



THE
SPRAY NOZZLE
PEOPLE

www.spray-nozzle.co.uk

A photograph of a large industrial facility with several tall, cylindrical stainless steel tanks. The tanks are connected by a complex network of pipes and valves. A control panel is visible on the right side. The scene is brightly lit, suggesting an indoor industrial setting.

Tank Cleaning

Metric Catalogue - English

COMPLETE TANK CLEANING RANGE

The automated cleaning of tanks and vessels is a common process in a wide range of industries. The sheer variety of residues, environments and tank sizes that need cleaning warrants an equally wide range of tank cleaning nozzles. The Spray Nozzle People offer a broad range of tank washing nozzles and machines. Our range is suitable for cleaning anything from the very smallest process tanks to very large storage tanks. Similarly our tank cleaners can be deployed to clean anything from very light water soluble residues to heavy or encrusted soiling.

Types of tank cleaner

Our range is divided into three classes of tank cleaner.

1- Static. These are either very wide angle spray nozzles or manifolds of multiple nozzles. The most common type of static cleaner in this class are spray balls.

2- Rotary spray. These cleaning heads spin under the fluid pressure and this rotation allows for a more directed spray to be distributed omni-directionally. The motion, combined with the more directed spray gives these heads a far greater scrubbing action than static nozzles.

3- Rotary Jet Cleaners. These cleaning heads have 2 or more nozzles that produce powerful straight jets of fluid. These impact on the surface of the tank blasting away tough residues. The nozzles will rotate in two dimensions over a set cleaning cycle so that the cleaning jets are brought to bear on each part of the tank.

Selecting a tank cleaner

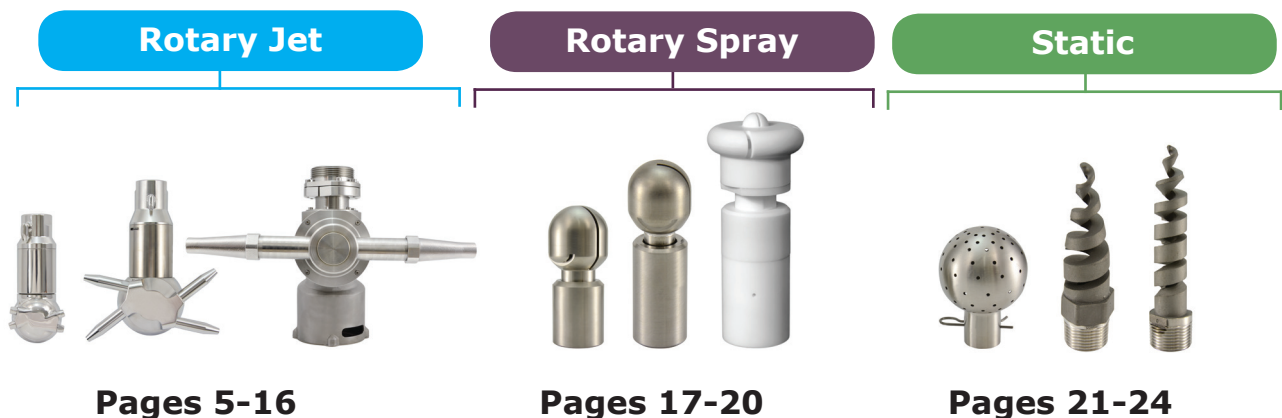
A number of factors need to be considered when selecting the correct tank cleaning machine.

1- The size of tank. The size of the tank will dictate strongly which cleaners can be deployed. Each nozzle/machine will have an upper limit to its effective cleaning radius and so as tanks get larger the choice of cleaning head becomes more limited. Tanks above about 10 metres in diameter can only really be cleaned well by rotary jet cleaners for example.

2- Residue type. Some residues simply require a rinse with water to remove them. Others require considerable impact to dislodge them from the tank wall. Typically harder residues will necessitate the use of impingement tank cleaners like the Orbitor range.

3- The tank environment. Corrosive or hot tanks may dictate heavily which type of tank cleaning nozzles can be deployed in the vessel. In particular this will dictate the material of construction.

4- Obstructions in the tank. Baffles, agitators and other internal structures may block the fluid of tank cleaners. This may necessitate the deployment of multiple machines.



Images not to scale

CHOOSING A TANK WASHING SYSTEM

Adequate coverage and effective scrubbing are of prime importance in bottle, drum, and tank washing. Choosing from the variety of tank washing nozzles can be confusing. In selecting nozzles / machines you should consider the following factors: size and shape of vessel to be cleaned, vessel opening, type of material to be removed, and spray coverage.

Size and Shape of Vessel to be Cleaned

The nozzles and machines in this brochure can be used to clean, wash, and rinse every size of vessel from small bottles, moderately sized process tanks, to large swimming pool sized tanks.

Static nozzles will have a limited coverage and produce little impact but have the advantage of being a cost effective and very robust as they have no moving parts.

Rotary spray balls like the HWS and HWP give greater coverage and moderate impact so they can clean larger vessels up to 7.9 metres in diameter. They are also able to clean tougher residues and will use less water to do so.

Rotary jet cleaners can have jets over 20 metres in length meaning a centrally mounted unit could clean a 40m diameter tank. They will also be deployed in small and mid-sized tanks to clean really tough residues.

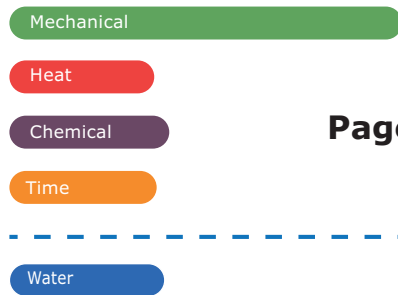
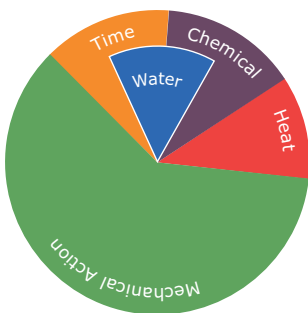
Tank Washing Nozzle	up to	Coverage distance in metres (diameter)												
		2	3	4	5	7	9	12	16	18	20	30	40+	
TW 12 - 20	1.8m													
HydroClaw	3.1m								Static					
TW1	3.6m													
LEM	4.9m													
SVSTW	6.0m													
HydroWhirl S	6.0m							Rotary Spray						
HydroWhirl Poseidon	7.6m													
Orbitor Compact	17m													
Orbitor 4	26m													
Orbitor 2	40m													
Storm Blaster	30m													

THE CLEANING MIX

Effective tank cleaning consists of 4 elements: chemical action, time, mechanical action and heat. Each of these elements contributes a certain amount of "cleaning power" in any given tank cleaning operation. An increase in one element means other elements can be reduced without compromising overall cleaning. Conversely a reduction in any given element must be compensated for by a corresponding increase in one or more of the other elements if cleaning is to be maintained. The relative contributions of each element varies considerably depending on which type of tank cleaning head or nozzle is deployed. These are illustrated in the sinner circle diagrams shown below.

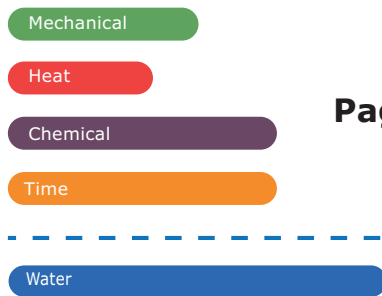
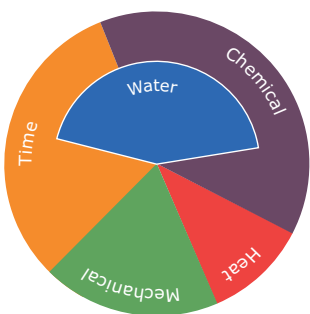
WATER CONSUMPTION

Water consumption is driven by both the time element and the chemical element. The longer a tank cleaning system is running for then it is obvious that more water will be used. Water is known as a universal solvent, meaning it will dissolve more substances than any other chemical. As such it is an important component of the chemical part of the cleaning mix. Often, in fact, it is the only chemical used and so makes up the entire chemical component. So the overall water consumption will depend on how much cleaning power is derived from the chemical and time parts of the mix.



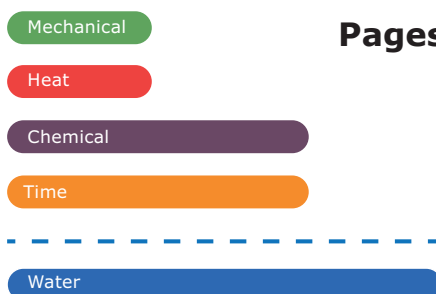
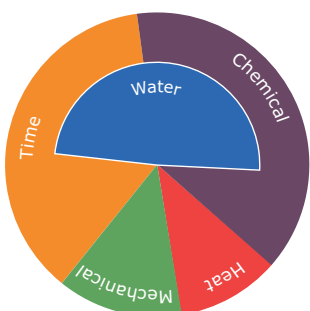
Pages 5-16

Rotary Jet



Pages 17-20

Rotary Spray



Pages 21-24

Static



OPTIMISING TANK CLEANING

Optimising a tank cleaning system will depend very much on the residue and nature of the tank. The sinner circles for each system are a good place to start. The relative cost of each element should be assessed and then consideration can be given to the optimal mix. Increasing a cheaper element means a more expensive other element can be reduced thus improving efficiency. So, for example, reducing the cost of heating will mean either more time, chemicals or mechanical action will need to be increased.

SAVING WATER

Reducing water consumption is often a key driver for many businesses. Water is a costly resource. Not only does it need to be purchased it also needs to be pumped and then disposed of once contaminated. As discussed above the water consumption of any tank cleaning system is primarily a function of the time and chemical action elements. So if water reduction is a goal, it follows that the mechanical action and / or the heat element will need to be increased.

TANK WASHER SELECTION

Generally speaking the rotary jet cleaners will be more water efficient than rotary spray and static systems. This is because the mechanical action element of these tank cleaners is so much higher than other types of tank cleaner. However smaller tanks simply may not be able to accommodate larger rotary jet cleaners. In addition, lighter residues may only need relatively light cleaning and so impact jet cleaners will actually be wasteful. As with most real world applications there are always exceptions to the rules but nonetheless the following rules of thumb can be applied to tank cleaning selection.

