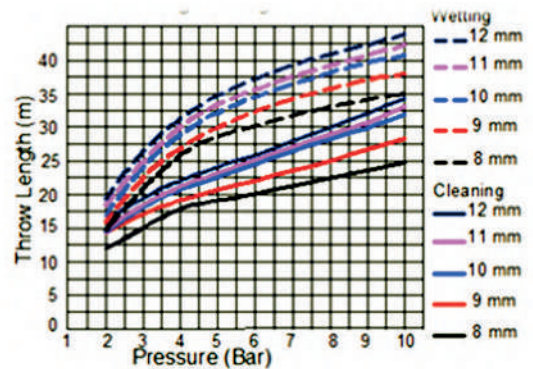
**ORBICLEAN 2 WETTING DIAMETER & CLEANING CURVE**



**ORBICLEAN 2 PRESSURE V/S FLOW RATE CURVE**

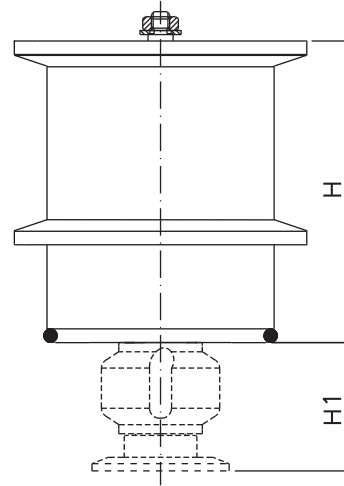



**ORBICLEAN 4 PRESSURE V/S FLOW RATE CURVE**



**ORBICLEAN 4 WETTING DIAMETER & CLEANING CURVE**

# ALTOFLUSH SELF RETRACTING POP-OUT NOZZLE

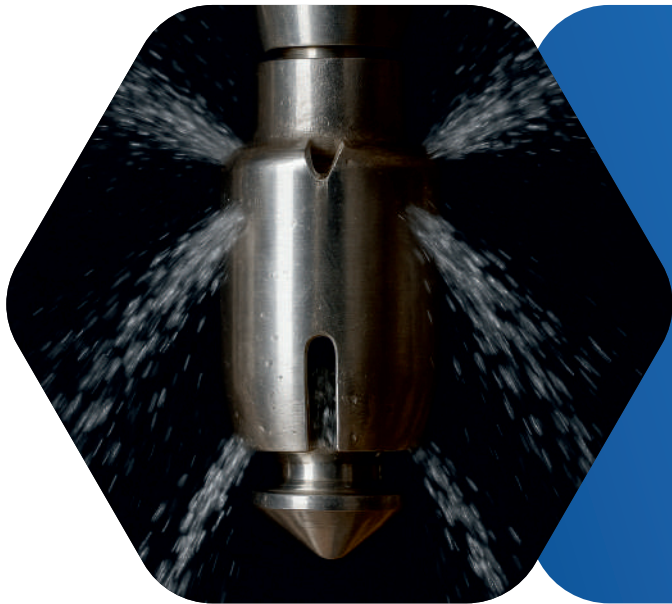


Coverage Type	Spray Angle
	270°

SPECIFICATION	ALTO FLUSH
Standard Connections	2" TC & Threaded
GA Diagram - H	66 mm
GA Diagram - H1	28 mm
Standard Construction Matl.	Stainless Steel 316L
Cleaning Diameter in m	Upto 5.0 m
Flow rate in LPM @ 2 bar	20 - 40
Operating Pressure in Bar	1.5 - 3.0 Bars
Max Operating Temperature	Max 95°C
Max Ambient Temperature	Max 140°C
Spray Angle	270°

**Alto Flush** series self retracting (pop out) nozzles are best suitable for installations where complete flush position is required. Generally useful for difficult to reach areas like pipelines, bends vents & ducts.

The unique pop-out nozzle retracts its spray nozzle upon application of pressure and shuts in a complete flush position when operation is stopped.

