

# PERFECT RINSING AND REMOVAL OF LIGHT SOILING



## Cleaning efficiency class 2

The typical task profile of the rotating nozzles in cleaning efficiency class 2 includes rinsing tasks and the removal of light soiling, particularly the kind that frequently occurs in the food and beverage industry as well as in the chemical and pharmaceutical industry.

The Lechler products in this class are free-spinning and made from particularly high-grade materials such as stainless steel, PVDF, PEEK and Teflon®. This ensures the use of a wide range of different cleaning agents.



	Max. tank diameter [m]	0	1	2	3	4	5	6	7	8	9
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**Operating principles**  
Free-spinning



**Flow rates at 2 bar**  
8 to 225 l/min



**Recommended operating pressures**  
2 to 3 bar



**Max. temperatures**  
50 to 200 °C

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# RELIABLE RINSING OF TANKS AND EQUIPMENT INSTALLATIONS



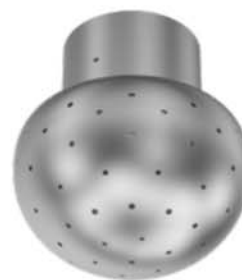
1  
Cleaning  
efficiency class

## Cleaning efficiency class 1

These static spray balls of cleaning efficiency class 1 are designed for hygienic rinsing with a flow rate of 15 to 670 l/min at 2 bar, as is frequently required in the food and beverage industry. In addition to liquid media, the static spray balls can also be operated with media such as steam and air and therefore

are especially suitable for SIP cleaning (Sterilization in Place).

Lechler products in this class are also designed for operation at higher temperatures and guarantee high process reliability.



	Max. tank diameter [m]	0	1	2	3	4	5	6	7	8	9
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**Operating principles**  
Static



**Flow rates at 2 bar**  
15 to 670 l/min



**Recommended operating pressures**  
1.5 to 3 bar



**Max. temperatures**  
to 200 °C

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# EFFICIENT REMOVAL OF LIGHT AND MEDIUM SOILING



## Cleaning efficiency class 3

Due to their special nozzle geometry and flow rates from 11 to 639 l/min at 2 bar, the rotating nozzles in efficiency class 3 are suitable for cleaning medium soiling from tanks and equipment. Such soiling is especially found in the food and beverage industry, but also in the chemical and pharmaceutical industry. The free-spinning rotating nozzles in class 3 are made from especially high-grade materials and are available in tank sizes from small to large.

The EHEDG-certified HygienicWhirly is perfectly suited for hygienically sensitive areas and can also be used for the output of foam.

The Whirly series is also available as an ATEX version and can therefore also be used in explosive environments.



	Max. tank diameter [m]	0	1	2	3	4	5	6	7	8
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**Operating principles**  
Free-spinning



**Flow rates at 2 bar**  
11 to 639 l/min



**Recommended operating pressures**  
2 to 3 bar



**Max. temperatures**  
90 to 140 °C

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# EFFECTIVE REMOVAL OF HEAVY SOILING



## Cleaning efficiency class 4

The Lechler products in this class have controlled rotating cleaning nozzles. They are suitable for contact with food and the cleaning of large tanks. The cleaning nozzles of cleaning efficiency class 4 are available in many different sizes and flow rates.

The efficient flat spray nozzle geometry of the rotating cleaners in cleaning efficiency class 4 ensures the removal of heavy soiling at temperatures of up to 140 °C. Process reliability is increased through combination with the Lechler rotation monitoring sensor.