- 1 - For tanks smaller than 1 metres in diameter with medium to light residues static nozzles will probably be the most efficient.
- 2- For tanks between 1 and 3 metre in diameter with light residues rotary spray balls will probably be most efficient
- 3- For tanks between 1 and 3 metres in diameter with medium or tough residues fast cycle rotary jet cleaners like the Orbitor Eco will probably be most efficient.
- 4- For tanks above 3 metres, even with light residues, rotary jet cleaners will probably be the most efficient.
- 5- For very tough residues, regardless of tank size, rotary jet cleaners will be the most efficient.
- 6- For tanks above 6 metres in diameter rotary jet cleaners are the only viable option as only they can reach the sides.

Orbitor 2

Rotary Jet- 2 Nozzle

The Orbitor 2 is the two-nozzle variant of the Orbitor tank cleaning system. This is a hygienic, self cleaning, self lubricating and highly versatile tank washing machine capable of cleaning tough residues from tanks from 2 - 35 metres in diameter.

The Orbitor 2 is typically used in food processing, beverage, pharmaceutical and chemical tank cleaning applications. Its versatile design, however, means it can be configured to clean tough residues in almost any industrial application.



Spray characteristics:


Flow rates: 80 - 900 l/min
Working Pressure: 4 - 10 bar
Jet length: Up to 20 metres
Wash pattern: 360°
Cycle times: 15.5 - 33 minutes

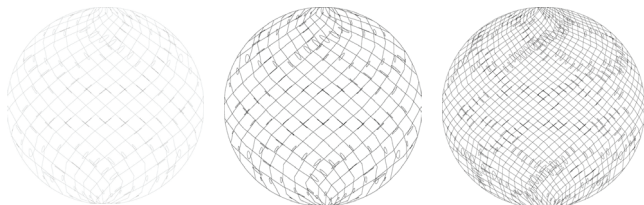
Materials:

Housing: 316L
Nozzle Head: 316L
Gears: PEEK + 316 SS
Bushings: Carbon Filled PTFE

Weight: 8Kg

Key product features

- Entirely fluid driven meaning no external power source is required
- Self lubricating
- Powerful jets up to 20 metres in length
- Easy to maintain. Can be stripped and reassembled in 15 minutes.
- ATEX certified zones 0 and T6 
- Self cleaning and hygienic design suitable for food and pharmaceutical applications



Spray pattern builds up over a set cycle

Made in the UK



The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine.

Key Advantages

- **Hygienic** The Orbitor 2 is a fully self cleaning machine and is made from food / pharmaceutical grade hygienic materials.
- **Effective** The Orbitor 2 is a highly effective cleaning machine delivering powerful cleaning jets up to 20 metres in length.
- **Safe** The Orbitor 2 is one of the only tank cleaners that is ATEX certified for use in all zones and temperatures.
- **Powerful** The two nozzle configuration means that larger nozzles with higher flow rates can be deployed extending the jet length to over 20 metres

Orbitor 2

Rotary Jet- 2 Nozzle

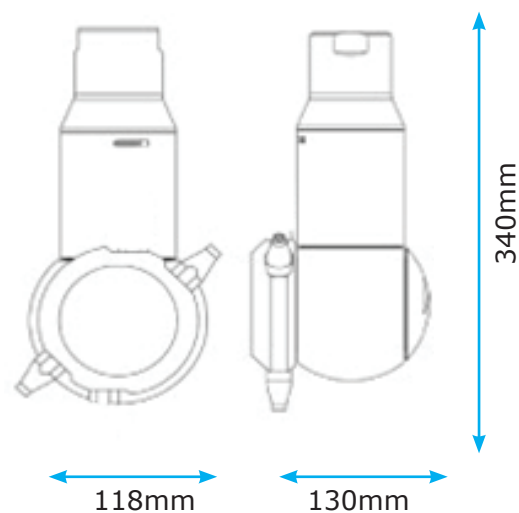
How it works

The Orbitor 2 is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the Orbitor and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Orbitor there will be a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Configurations

Feature	Available Options
Hygienic	Non-hygienic as an option.
ATEX	ATEX options available
Clean Pattern	360° only
Nozzle Sizes	6,7,8,10 or 12.5mm



ROTARY JET

Effective jet length, flow rate and cycle times

BAR	2x6mm			2x7mm			2x8mm			2x10mm			2x12.5mm		
	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min
3	80	5.5	33	93.3	6.5	37.5	117	7.2	25.7	217	9.8	41	330	10.1	26.8
4	91.7	6	27.2	117	7.2	31.6	150	8	22.9	255	10.5	34.2	383	11.2	24
5	108	6.3	24.7	137	7.9	28.2	172	8.7	20.5	290	11.5	30.5	433	12.1	21.7
6	122	7	22.6	153	8.5	25.8	190	9.4	18.9	320	12.7	28	473	13.4	19.8
7	130	8	21	168	9.2	24	203	10.3	17.5	347	13.9	26	512	14.8	18.4
8	140	9	19.5	182	10.4	22.3	213	11.3	16.4	368	15.2	24.5	547	16.4	17.2
9	148	10.2	18.4	192	11.3	21	223	12.4	15.6	390	17	23.2	572	18.3	16.3
10	157	11.5	17.4	200	12.3	20	232	13.5	14.9	405	18.8	22	600	20.1	15.5

Orbitor 4

Rotary Jet- 4 Nozzle

The Orbitor 4 is the four nozzle variant of the Orbitor tank cleaning system. This is a hygienic, self cleaning, self lubricating and highly versatile tank washing machine capable of cleaning tough residues from tanks from 2 - 26 metres in diameter.

The Orbitor 4 is typically used in food processing, beverage, pharmaceutical and chemical tank cleaning applications. Its versatile design, however, means it can be configured to clean tough residues in almost any industrial application.



Spray characteristics:

Flow rates: 80 - 458 L/min
Working Pressure: 4 - 10 bar
Jet length: Up to 13 metres
Wash pattern: 360°
Cycle times: 5.5- 15.5 minutes

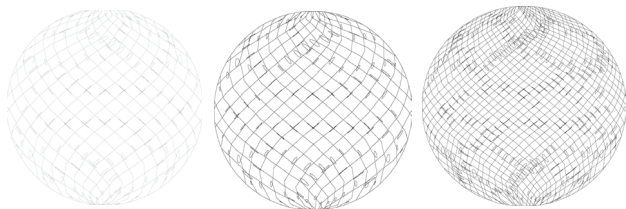
Materials:

Housing: 316L
Nozzle Head: 316L
Gears: PEEK + 316 SS
Bushings: Carbon Filled PTFE

Weight: 8Kg

Key product features

- Entirely fluid driven meaning no external power source is required
- Self lubricating
- Powerful jets up to 13 metres in length
- Easy to maintain. Can be stripped and reassembled in 15 minutes.
- ATEX certified zones 0 and T6
- Self cleaning and hygienic design suitable for food and pharmaceutical applications



Spray pattern builds up over a set cycle

Made in the UK 

The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine.

Key Advantages

- **Hygienic** The Orbitor 4 is a fully self cleaning machine and is made from food / pharmaceutical grade hygienic materials.
- **Effective** The Orbitor 4 is a highly effective cleaning machine delivering powerful cleaning jets up to 13 metres in length.
- **Safe** The Orbitor 4 is one of the only tank cleaners that is ATEX certified for use in all zones and temperatures.
- **Powerful** The four nozzle configuration means that cycle times are reduced when compared to the 2 nozzle machine.

Orbitor 4

Rotary Jet- 4 Nozzle

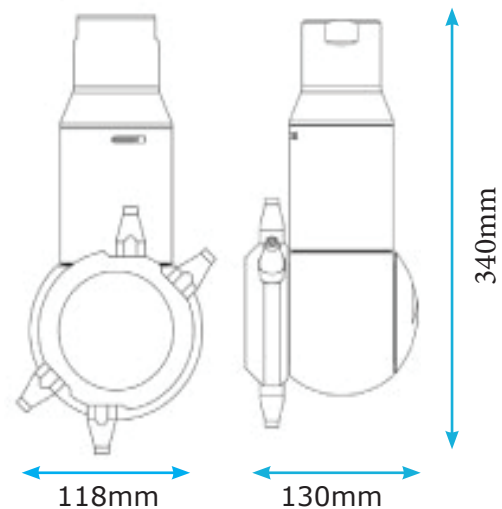
How it works

The Orbitor 4 is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the Orbitor and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Orbitor there will be a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Configurations

Feature	Available Options
Hygienic	As standard. Non-hygienic as an option.
ATEX	ATEX options available
Clean Pattern	360° and 180°
Nozzle Sizes	4.2, 5, 6, 7 and 8mm



ROTARY JET

Effective jet length, flow rate and cycle times

BAR	4x4.2mm			4x5mm			4x6mm			4x7mm			4x8mm		
	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min
3	80	2.9	11	112	4	13	138	5.3	15.5	217	6.5	20.1	250	7.2	15.5
4	100	3	9.3	137	4.2	10.8	170	5.7	12.9	252	7.1	15.2	293	8	12.9
5	115	3.5	7.9	155	4.7	9.4	200	6.2	11	283	7.7	14.9	333	9	11
6	127	4	6.9	173	5.2	8	220	7	9.5	310	8.5	13	367	9.9	9.5
7	138	5	6.3	185	6.3	7.3	240	8	8.4	333	9.4	11.7	395	10.6	8.5
8	147	6.2	5.8	195	7.5	6.8	257	9.4	7.6	350	10.3	10.4	418	11.2	7.8
9	153	7.1	5.6	202	8.5	6.5	270	10.3	7	367	11.2	9.3	438	12.2	7
10	157	7.8	5.5	207	9	6.4	282	11.2	6.9	380	12	8.9	458	13	6.9

Orbitor Eco

Rotary Jet- Very Fast Cycle

The Orbitor Turbo is a new breed of impingement tank cleaners designed to vastly improve water and a time efficiency. Unlike conventional impingement cleaners that have been geared for power, this tank cleaning head has been geared to produce a very fast cleaning cycle that uses very little water.