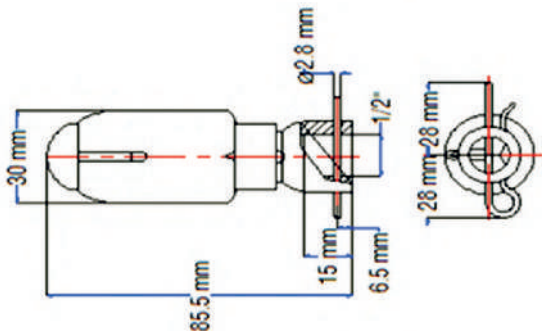


# SANI-ALT STANDARD & SL

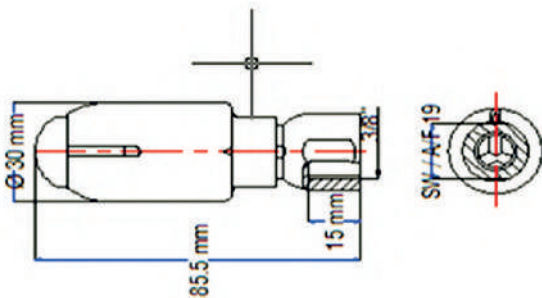


SPECIFICATION	SANI-ALT- STANDARD & SL
Standard Connection: Thread	3/8" BSP/NPT Female
Optional connection : Pin Fix	On 1/2" ID Pipe
Insertion Opening	Min. Ø32 mm, Pin Fix min. Ø60 mm
Standard Construction Matl.	Stainless Steel 316L
Cleaning Diameter in m	Max 4.8 m
Flow rate in LPM	25- 92 l / min
Operating Pressure in Bar	3-20 bars
Max Operating Temperature	Max 95°C
Max Ambient Temperature	Max 140°C
Spray Angle	360°
Preferred mounting Position	Vertical down, Horizontal on request
Weight	Standard 0.17 kg & SL 0.21 kg

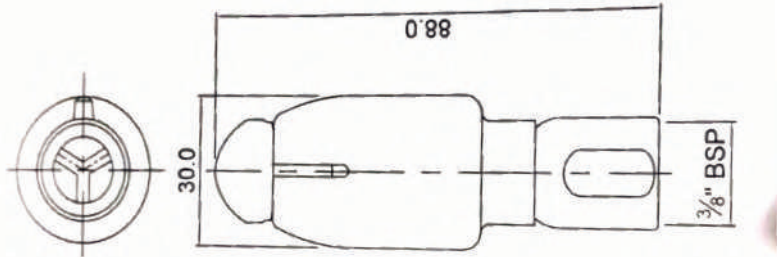
# SANI-ALT DIMENSION DIAGRAMS



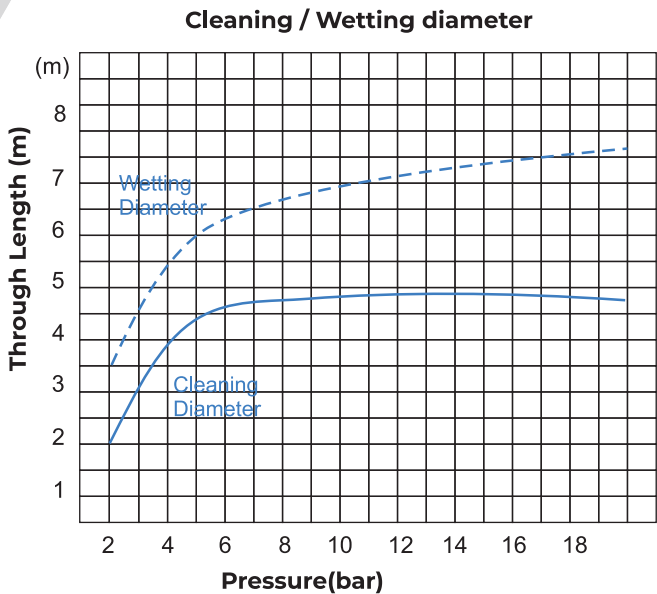
SANI-ALT PIN FIX



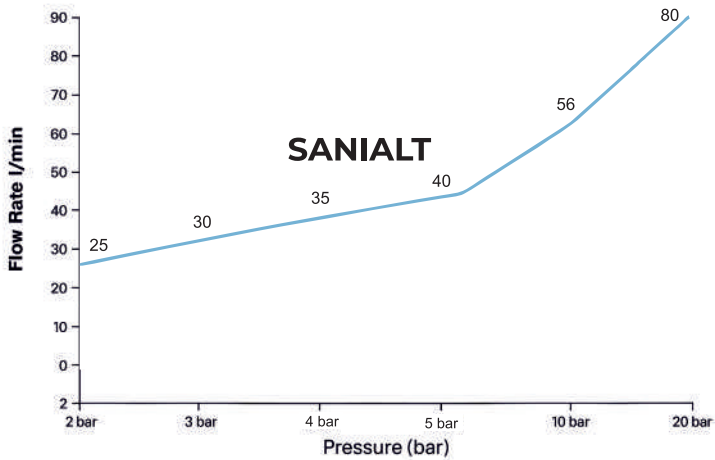
SANI-ALT THREADED



SANI-ALT SL



SANI-ALT Wetting & Cleaning Curve



SANI-ALT Pressure vs Flow Rate

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