	Max. tank diameter [m]	0	1	2	3	4	5	6	7	8	9
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**Operating principles**  
Controlled rotation



**Flow rates at 2 bar**  
25 to 300 l/min



**Recommended operating pressures**  
3 to 5 bar



**Max. temperatures**  
95 to 140 °C

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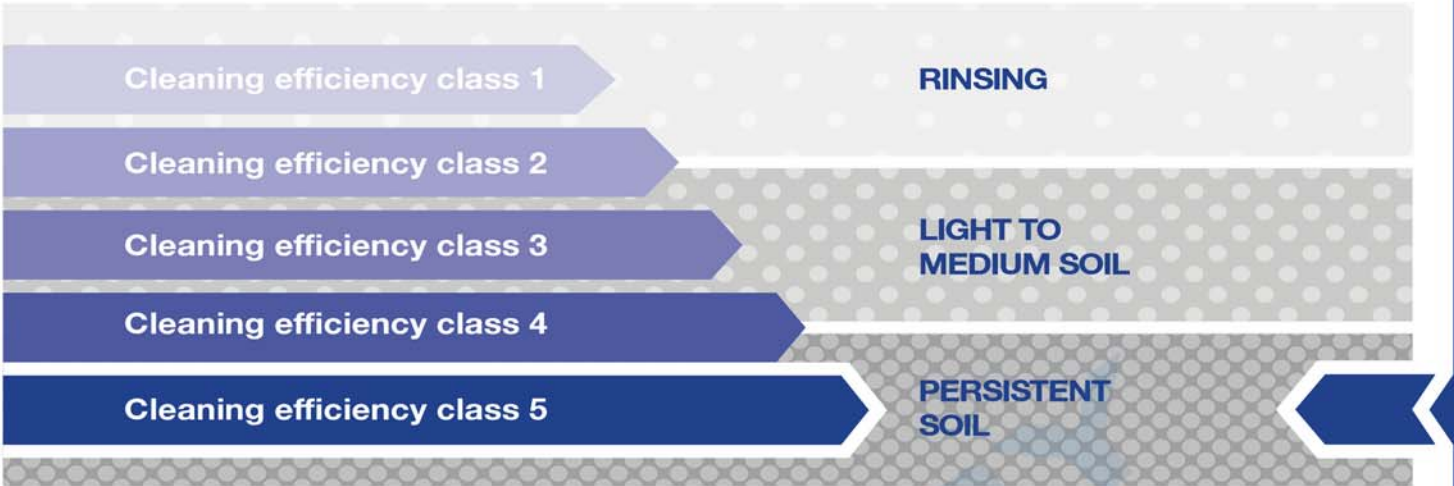


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# THE EFFECTIVE MEDIUM AGAINST THE MOST PERSISTENT SOILING



## Cleaning efficiency class 5

Persistent soiling requires special measures. That's why the Lechler high impact tank cleaning nozzles in efficiency class 5 are equipped with high-grade gear units and work with deliberately controlled rotation. They prove their capabilities in tasks in the food and beverage industry, the chemical and petrochemical industry and the paper industry.

Solid jet nozzles ensure maximum efficiency and maximum impact. Cleaning efficiency class 5 includes rotating cleaners that are suitable for medium to very large tanks. Process reliability is increased through combination with the Lechler rotation monitoring sensor.




	Max. tank diameter [m]	0	3	6	9	12	15	18	21	24	27
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**Operating principles**  
Gear-controlled

**Flow rates at 2 bar**  
25 to 260 l/min

**Recommended operating pressures**  
5 bar

**Max. temperatures**  
60 to 95 °C

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# Rotating cleaning nozzle »MiniWhirly« Series 500.186

## Series 500.186

The MiniWhirly made from POM is the economical entry-level model in the area of tank cleaning. The rotating nozzle has effective flat fan nozzles and was specifically designed for applications in barrel and canister cleaning.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8	9
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### Materials