Despite its very fast cycle time and low water consumption the Orbitor Turbo still delivers powerful impact cleaning. When compared to static spray balls and rotary spray balls the cleaning power of the Orbitor is far greater. This means that it is a far more efficient cleaning head.

Key product features

- Up to 95% water saving when compared to static spray balls
- Up to 75% water saving when compared to rotary spray balls
- Entirely fluid driven meaning no external power source is required
- Jets with up to 4 metres effective cleaning radius
- Easy to maintain. Can be stripped and reassembled in 15 minutes.
- Self cleaning and hygienic design suitable for food and pharmaceutical applications
- Very fast cycle times between 2 - 11 minutes

Made in the UK



The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine.



Spray characteristics:

Flow rates: 45- 198 l/min
Working Pressure: 4 - 12 bar
Jet length: Up to 5 metres
Wash pattern: 360°
Cycle times: 1.7 - 6 minutes

Materials:

Housing: 316L
Nozzle Head: 316L
Gears: PEEK + 316 SS
Bushings: Carbon Filled PTFE

Weight: 2.5Kg

Key Advantages

- **Efficient** With fast cycles and low flow rate the Orbitor Eco is the most efficient way to clean and rinse light to moderately tough residues.
- **Hygienic** The Turbo is a fully self cleaning machine and is made from food / pharmaceutical grade hygienic materials.
- **Effective** The Turbo is a highly effective cleaning machine delivering superior cleaning power to tanks up to 8 metres in diameter.
- **Fast** The Orbitor Eco can complete a cleaning cycle in under two minutes. This means that down time can be minimised.

Orbitor Eco

Rotary Jet- Very Fast Cycle

How it works

The Orbitor Turbo is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the Orbitor and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Orbitor there will be a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Wash cycle times

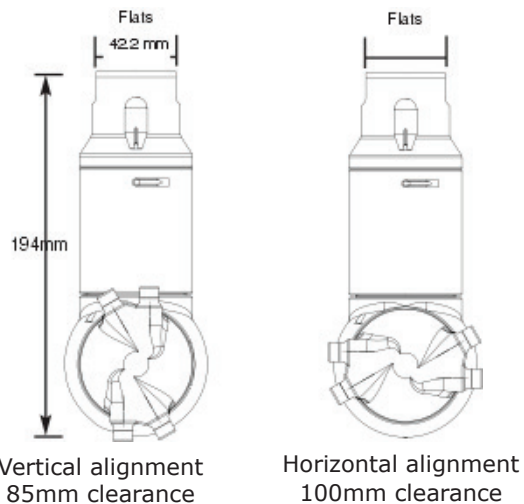
BAR	4x3mm			4x4mm			4x5mm			4x6mm		
	Flow rate L/min	Jet length Mtr	Cycle Time Min	Flow rate L/min	Jet length Mtr	Cycle Time Min	Flow rate L/min	Jet length Mtr	Cycle Time Min	Flow rate L/min	Jet length Mtr	Cycle Time Min
3	45.0	1.0	6	66.7	2.0	5.5	88.3	2.5	4.5	115.0	3.0	4
4	51.7	1.5	5.5	75.0	2.4	4.8	100.0	3.0	4	126.7	3.5	3.5
5	58.3	2.0	5	85.0	3.0	4.3	110.0	3.4	3.5	138.3	3.7	3
6	65.0	2.3	4.4	93.3	3.3	3.8	120.0	3.6	3	151.7	4.0	2.7
7	71.7	2.5	4	101.7	3.6	3.3	130.0	4.0	2.8	163.3	4.5	2.4
8	78.3	2.8	3.5	110.0	3.8	2.9	140.0	4.2	2.5	175.0	4.7	2.1
9	85.0	3.0	3.1	118.3	4.0	2.6	148.3	4.5	2.1	186.7	5.0	1.8
10	90.0	3.0	3	126.7	4.0	2.5	156.7	4.5	2	198.3	5.0	1.8

These are effective cleaning jet lengths so the Orbitor can clean a tank with a diameter approximately twice these lengths. It will produce wetting at a distance approximately 50% higher than those shown in the table above.

Configurations

Feature	Available Options
Hygienic	As standard. Non-hygienic as an option.
ATEX	ATEX not available
Clean Pattern	360° only
Nozzle Sizes	3,4,5 or 6mm

Dimensions



Orbitor Compact

Rotary Jet- Compact Model

The Orbitor Compact is a powerful impingement cleaning head. It is geared to rotate fairly slowly to deliver the optimum jet dwell time on the tank wall so as to ensure the maximum cleaning power. Despite its incredible cleaning power the compact design means that the Orbitor 100 can easily fit into a 100mm opening and, with the arms vertically aligned, will squeeze through an 85mm opening.

The Orbitor Compact is typically used in food processing, beverage, pharmaceutical and chemical tank cleaning applications. The compact design means it is suitable for deployment even in relatively small tanks. This means that the power of impingement cleaning can now be delivered to small batch tanks.



Spray characteristics:

Flow rates: 48.3 - 198 l/min
Working Pressure: 4 - 12 bar
Jet length: Up to 8.6 metres
Wash pattern: 360°
Cycle times: 9.5 - 22 minutes

Materials:

Housing: 316L
Nozzle Head: 316L
Gears: PEEK + 316 SS
Bushings: Carbon Filled PTFE

Weight: 2.5Kg

ROTARY JET

Key product features

- Entirely fluid driven meaning no external power source is required
- Self lubricating
- Powerful jets up to 9 metres in length
- Easy to maintain. Can be stripped and reassembled in 15 minutes.
- ATEX certified zones 0 and T6
- Self cleaning and hygienic design suitable for food and pharmaceutical applications



Made in the UK



The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine.

Key Advantages

- **Hygienic** The Orbitor Compact is a fully self cleaning machine and is made from food/pharmaceutical grade hygienic materials.
- **Effective** The Orbitor Compact is a highly effective cleaning machine delivering powerful cleaning jets up to 9.5 metres in length.
- **Safe** The Orbitor Compact is one of the only tank cleaners that is ATEX certified for use in all zones and temperatures.
- **Powerful** The powerful cleaning jets are configured to rotate at the optimum speed to maximise cleaning power.

Orbitor Compact

Rotary Jet- Compact Model

How it works

The Orbitor Compact is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the Orbitor and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Orbitor there will be a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Wash cycle times

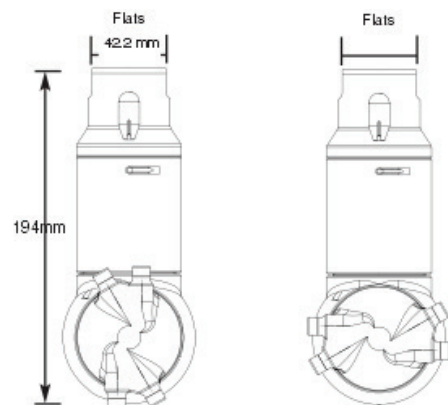
BAR	4x3mm			4x4mm			4x5mm			4x6mm		
	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min	Flow rate l/min	Jet length Mtr	Cycle Time Min
3	48.3	3.7	20	61.7	4.3	26	90.0	4.9	17	115.0	5.4	22.0
4	53.3	4.5	17	71.7	5.1	22	101.7	5.7	14	126.7	6.2	19.0
5	57.5	5.1	14.5	80.0	5.8	19	110.0	6.4	12	138.3	6.9	16.5
6	64.2	5.6	13	90.0	6.4	16	120.0	7.0	11	151.7	7.4	14.5
7	70.0	6.1	12	98.3	6.8	14	128.3	7.4	10.5	163.3	7.9	13.0
8	76.7	6.4	10.8	106.7	7.2	12.5	138.3	7.8	10	175.0	8.2	12.0
9	83.3	6.7	10	113.3	7.5	11.5	146.7	8.0	9.5	186.7	8.5	11.0
10	90.0	6.9	9.5	120.0	7.6	11	155.0	8.1	9.5	198.3	8.6	10.0

These are effective cleaning jet lengths so the Orbitor can clean a tank with a diameter approximately twice these lengths. It will produce wetting at a distance approximately 50% higher than those shown in the table above.

Configurations

Feature	Available Options
Hygienic	As standard. Non-hygienic as an option.
ATEX	ATEX options available
Clean Pattern	360° only
Nozzle Sizes	3,4,5 or 6mm

Dimensions



Vertical alignment
85mm clearance

Horizontal alignment
100mm clearance

Storm Blaster™

Rotary Jet- Storm Tank Cleaner

The Storm Blaster series has been specifically engineered for use in cleaning large storm water retention tanks. These machines are powerful, robust and are based on technology used for decades in cargo ship / tanker cleaning applications.

These machines can be deployed in cold, dirty and corrosive environments with little or no maintenance requirements. They will operate reliably and have a sufficient jet length to clean even the largest of storm tanks. These features also make them suitable for automated wet well / pump station cleaning.



Key product features

- Entirely fluid driven meaning no external power source is required
- Fully sealed gear box allowing for muds and other high particulate fluids to be used as the cleaning media e.g. final effluent
- Powerful jets up to 25 metres in length
- Stainless steel rugged design means almost no maintenance is required



Storm Blaster installed in a covered tank

Made in the UK



The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine

Spray characteristics:

Flow rates: 100 - 570 L/min
Working Pressure: 2 - 10 bar
Jet length: Up to 25 metres
Wash pattern: 180° or 360°
Cycle times: 26 - 85 minutes

Materials:

Housing: 316
Nozzle Head: 316
Gears: PEEK + 316 SS
Bushing: Carbon Filled PTFE

Weight: 12kg for 6 - 12mm
14Kg for 14mm

Key Advantages

- **Efficient** It is by far the most water and energy efficient method of cleaning storm tanks.
- **Cost effective** When compared to the cost of other methods like tipping buckets and manned entry the Storm Blaster system is considerably cheaper in terms of both installation and operating cost.
- **Effective** The Storm Blaster removes more residue than other methods like tipping buckets and eductor swirl systems. This reduces the risk of foul smelling odours causing complaints from nearby residents.

Storm Blaster™

Rotary Jet- Storm Tank Cleaner

How it works

The Storm Blaster is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the machine and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Storm Blaster there will a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Configurations

Feature	Available Options
Hygienic	No hygienic option
ATEX	No
Clean Pattern	180° (standard) 360° (as option)
Nozzle Sizes	6, 7, 8, 10, 12 and 14mm

Wash cycle times

Pressure	Cycle time for all nozzle sizes	
	6-12mm nozzle	14mm nozzles
2	85	85
4	50	72
6	36	60
8	29	48
10	26	37

ROTARY JET

Effective jet lengths and flow rates

BAR	2x6mm		2x7mm		2x8mm		2x10mm		2 x 12mm		2 x14mm	
	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow Rate l/min	Jet Length Mtr	Flow Rate l/min	Jet Length Mtr
2	80	7	81	8	95	9.5	120	10	200	10	316	11
4	98	9.5	103	10	118	10.5	167	11	220	11.5	341	14
6	113	10.5	125	11	142	12	190	13	260	14	475	18.9
8	132	12	138	13	163	13.5	217	14	292	15	508	22.6
10	143	13	155	14	177	14.5	228	15	315	17	570	25.5

Orbitor -Dual

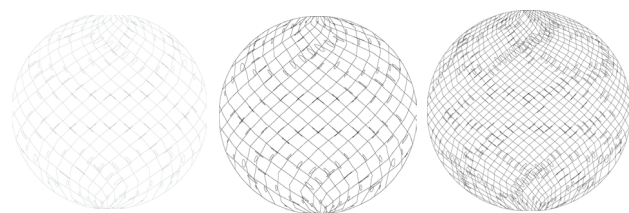
Rotary Jet- Dual Head

The Orbitor Dual is a double headed version of the Orbitor tank cleaning system. Each head can have 2 or 4 nozzles giving up to 8 powerful cleaning jets. The additional cleaning jets mean that the cleaning cycle time is reduced when compared to the single headed machines in the range. Furthermore the Twin can be configured to give a restricted cleaning pattern as low as 85 degrees making it suitable for more targeted cleaning applications.



Key product features

- Entirely fluid driven meaning no external power source is required
- Self lubricating
- Powerful jets up to 20 metres in length
- Stainless steel rugged design means almost no maintenance is required
- ATEX certified zones 0 and T6
- Variable wash pattern
- Very fast cycle time



Spray pattern builds up over a set cycle

Made in the UK



The Orbitor is manufactured in the UK exclusively for The Spray Nozzle People by Dasic Marine

Spray characteristics:

Flow rates: 85 - 500 L/min
Working Pressure: 5 - 10 bar
Jet length: Up to 20 metres
Wash pattern: 85° - 360°
Cycle times: 6.8 - 19 minutes

Materials:

Housing: 316L
Nozzle Head: 316L
Gears: PEEK + 316 SS
Bushings: Carbon Filled PTFE

Weight: 12Kg

Key Advantages

- **Fast** The extra cleaning jets mean that the cleaning cycle is considerably faster than other models meaning a faster turnover time.
- **Versatile** The double head design means that the cleaning pattern can be restricted to as low as 85° without compromising the rotation of the machine.
- **Effective** The Orbitor Twin is a highly effective cleaning machine delivering powerful cleaning jets up to 11 metres in length in the quickest cycle times.

Orbitor -Dual

Rotary Jet- Dual Head

How it works

The Orbitor Dual is a fluid driven rotary jet cleaner. The cleaning fluid is pumped through the Orbitor and this first passes through a turbine which causes the two nozzle arms to spin. The fluid then passes through the nozzles forming a powerful cleaning jet. As the arms rotate the main body also rotates in a set pattern. This is geared so that over a specific period of time (the clean cycle) the cleaning jets are brought to bear on each part of the tank ensuring a thorough, methodical clean.

For each configuration of Orbitor there will be a maximum jet length for any given fluid pressure. The max jet length is the overall reach of the resulting spray. The effective cleaning jet length is smaller than this and represents the distance from the machine where a reasonable cleaning action will be achieved. Clearly a more robust clean will be given the further within the effective jet length the target sits.

Configurations

Feature	Available Options
Hygienic	As standard non-hygienic option
ATEX	Option
Clean Pattern	Anything between 85° and 360°
Nozzle Sizes	4.2, 5 ,6, 7, 8, 9mm

Wash cycle times (180° down)

BAR	Cycle Time (min)					
	8x4 mm	8x5 mm	8x6 mm	8x7 mm	8x8 mm	8x9 mm
2	18.8	17.7	15.5	16	14.6	18.1
4	9.1	10.3	9.1	8.8	9.9	11.6
6	7.3	8.5	7.4	7.4	7.7	9.2
8	6.8	7.6	6.6	6.2	6.7	7.5

ROTARY JET

Effective jet lengths and flow rates

BAR	Nozzle size (mm)											
	4mm		5mm		6mm		7mm		8mm		9mm	
	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow rate l/min	Jet length Mtr	Flow Rate l/min	Jet Length Mtr	Flow Rate l/min	Jet Length Mtr
5	110	5.0	130	6.0	153	8.0	180	9.0	187	10.0	193	11.0
6	122	6.0	147	7.0	167	9.0	197	10.0	203	11.0	212	12.0
7	125	7.0	125	8.0	182	10.0	212	11.0	218	12.0	225	13.0
8	130	8.0	163	9.0	197	11.0	225	12.0	232	13.0	242	14.0
9	135	9.0	172	10.0	208	12.0	238	13.0	245	14.0	258	15.0
10	140	9.5	180	10.5	217	12.5	250	13.5	260	14.5	275	15.5

HydroWhirl® S

Rotary Nozzle - Stainless Steel

DESIGN FEATURES

- Cleans more quickly, and uses less water & lower pressure than static tank washers
- Surface finish of 0.8 microns Ra or better: ideal for sanitary applications
- Laser-welded design for durability
- Stainless steel construction - corrosion-resistant material
- Three connections: threaded, clip-on, and welded
- Made from FDA approved materials for use in Clean-In-Place (CIP) applications.

SPRAY CHARACTERISTICS

- Self-cleaning bearings
- Vigorous moving spray action
- Spray Angles: 360°, 90° Up, 90° Down, 180° Up, 180° Down, 270° Up, 270° Down

Flow rates: 4.39 – 338 l/min

All 360° HydroWhirl S nozzles are available with ATEX approval for Zone 0.



STANDARD CONNECTION SIZES

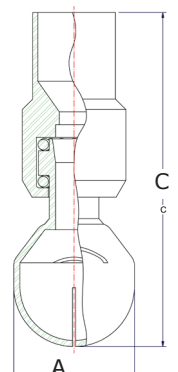
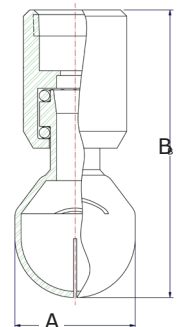
Additional connection sizes available on request

Connection Type	Nozzle Number														
	HWS 20-3	HWS 20-4	HWS 20	HWS 30-5	HWS 30-6	HWS 30	HWS 40-7.5	HWS 40-8	HWS 40-9	HWS 40	HWS 40HF-11	HWS 40HF	HWS 50-16	HWS 50	
Pipe Clip On	--	--	--	--	--	3/8"	--	--	--	3/4"	--	3/4"	--	1-1/2"	
Tube Clip On	--	--	--	--	--	3/4"	--	--	--	1"	--	1"	--	2"	
Pipe Weld On	--	--	1/4"	--	--	3/8", 1/2"	--	--	--	3/4", 1"	--	3/4", 1"	--	1-1/2", 2"	
Tube Weld On	--	--	1/2"	--	--	3/4"	--	--	--	1"	--	1"	--	2"	
FBSP/FBSP	1/8"	1/8"	1/8"	3/8"	3/8"	1/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	1-1/2"	1-1/2"	
DIN Clip On (mm)	--	--	8	--	--	15	--	--	--	20,25	--	20, 25	--	40, 50	
DIN Weld On (mm)	--	--	8, 10	--	--	15	--	--	--	15, 20, 25	--	15, 20, 25	--	40, 50	

ROTARY SPRAY

HydroWhirl S Flow Rates and Dimensions

Female Pipe Size	Nozzle Number	LITRES PER MINUTE @BAR						Dimensions (mm)			Mass (g)	Coverage Diameter (m) @2.75 bar
		0.5 bar	0.7 bar	1 bar	2 bar	3 bar	4 bar	A	B	C		
1/8"	HWS-20-3	4.39	4.79	5.40	7.05	8.19	9.11	16.6	42.7	69.1	24.9	1.5
	HWS-20-4	7.41	8.10	9.20	12.2	14.2	15.9					1.8
	HWS-20	10.8	12.0	13.9	20.2	25.3	29.1					
3/8"	HWS-30-5	7.71	8.80	10.4	15.3	18.9	21.9	27.9	59.4	83.3	93.0	2.4
	HWS-30-6	19.5	21.0	23.4	29.8	34.2	37.6					
1/4"	HWS-30	19.1	21.7	25.7	37.0	45.4	53.1					
3/4"	HWS-40-7.5	18.8	21.3	25.1	35.7	43.8	50.7	38.9	92.7	108	306	3.4
	HWS-40-8	21.5	24.3	28.6	40.6	49.6	57.2					
	HWS-40-9	26.6	30.2	35.7	51.5	63.0	72.7					
	HWS-40	30.2	34.6	41.2	59.9	71.8	82.5					
1 1/2"	HWS-40HF-11	40.9	46.4	54.5	77.3	95.0	109	38.9	92.7	108	302	4.0
	HWS-40HF	50.4	57.3	67.5	97.0	116	132					
	HWS-50-16	81.6	92.0	108	154	188	218					69.1
HWS-50	125	142	167	238	293	338						

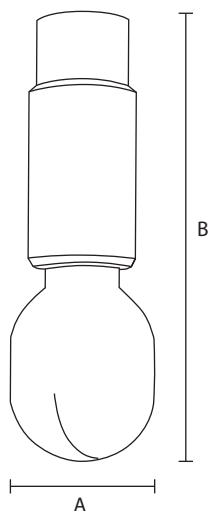


RSB – Rotary Spray Ball

Rotary Nozzle - Stainless Steel

DESIGN FEATURES

- Cleans more quickly, and uses less water & lower pressure than static tank washers
- Internal and external surface finish of 0.8 microns Ra or better: ideal for sanitary applications
- Laser-welded design for durability
- Stainless steel construction - corrosion- resistant material
- Two connections: threaded, clip-on or thread.
- Made from FDA approved materials for use in Clean-In-Place (CIP) applications. 318 stainless with hardened 316 stainless bearings.