POM,  
316 SS



### Max. temperature

50 °C



### Recommended operating pressure

2 bar



### Installation

Vertically facing downward



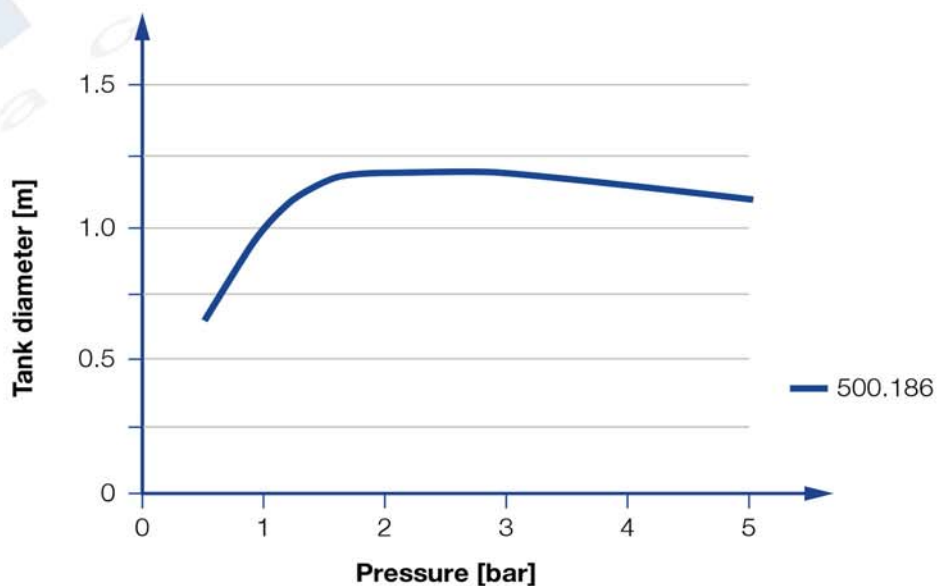
### Filtration

Line strainer with a mesh size of 0.3 mm/50 mesh



### Bearing

Ball bearing made of stainless steel



Overview of the tank diameter, depending upon the pressure of series 500.186

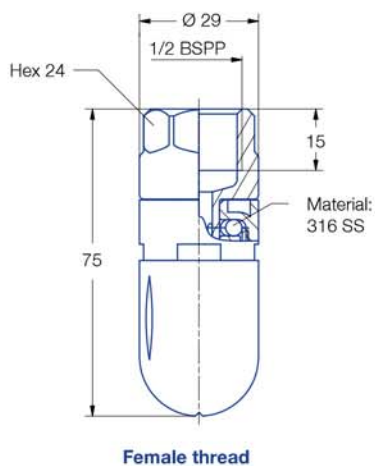
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Spray angle 	Ordering number Type	E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
			p [bar] (p <sub>max</sub> = 5 bar)				
			1	2	3	at 40 psi [US gal./ min]	
 300°	500.186.56.AH	1.9	13	18	22	6	1.3

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

#### Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.







# Rotating cleaning nozzle »PVDF MicroWhirly« Series 500.191

## Series 500.191

The PVDF MicroWhirly is made entirely from PVDF and designed to work in a corrosive environment. It is also suitable for contact with food and the application of foam, and can be used for cleaning equipment - all for a very good price-performance ratio.



**Max. tank diameter[m]**



**Material**  
PVDF



**Max. temperature**  
90 °C



**Recommended operating pressure**  
2 bar



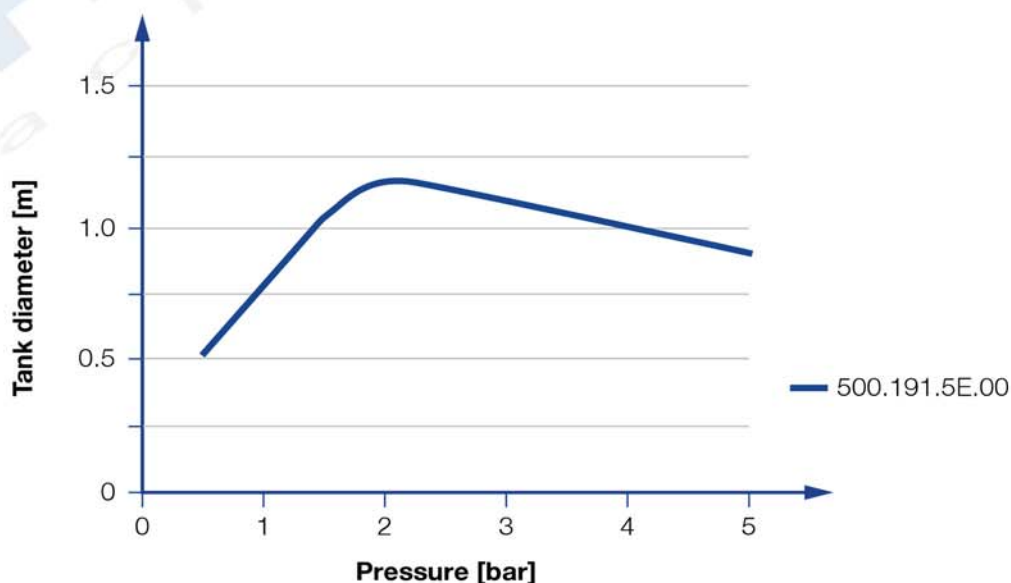
**Installation**  
Operation in every direction is possible



**Filtration**  
Line strainer with a mesh size of 0.3 mm/50 mesh



**Bearing**  
Slide bearing made of PVDF



Overview of the tank diameter, depending upon the pressure of series 500.191

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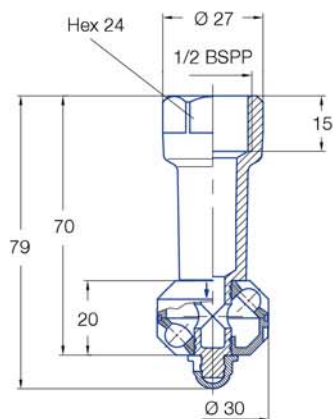
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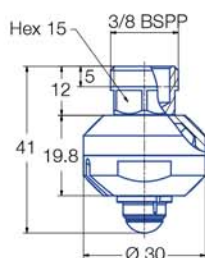


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Standard version  
Female thread



Compact version  
Male thread




## Standard version

Spray angle 	Ordering number Type	E Ø [mm]	Connection BSPP female	V̇ [l/min]				Max. tank diameter [m]
				p [bar] (p <sub>max</sub> = 5 bar)				
				1	2	3	at 40 psi [US gal./ min]	
180° 	500.191.5E.02	2.2	1/2"	9	13	16	4	0.8
180° 	500.191.5E.01	2.2	1/2"	9	13	16	4	0.8
270° 	500.191.5E.31	2.2	1/2"	14	20	25	6	1.1
360° 	500.191.5E.00	2.2	1/2"	14	20	25	6	1.1

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Compact version

Spray angle 	Ordering number Type	E Ø [mm]	Connection BSPP male	V̇ [l/min]				Max. tank diameter [m]
				p [bar] (p <sub>max</sub> = 5 bar)				
				1	2	3	at 40 psi [US gal./ min]	
180° 	500.191.5E.21	2.2	3/8"	9	13	16	4	0.8
360° 	500.191.5E.22	2.2	3/8"	14	20	25	6	1.1

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

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## Rotating cleaning nozzle »PicoWhirly« Series 500.234

### Series 500.234

The PicoWhirly works with rotating solid jets and is also suitable for cleaning at very high temperatures. This rotating cleaning nozzle with kolsterised slide bearing is made entirely from stainless steel and can also be used in very small spaces, thanks to its extremely compact construction.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8	9
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**Material**  
316L SS