SPRAY CHARACTERISTICS

- Self-cleaning bearings
 - Vigorous moving spray action
 - Spray Angles: 360°, 180° Down or 270° Up
- Flow rates: 16.7 – 313 l/min

WEIGHTS AND DIMENSIONS

Model	Connections	Weight	A	B
RSB25	3/8" Bsp or 1/2" clip on	0.35 kg	25 mm	60 mm
RSB45	1/2" or 3/4" BSP or 1" clip on	0.48 kg	45 mm	155/137* mm
RSB65	1 1/4" Bsp or 1 1/2" clip on	1.03 kg	65 mm	200/183* mm

Made in the UK

The RSB is manufactured in the UK exclusively for SNP

ROTARY SPRAY

* Shorter distance is for threaded variants.

	Pressure in Bar											
	1			1.5			2			3		
	Flow rate l/min	Scrub Diam (m)	Wet Diam (m)	Flow rate l/min	Scrub Diam (m)	Wet Diam (m)	Flow rate l/min	Scrub Diam (m)	Wet Diam (m)	Flow rate l/min	Scrub Diam (m)	Wet Diam (m)
RSB25 180° down	16.7	0.8	4.3	20.3	1.1	4.8	25.5	1.2	5.0	31.0	1.4	5.4
RSB25 270° and 360° high flow	30.5	0.8	4.3	36.8	1.1	4.8	46.5	1.2	5.0	58.3	1.4	5.4
RSB45 180° down	41.7	1.8	5.2	50.0	1.9	5.3	58.3	2.0	5.2	68.3	1.8	4.9
RSB45 270° up and 360°	66.7	1.8	5.2	79.2	1.9	5.3	91.7	2.0	5.2	110.0	1.8	4.9
RSB65 180° down	113.3	3.8	5.5	125.0	4.2	5.7	165.8	4.0	6.0	200.0	3.7	5.6
RSB65 270° up and 360°	183.3	3.8	5.5	221.7	4.2	5.7	253.3	4.0	6.0	313.3	3.7	5.6

HydroWhirl® Poseidon®

Rotary Nozzle - PTFE

DESIGN FEATURES

- Cleans more quickly, and uses less water and lower pressure than static tank washers
- PTFE construction:
 - Ideal for harsh chemical environments
 - Corrosion resistant
- Three connections: pipe, tube, or DIN clip-on. Threaded connections available upon request.
- Made from FDA-approved materials for use in Clean-In-Place (CIP) applications.

SPRAY CHARACTERISTICS

- Slow spinning, longer spray dwell time on the target surface increase impact over conventional rotating designs
 - Complete 360° omni-directional spray pattern
- Flow rates: 14.3 to 307 l/min

Minimum Tank Opening:
Small: 75mm, Large: 83mm



ROTARY SPRAY

Connection type	Nozzle number											
	HWP-10			HWP-23 HWP-28			HWP-32 HWP-37			HWP-48 HWP-55 HWP-65 HWP-73		
FNPT/BSP	1/4"	3/8"	1/2"	3/8"	1/2"	3/4"	1/2"	3/4"	1"	1"	1-1/4"	1-1/2"
Pipe Clip-On	X											
Dim F (mm)	13.7	17.3	21.3	17.3	21.3	26.7	21.3	26.7	33.5	33.5	42.2	48.3
Tube Clip-On	1/2"	3/4"	3/4"	1"	1"	1-1/4"	1-1/2"	1-1/2"	1-3/4"			
Dim F (mm)	12.7	19.1	19.1	25.4	25.4	31.8	38.1	38.1	44.5			
DIN Clip On (DIN 11866 Part A)	DN10	DN15	DN15	DN20	DN20	DN25	DN40					
Dim F (mm)	13	19	19	23	23	29	41					

Dimensions are approximate. Check with SNP for critical dimension applications.
Not recommended for applications over 4 bar.

HydroWhirl Poseidon Nozzle Flow Rates and Dimensions

Nozzle Number	Spray Angle	Litres Per Minute @ Bar						Dimensions				Mass (g)	Coverage Diameter (m) @ 2.8 Bar
		0.5	1	1.5	2	3	4	A	B	D	E		
HWP-10	360°	14.3	20.3	24.9	28.8	35.4	40.9	42.7	100.1	12.7	2.4	85.0	2.7
HWP-23		30.3	43.1	52.9	61.2	75.2	87.0	49.5	104.6	12.7	4.1	113	3.4
HWP-28		34.6	49.0	60.0	69.3	84.9	98.0						4.3
HWP-32		37.5	53.8	66.5	77.2	95.4	111	76.2	162.6	12.7	4.8	595	4.3
HWP-37		48.5	69.2	85.2	98.7	122	141						4.9
HWP-48		66.0	94.0	116	134	165	191	83.8	184.4	12.7	4.8	822	7.3
HWP-55		75.4	107	132	153	188	218						7.6
HWP-65		98.7	140	171	198	243	281						
HWP-73		108	153	187	216	265	307						

Standard Materials: Nozzle: PTFE; Retaining Clip: 316 stainless steel
*Flow-rates lower with threaded connection. Contact SNP for more information.

EK

Pop-up rotary nozzle

DESIGN FEATURES

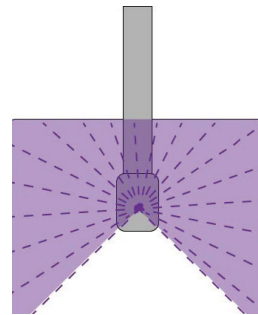
- The tank cleaner moves into position when fluid is turned on.
- When retracted the nozzle presents a smooth surface on the tank wall
- Surface finish of 0.8 microns Ra or better: ideal for sanitary applications
- Stainless steel construction - corrosion-resistant material
- Connections: threaded, clip-on, and welded
- Made from FDA approved materials

SPRAY CHARACTERISTICS

- Self-cleaning bearings
- Vigorous moving spray action
- 270° degree spray pattern
- Flow rates: 15.6 to 74.8 l/min

Minimum Tank Opening:
Small: 75mm, Large: 83mm

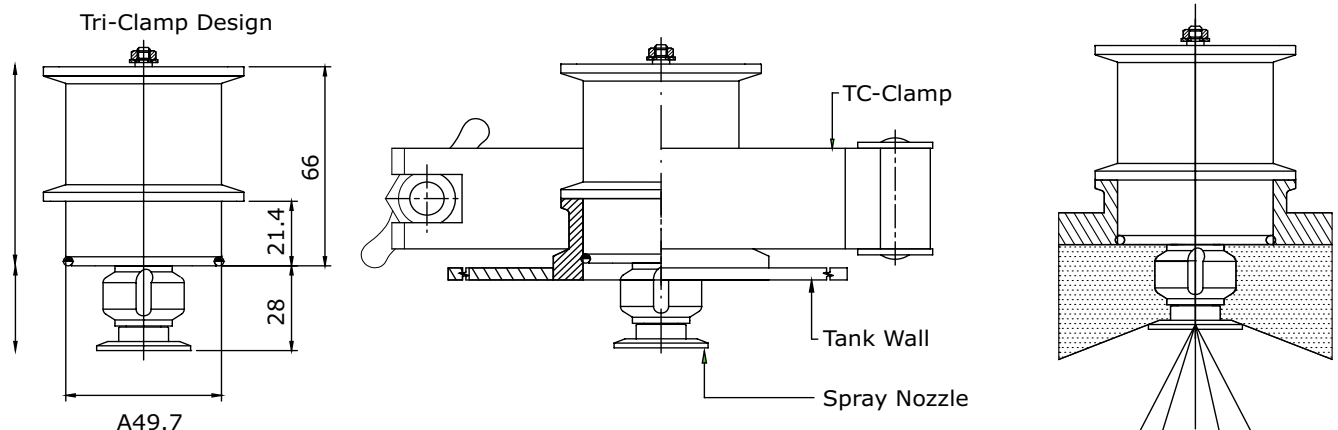
Spray Coverage
270°



How it works

The EK nozzle's spinning head moves out from the nozzle body when fluid is turned on. In the retracted position the nozzle presents a smooth surface flush with the tank wall.

The nozzle will deliver two rotating fan jets giving 270° coverage side to side (see diagram below). This makes the EK ideal for spot cleaning the difficult to reach parts of the tank. The EK is used in conjunction with a primary tank cleaner which will sit at the top of the tank above the product line. The EK will be positioned below the product line to hit spots the main cleaner cannot due to internal obstructions. The fact that the EK is submerged when the tank is in use is not a problem as the nozzle will be in the retracted position and thus protected.