**Max. temperature**  
200 °C



**Recommended operating pressure**  
3 bar



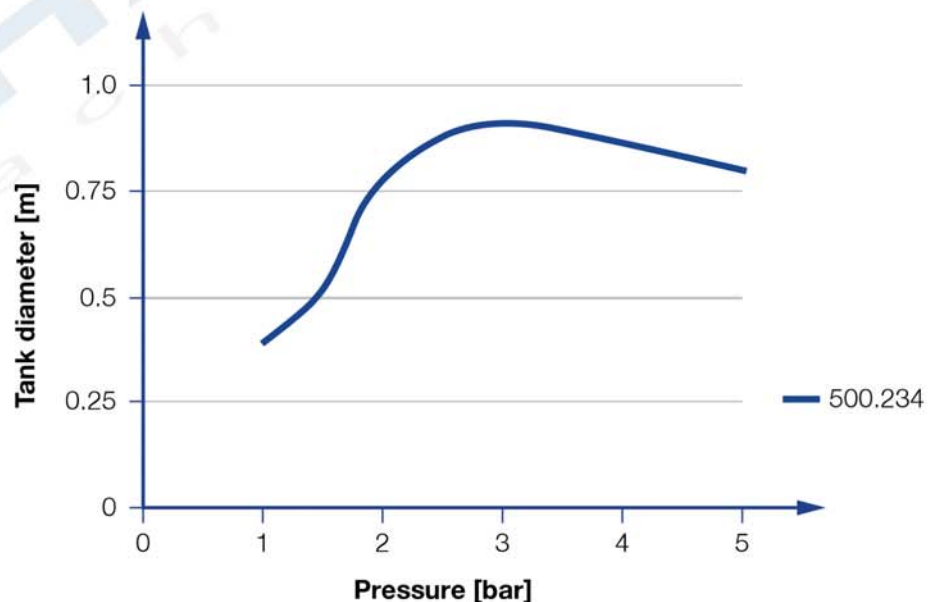
**Installation**  
Operation in every direction is possible



**Filtration**  
Line strainer with a mesh size of 0.3 mm/50 mesh



**Bearing**  
Kolsterised slide bearing



Overview of the tank diameter, depending upon the pressure of series 500.234

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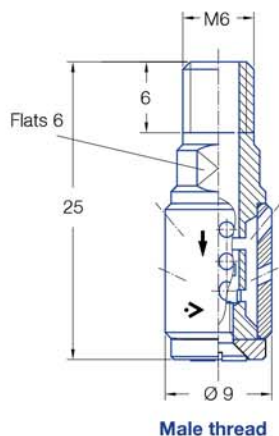
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Spray angle 	Ordering number Type	E Ø [mm]	V [l/min]				Max. tank diameter [m]
			p [bar] (p <sub>max</sub> = 5 bar)			at 40 psi [US gal./ min]	
			1	2	3		
300° 	500.234.G9.00	1.8	5.7	8.0	9.8	2.5	0.9

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

#### Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.







# Static spray balls Series 527

## Series 527

The 3A® certification also makes the products of series 527 suitable for areas with the highest of hygiene requirements. They clean with powerful solid jets, have a high surface quality and are also reliably resistant to high temperatures.



**Max. tank diameter [m]**



**Material**  
316L SS



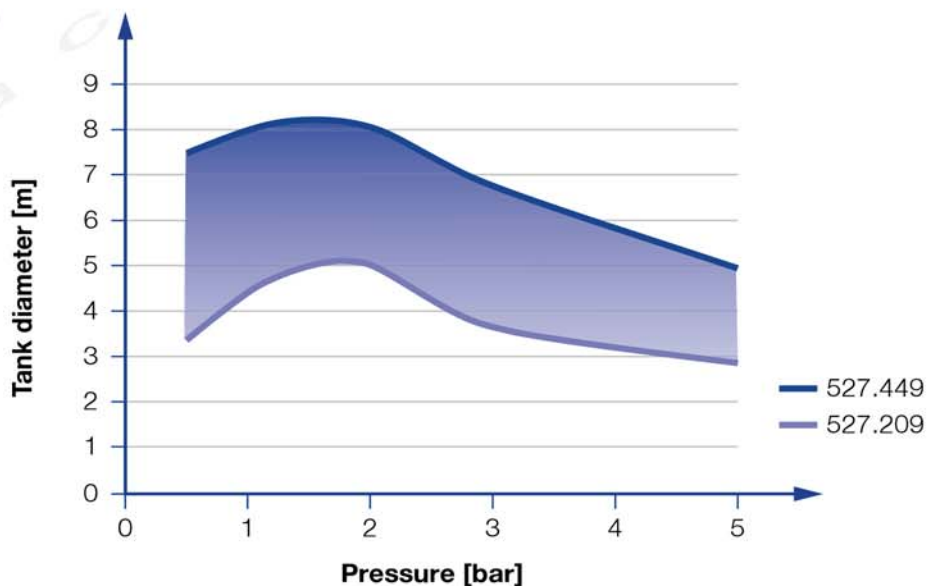
**Max. temperature**  
200 °C



**Recommended operating pressure**  
1.5 bar



**Installation**  
Operation in every direction is possible



Overview of the tank diameter, depending upon the pressure of series 527

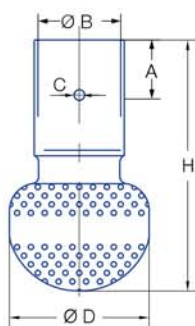
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Dimensions slip-on connection  
according to ASME-BPE (OD-tube)

<div>Spray angle</div> <div></div>	Ordering number Type	E Ø [mm]	V̇ [l/min]					Dimensions approx. [mm]					Max. tank diameter [m]	
			p [bar] (p <sub>max</sub> = 5 bar)					at 40 psi [US gal./ min]	Height H [mm]	Dia- meter D [mm]	B	C		A
			1	2	3	5								
	360°	527.209.1Y.00.75	0.8	42	60	73	95	19	68	32	19.0	3.3	12.7	5.2
		527.289.1Y.01.50	1.1	120	170	208	269	50	116	65	38.3	4.9	25.4	6.0
		527.449.1Y.02.00	1.7	297	420	514	664	127	152	102	51.0	4.9	25.4	8.2

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

### Information on operation

In most applications, static spray balls do not deliver the same cleaning power as rotating nozzles, anyway they do have advantages that make them indispensable for certain tasks:

- No moving parts
- Self-draining
- Easy to inspect
- Proven use in hygienically sensitive environments

Should a rotating nozzle stop turning for some reason, parts of the tank may remain uncleaned. This cannot happen with spray balls. However, gaps can occur in the spray pattern if individual openings are blocked with soil.

Compared to rotating nozzles, static spray balls usually need two to three times the amount of liquid.

### Slip-on information

- R-clip made of 316L SS is included.
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and static spray ball.





# Static spray balls Series 540/541

## Series 540/541

The robust series 540/541 have a threaded connection and an especially compact design. They can also be used at high temperatures as well as for the output of steam and air.