ROTARY SPRAY

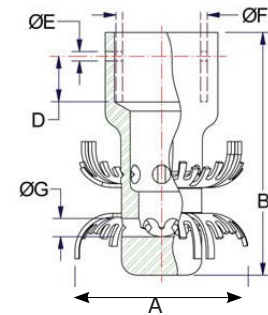
Model	Spray angle	Connection	Flow in litres at different pressures					Dimensions	
			Tri-clamp	1.5	2	3	5	7	H
EK2.180.M2	270	2" TC	15.6	18.0	22.1	28.5	33.7	66mm	28mm
EK2.220.M2	270	2" TC	19.1	22.0	26.9	34.8	41.2	66mm	28mm
EK2.300.M2	270	2" TC	26.0	30.0	36.7	47.4	56.1	66mm	28mm
EK2.400.M2	270	2" TC	34.6	40.0	49.0	63.3	74.8	66mm	28mm

HydroClaw

Tank Washing - Superior Clog Resistance

DESIGN FEATURES

- Clog-resistant design with no moving parts
- Allows passage of particles up to 7 mm diameter, three times the free passage of a comparable spray ball
- Made from FDA compliant 316L stainless steel for use in food-grade and sanitary Clean-In-Place (CIP) applications
- Low pressure/high flow operation.
- Self-draining and self-flushing
- Laser-welded for durability
- Fits through 63.5 or 76 mm diameter opening



Flow rates: 188 - 442 L/min

SPRAY CHARACTERISTICS

- Vigorous rinsing action quickly flushes solids and contamination from vessels
- Complete 360° omni-directional coverage
- Optimum cleaning performance at 2 bar
- Recommended installation 0.6 - 1.0 m vertically below top of tank

STATIC

Female Connections	Nozzle Number	Litres per minute at Pressure in Bar				Dimensions (mm)					Free pass	Wt (g)	Coverage Diameter @ 2Bar (m)	
		1.5	2	2.5	3	A	B	D	E	F				
3/4" NPT/BSP														
G3/4	HC-42	118	136	152	166	61	91	-	-	-	6.4	375	2.4	
1" Tube Weld-On												300		
1" Tube Clip-On										25.2		325		
DN20 Tube Clip-On	HC-42	125	144	161	176	61	91	19	4	23.1	6.4	350	2.4	
3/4" Pipe Clip-On										26.7		325		
1"NPT												649		
G1	HC100	279	322	360	394	73.2	102	-	-	-	7.62	635	3.05	
1 1/2" Tube Clip-On										38.1		527		
DN40 Tube Clip-On	HC100	312	361	403	442	73.1	102		4.1	40.0	7.62	437	3.05	
1" Pipe Clip-on										33.5		598		

Static Nozzle - Spiral Tank Wash Nozzle

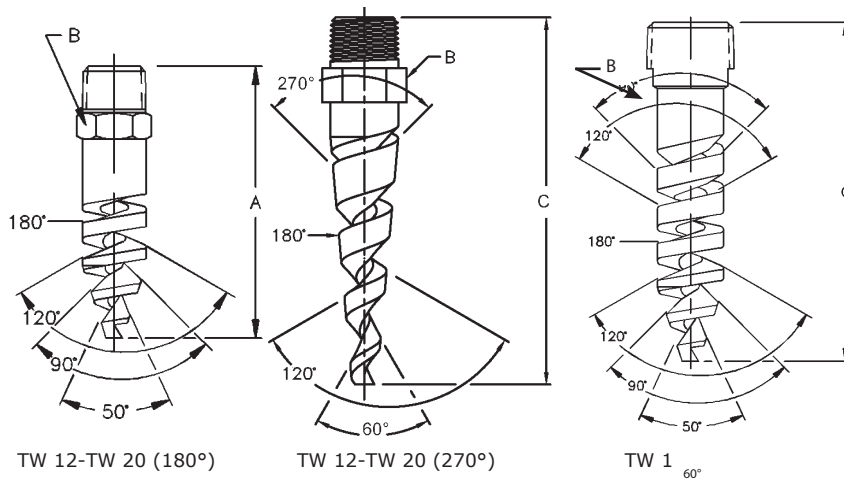
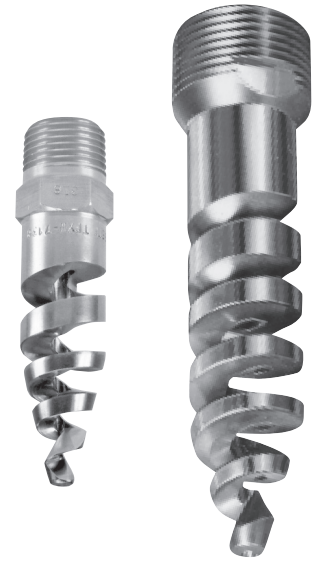
DESIGN FEATURES

- Clog-resistant spiral design
- Energy efficient
- Compact design; fits small openings

SPRAY CHARACTERISTICS

- Easy to maintain
- Unique patterns that spray in opposing directions

Flow rates: 11.4 to 260 l/min



Dimensions are approximate. Check with SNP for critical dimension applications.

Tank Washing TW Coverage Chart
When Spraying at 2-3 bar

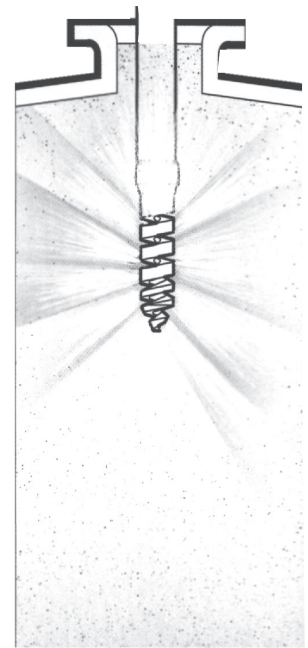
Pipe Size	Nozzle Number	Scrubbing Diameter (mm)	Rinsing Diameter (mm)
3/8	TW12	380	760
	TW14	460	1200
	TW16	610	1500
	TW20	910	2100
1/2	TW24	1200	2700
1	TW1	2400	6100

Tank Washing TW - Flow Rates and Dimensions

Spray Angles: 180° et 270° - Pipe sizes 3/8", 1/2" et 1" BSP or NPT

Male Pipe Size	Nozzle Number	Spray Angles	K Factor	Litres per l/min						Orifice Dia	Pass Dia	Dim Metal (mm)			Weight (g)
				0.7 Bar	1 Bar	2 Bar	3 Bar	4 Bar	5 Bar			A	B	C	
3/8	TW12	180°, 270°	13.7	11.4	13.7	19.3	23.7	27.3	30.6	4.83	3.30	73.0	17.5	92.1	49.6
	TW14	180°, 270°	18.5	15.4	18.5	26.1	32	36.9	41.3	5.59	3.30				
	TW16	180°, 270°	24.2	20.2	24.2	34.2	41.8	48.3	54.0	6.35	3.30				
	TW20	180°, 270°	37.6	31.5	37.6	53.2	65.1	75.2	84.1	7.87	3.30				
1/2	TW24	270°	54.9	46.0	54.9	77.7	95.1	110	123	10.4	4.32		22.2	108.0	181
1	TW1	270°	116	97.2	116	164	201	232	260	14.2	5.08		28.7	146.1	298

Spray angle performance varies with pressure. Contact SNP for specific data on critical applications.



STATIC

MSB XD

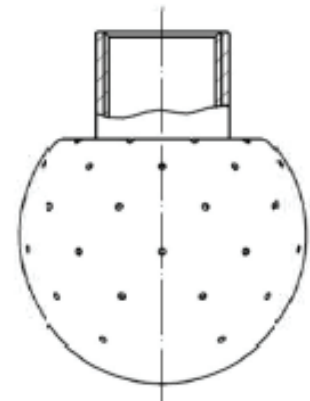
Static Nozzle - Mushroom Spray Ball

DESIGN FEATURES

- Multiple precision drilled holes give omni-directional spray pattern
- No moving parts ensure long life and low maintenance
- A variety of female threaded and clip on connection types.
- Available in 360° (other angles available, please ask for details)
- Made in 316L stainless steel

SPRAY CHARACTERISTICS

- Omni-directional coverage
- Low impact or rinse cleaning
- Flow rates: 40 to 440 l/min



STATIC

Model	Diameter (mm)	Connection size		
		Thread	Welding	Clip-on
XD-25	25	1/8"	1/2"	1/2"
XD-30	30	1/8"	1/2"	1/2"
XD-40	40	1/4"	3/4"	3/4"
XD-45	45	1/2"	3/4"	3/4"
XD-50	50	1/2" or 3/4"	1"	1"
XD-65	65	1"	1 1/4"	1 1/4"
XD-75	75	1 1/2"	1 1/2"	1 1/2"

BAR	25mm		30mm		40mm		45mm		50mm		65mm		75mm	
	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr	Flow rate l/min	Spray diam. Mtr
1	40	0.4	50	0.6	70	0.7	80	0.75	100	1	170	1.5	225	2
1.5	47	0.5	60	0.7	80	0.9	100	1	125	1.4	200	2.0	270	2.7
2	50	0.6	70	0.8	100	1.3	110	1.25	140	1.7	230	2.5	310	3.3
2.5	55	0.7	75	0.9	110	1.4	125	1.5	160	1.9	255	2.75	350	3.7
3	60	0.8	80	1.0	120	1.5	140	1.6	175	2.0	280	3	380	4
3.5	63	0.8	90	1.0	125	1.5	150	1.6	190	2.0	300	3	410	4
4	65	0.8	100	1.0	140	1.5	160	1.6	200	2.0	325	3	440	4

To calculate approximate flow at different pressures, take the flow at 1 bar and multiply by the square root of the required pressure.

TO ORDER: Please specify pipe size, connection type, nozzle number, spray angle and material.

Static Nozzle - Threaded Spray Ball

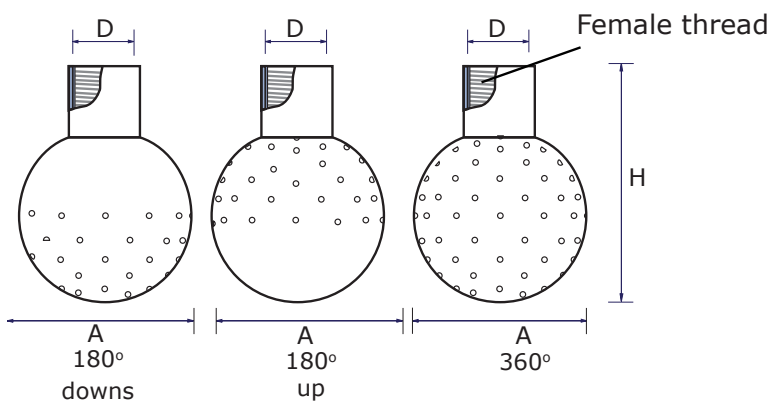
DESIGN FEATURES

- Multiple precision drilled holes give omnidirectional spray pattern.
- No moving parts ensure long life and low maintenance
- A variety of female threaded and clip on connection type.
- Available in 360°, 180° up & down, 270°* up and down

SPRAY CHARACTERISTICS

- Omni-directional coverage
- Low impact or rinse cleaning

Flow rates: 20 to 900 l/min



Spray balls are a versatile tank cleaning system that are very low maintenance. The selection in the table below is by no means exhaustive, by changing the position and pattern of the holes it is possible to design spray balls that meet the exact requirements of the tank cleaning application.

SVSTW Threaded Connections

Flow rates, dimensions and rinse radius

Model	Thread (D)	Pattern	Flow rate (l/min) at different pressures (Bar)						Rinse diameter at (1 bar)	Dimensions		
			1	1.5	2	2.5	3	3.5		A mm	H mm	Hole size mm
SVSTW293	1 1/4"	180 down	265.0	324.6	374.8	419.0	459.0	495.8	6.8m	90	150	2.5
SVSTW293	3/4"	180 down	153.3	187.8	216.8	242.4	265.6	286.9	5m	65	94	2.5
SVSTW293	1/2"	180 down	51.7	63.3	73.1	81.7	89.5	96.7	6.4m	50	91	1.6
SVSTW293	1/4"	180 down	23.3	28.6	33.0	36.9	40.4	43.7	4.4m	28	65	1.3
SVSTW294	1 1/4"	180 up	211.7	259.2	299.3	334.7	366.6	396.0	4.4m	90	150	2.5
SVSTW294	3/4"	180 up	145.0	177.6	205.1	229.3	251.1	271.3	4.4m	65	94	2.5
SVSTW294	1/2"	180 up	50.0	61.2	70.7	79.1	86.6	93.5	6m	50	91	1.6
SVSTW294	1/4"	180 up	20.0	24.5	28.3	31.6	34.6	37.4	3.2m	28	65	1.3
SVSTW295	1 1/4"	360	496.7	608.3	702.4	785.3	860.3	929.2	6.2m	90	150	2.5
SVSTW295	3/4"	360	220.0	269.4	311.1	347.9	381.1	411.6	2.6m	65	94	2.5
SVSTW295	1/2"	360	90.0	110.2	127.3	142.3	155.9	168.4	4.8m	50	91	1.6
SVSTW295	1/4"	360	30.0	36.7	42.4	47.4	52.0	56.1	2m	28	65	1.3

*Data available on request

Static Nozzle - Clip on Spray Ball

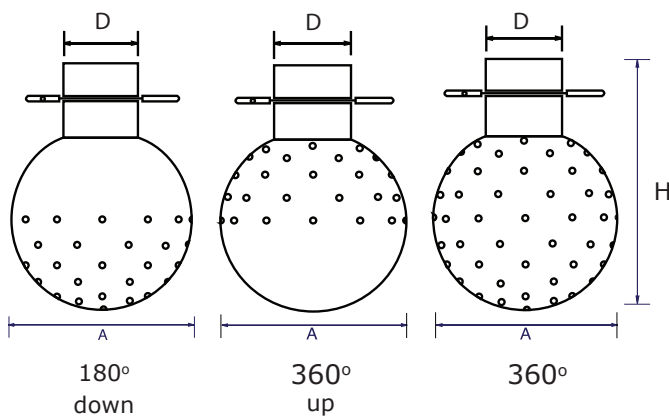
DESIGN FEATURES

- Multiple precision drilled holes give omni-directional spray pattern.
- No moving parts ensure long life and low maintenance
- A variety of female threaded and clip on connection type.
- Available in 360°, 180° up & down, 270°*up and down

SPRAY CHARACTERISTICS

- Omni-directional coverage
- Low impact or rinse cleaning

Flow rates: 20 to 900 l/min



As well as female threaded connections spray balls are also available with pipe or tube clip on connectors. The diameter D gives the outside diameter of the connecting tube with the inside diameter being 2mm lower.

SVSTW Clip Connection

Flow rates, dimensions and rinse radius

Model	Tube Size D	Pattern	Flow rate (l/min) at different pressures (Bar)						Rinse diameter at (1 bar)	Dimensions (mm)		
			1	1.5	2	2.5	3	3.5		A	H mm	Hole size mm
SVSTW290	60.3mm	180 down	148.3	181.7	209.8	234.5	256.9	277.5	3.4m	120	150	2
SVSTW290	38 mm	180 down	193.3	236.8	273.4	305.7	334.9	361.7	9.8m	65	94	2.5
SVSTW290	28mm	180 down	170.0	208.2	240.4	268.8	294.4	318.0	6.4m	65	91	2.5
SVSTW290	22mm	180 down	38.3	46.9	54.2	60.6	66.4	71.7	3.8m	40	65	1.6
SVSTW291	60.3mm	180 up	170.0	208.2	240.4	268.8	294.4	318.0	4.6m	120	150	2
SVSTW291	38mm	180 up	135.0	165.3	190.9	213.5	233.8	252.6	4.8m	65	94	2.5
SVSTW291	28mm	180 up	170.0	208.2	240.4	268.8	294.4	318.0	6m	65	91	2.5
SVSTW291	22mm	180 up	38.3	46.9	54.2	60.6	66.4	71.7	4m	40	65	1.6
SVSTW292	60.3mm	360	316.7	387.8	447.8	500.7	548.5	592.4	6m	120	150	2
SVSTW292	38mm	360	305.0	373.5	431.3	482.2	528.3	570.6	6m	65	94	2.5
SVSTW292	28mm	360	261.7	320.5	370.1	413.7	453.2	489.5	3.6m	65	91	2.5
SVSTW292	22mm	360	61.7	75.5	87.2	97.5	106.8	115.4	3.2m	40	65	1.6

*Data available on request

Further spray ball options are available, please contact SNP for further details

CLUMP

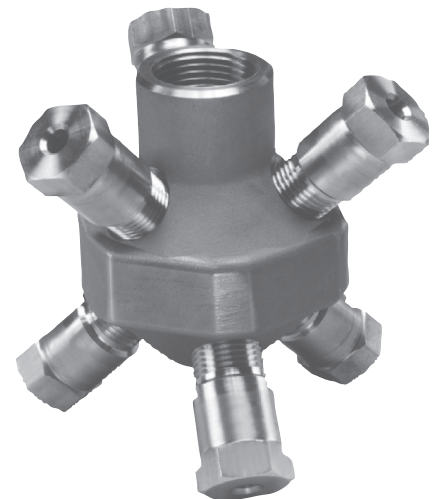
Tank Washing Nozzles

DESIGN FEATURES

- Each nozzle in the stationary cluster is a BETE clog-resistant full cone nozzle of the MaxiPass® series
- Can be supplied with various other BETE nozzles for any desired application
- Female connection

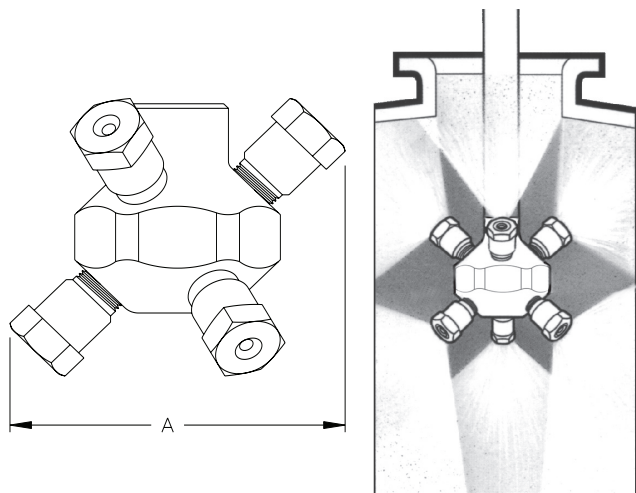
SPRAY CHARACTERISTICS

- Spherical omni-directional coverage
 - Six nozzles arranged in cluster to project spray in all directions
- Flow rates: 28.1 to 290 l/min
(Special flow rates available)



CLUMP- Coverage Chart When Spraying at 3 - 4 bar

Female Pipe Size	Nozzle Number	Scrubbing Diameter(mm)	Rinsing Diameter ((mm)
3/4"	CLUMP125	1200	2400
	CLUMP156	1200	3700
	CLUMP187	1800	4300
1"	CLUMP187	1800	4300
	CLUMP218	2400	4300
	CLUMP2500	3000	4900



Typical CLUMP installation

Dimensions are approximate. Check with BETE for critical dimension applications.

LEM Flow rates and dimensions Spherical 360° Spray Angle 3/4" and 1" BSP or NPT

Female Pipe Size	Female Pipe Size	K Factor	Flow Rate l/min						A (mm)	(kg) Metal	Weight (kg) Plas
			0.7 bar	1 bar	2 bar	3 bar	4 bar	5 bar			
3/4"	CLUMP125	33.2	28.1	33.2	46.0	55.6	63.7	70.8	120	1.29	0.22
	CLUMP156	52.7	44.6	52.7	73.2	88.2	101	112			
	CLUMP187	76.2	65.7	76.2	106	128	146	163			
1"	CLUMP187	76.2	65.7	76.2	106	128	146	163	146	2.34	0.4
	CLUMP218	121	103	121	168	203	232	258			
	CLUMP250	136	115	136	188	228	261	290			

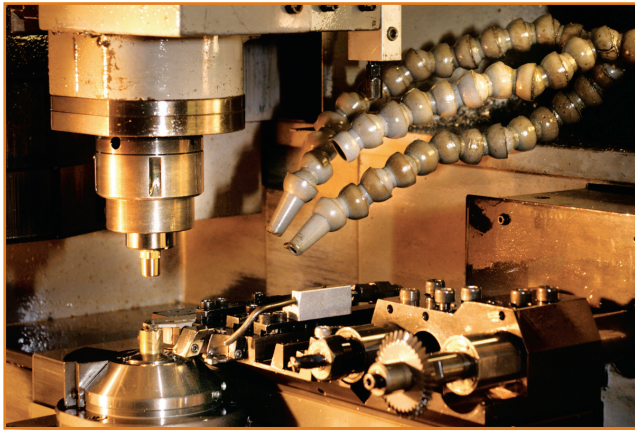
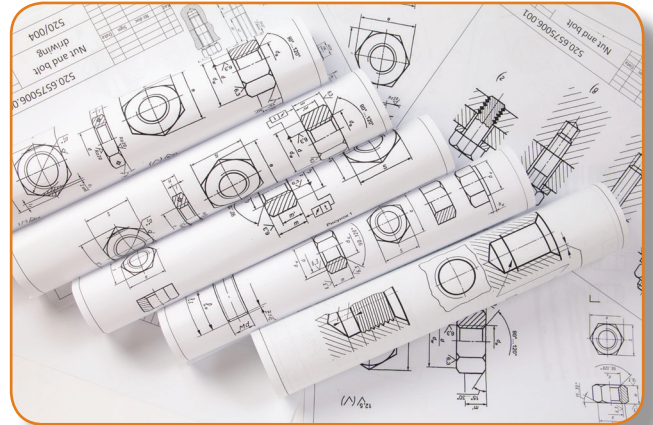
Flow rate (l/min) = $K(\text{bar})^{1/2}$

Standard Materials: Brass, inox 316, PVC and PTFE

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

Custom Products

Our standard range of products will accommodate the vast majority of tank cleaning scenarios. There are, however, niche cleaning situations which warrant the development of custom products. We have the technical expertise and engineering know how to quickly develop unique products to solve unique cleaning problems.