**Max. tank diameter [m]**



**Material**  
303 SS



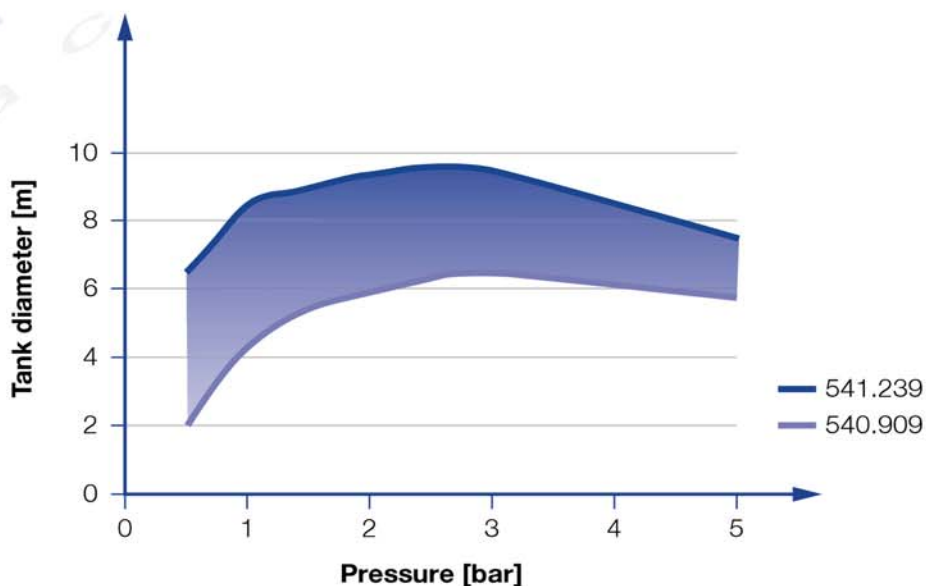
**Max. temperature**  
200 °C



**Recommended operating pressure**  
3 bar



**Installation**  
Operation in every direction is possible



Overview of the tank diameter, depending upon the pressure of series 540 / 541

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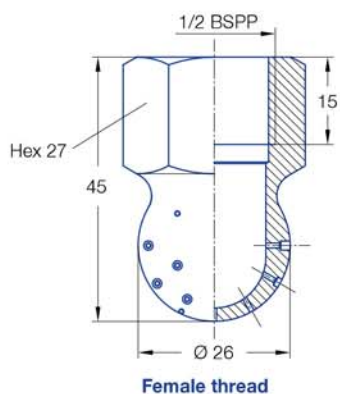
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<div>Spray angle</div> <div></div>	Ordering number Type	E Ø [mm]	$\dot{V}$ [l/min]					Max. tank diameter [m]
			$p$ [bar] ( $p_{\max} = 10$ bar)					
			0.5	1	2	3	at 40 psi [US gal./ min]	
<div>240°</div> <div></div>	<b>540.909.16</b>	0.8	9	13	18	22	6	6.5
	<b>540.989.16</b>	1.0	14	20	28	34	9	7.0
	<b>541.109.16</b>	1.5	29	40	57	70	18	7.5
	<b>541.189.16</b>	2.0	45	64	90	110	28	8.3
	<b>541.239.16</b>	2.3	59	83	118	145	37	9.5

E = narrowest free cross-section · NPT on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

### Information on operation

In most applications, static spray balls do not deliver the same cleaning power as rotating nozzles, anyway they do have advantages that make them indispensable for certain tasks:

- No moving parts
- Self-draining
- Easy to inspect
- Proven use in hygienically sensitive environments

Should a rotating nozzle stop turning for some reason, parts of the tank may remain uncleaned. This cannot happen with spray balls. However, gaps can occur in the spray pattern if individual openings are blocked with soil.

Compared to rotating nozzles, static spray balls usually need two to three times the amount of liquid.





# Rotating cleaning nozzle »MicroWhirly« Series 566

## Series 566

The MicroWhirly, with effective flat fan nozzles, is licensed for contact with food. Thanks to the robust slide bearing made from PEEK, the MicroWhirly has a particularly long service life. The MicroWhirly is alternatively available with an internal or external thread and in an ATEX version, which allows it to be adapted to a wide range of uses.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8	9
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### Materials

316L SS, PEEK,  
PEEK ESD (ATEX  
version only)