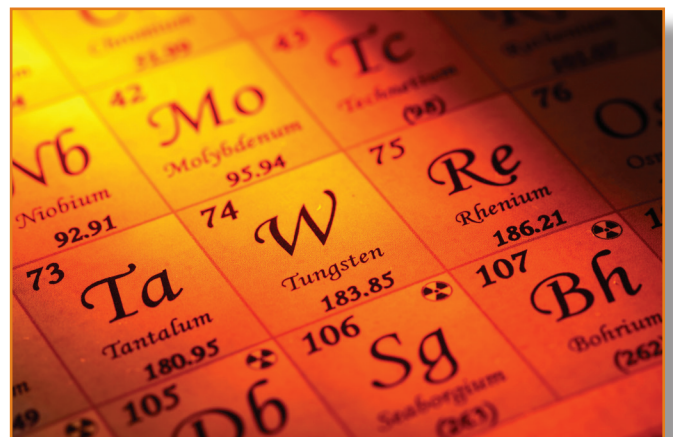
Engineering Excellence

We have a long history of working with a wide range of organisations from small specialists to the largest engineering houses in the world. Whatever the size or complexity of the project we have the expertise to cope.

We are ISO certified and are used to meeting the most stringent documentation requirements for projects. As such we are well positioned to design and supply almost any conceivable customer tank cleaning system.

Special materials

Some environments are particularly tough; either abrasive, very hot, or corrosive. The standard materials of construction in our off-the-shelf products may not be suitable for these extreme environments. We are able to manufacture many of our tank cleaners in special alloys or plastics to suit such scenarios. The Spray Nozzle People can supply product in over 200 different alloys and plastics meaning even the toughest environmental conditions can be overcome.

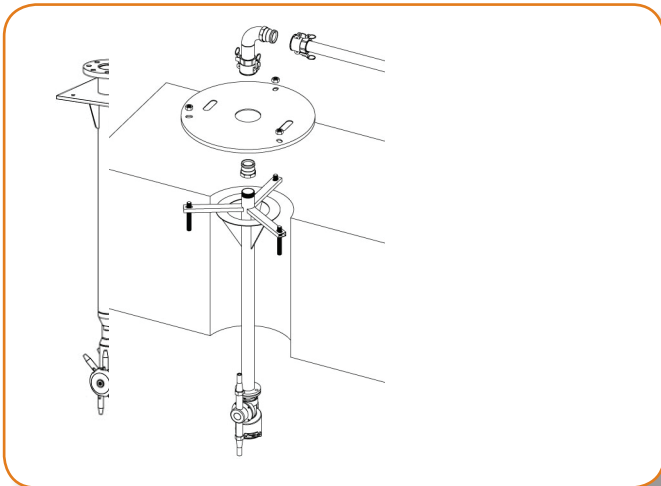


CUSTOM

Custom Products

Special Cleaning Heads

Some tank cleaning applications require atypical cleaning. SNP can engineer custom products to concentrate cleaning power where it is needed most. We have helped customers with particularly tough cleaning applications like washing ready-mix concrete trucks and sticky resin vessels. Sometimes the requirement calls for a modification on a standard product but in other cases we have developed completely new products.



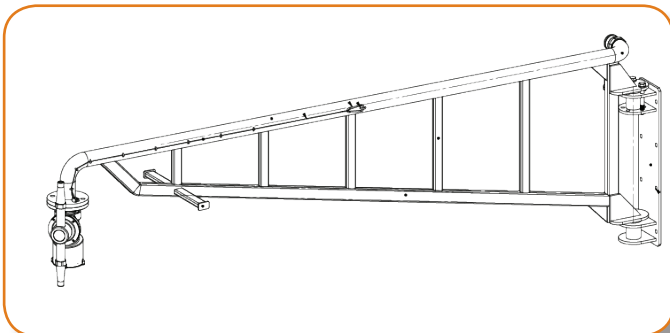
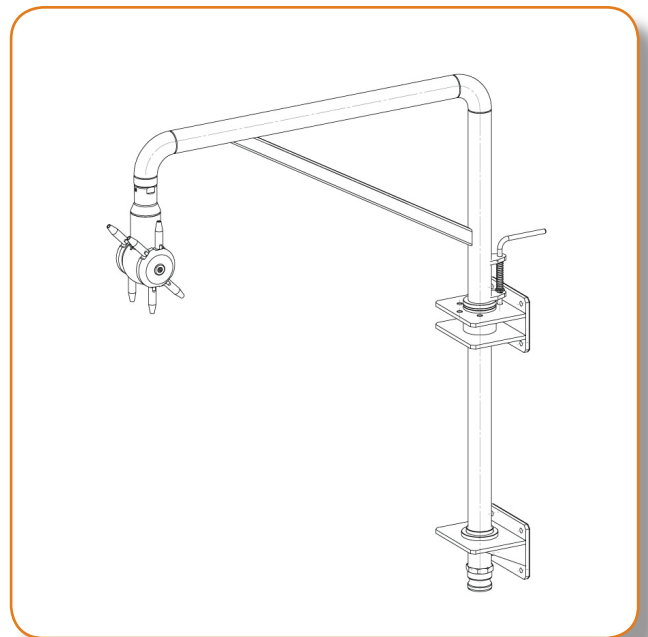
Lances & downpipes

The positioning of tank cleaners within the vessel can be of critical importance. The Spray Nozzle People have many years of expertise in the design and fabrication of lances and downpipes to hold all types of our cleaning heads.

CUSTOM

Swing arms

When attaching cleaning heads to open tanks we often deploy them on swing arms to allow the heads to be moved to the edge of the tank for maintenance .



About us



THE
SPRAY NOZZLE
PEOPLE

As the name would suggest, we are a specialist supplier of spray nozzles including tank cleaning heads. Our products are used in many different industries and by companies of all sizes. We are comfortable dealing with large projects for blue chip food, beverage, chemical and petrochemical giants as well as dealing with start-ups or single person operations.



Key Suppliers



We have distribution agreements with multiple high quality manufacturers of tank cleaning heads and nozzles.

Primarily, we have exclusive distribution rights for the Dasic range of rotary jet cleaners. These high impact cleaners are manufactured in the UK.

To compliment these jet cleaners we also have the Bete Fog Nozzle range of spinning and static spray balls including the patent pending HydroClaw which is the worlds first 360° clog resistant tank cleaner. Bete Fog Nozzle are based in Greenfield Massachusetts in the USA.

The Group

The Spray Nozzle People are part of the Spray People Group. This group consists of business units focusing on specialist products.



THE
SPRAY PEOPLE
GROUP



THE
SAFETY SHOWER
PEOPLE

Emergency Showers
and eye baths



THE
AIR NOZZLE
PEOPLE

Air nozzles, air knives,
vortex coolers and other
air related products



THE
FULFILMENT
PEOPLE

Specialist high care
warehousing and logistics



THE
PROFESSIONAL SPRAYERS
PEOPLE

Backpack and hand held
spraying equipment

Tank Wash Check List

Below is a checklist of factors to consider when selecting a new tank cleaning system.

Tank Factors

- 1- How large is the tank and is the reach of the tank cleaner sufficient?
- 2- What internal obstructions will cause "shadows" or areas that cannot be cleaned?
- 3- If the tank is glass lined what would happen if the tank cleaning head came loose?
- 4- Are the current tank entry holes wide enough to accept the new cleaning head?
- 5- Is the drainage from the tank sufficient to take away the wash fluid?

Fluid Supply Factors

- 1- What flow is required by the tank cleaning head?
- 2- Is the pipe work from the CIP system sufficient to avoid frictional pressure losses?
- 3- What are the expected frictional pressure losses?
- 4- Are there any gravitational pressure losses?

Key point - The cleaning head will work as designed if it "sees" the correct pressure and available flow. The pump needs to be specified to account for any pressure losses.

Residue Type Factors

- 1- Is the residue water soluble?
- 2- Is the residue thick with heavy soiling?
- 3- Does the residue require caustics to make it soluble?

Environment Factors

- 1- Does the tank cleaner need to sit underneath product line when the tank is in use?
- 2- Is the environment likely to present an explosion risk? Remember some solvent based cleaners will present an explosion risk when used?
- 3- Is the environment likely to be corrosive to the tank cleaning head?

Process Objectives

- 1- Do you want to save time?
- 2- Do you want to save water/caustic use?
- 3- Do you want to reduce the heat used?
- 4- Do you want to improve cleaning?
- 5- Which are the most important and are the costs of each factor quantifiable?



THE
SPRAY NOZZLE
PEOPLE

www.spray-nozzle.co.uk

EFFECTIVE & EFFICIENT TANK CLEANING SYSTEMS FOR ALL INDUSTRIES

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