### Max. temperature

130 °C  
90 °C ATEX Version



### Recommended operating pressure

2 bar



### Installation

Operation in every  
direction is possible



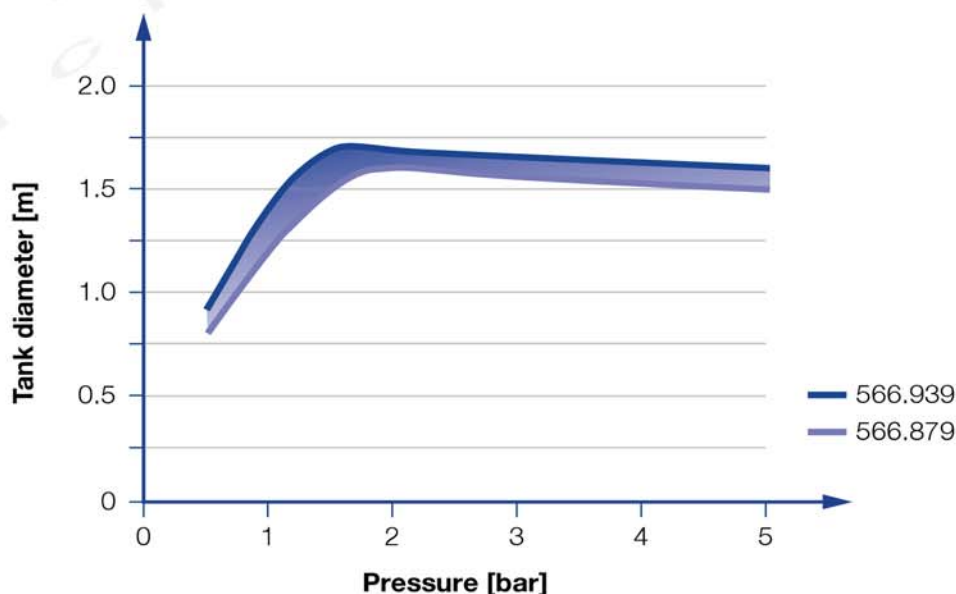
### Filtration

Line strainer with  
a mesh size of  
0.3 mm/50 mesh  
0.2 mm/80 mesh  
ATEX Version



### Bearing

Slide bearing made  
of PEEK



Overview of the tank diameter, depending upon the pressure of series 566

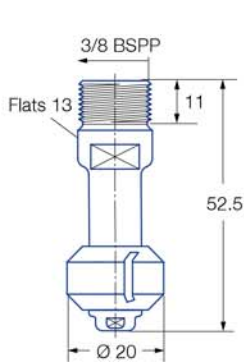


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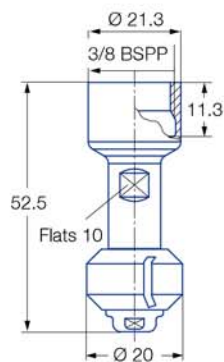
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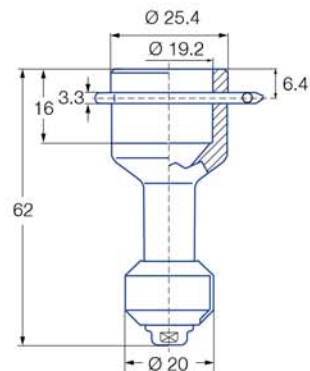
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Male thread



Female thread



Dimensions slip-on connection according to ASME-BPE (OD-tube)

Spray angle 	Ordering number				E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
	Type	Connection				p [bar] (p <sub>max</sub> = 6 bar)				
		3/8 BSPP* male	3/8 BSPP* female	3/4" Slip-on		1	2	3	at 40 psi [US gal./ min]	
 180°	566.873.1Y	AE	AF	TF	1	12	15	18	5	1.6
	566.933.1Y	AE	AF	TF	2.4	15	21	26	7	1.7
 180°	566.874.1Y	AE	AF	TF	1	12	15	18	5	1.6
	566.934.1Y	AE	AF	TF	2.4	15	21	26	7	1.7
 360°	566.879.1Y	AE	AF	TF	1	12	15	18	5	1.6
	566.939.1Y	AE	AF	TF	2.4	15	21	26	7	1.7

E = narrowest free cross-section · \*NPT and weld-on version on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip made of 316L SS is included (Ordering no.: 095.022.1Y.50.94.E).
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

**Example of ordering with ATEX approval.**  
**No FDA and (EC) 1935/2004 conformity.**

### Unit group / category / zones:

II 1 GD c IIB T4 T 120 °C +5 °C ≤ Ta ≤ +90 °C  
for zone 0, 1, 2 (gas atmosphere)  
for zone 20, 21, 22 (dust atmosphere)



Example Type + Connection = Ordering no.  
of ordering: 566.873.1Y.XX.EX + AE = 566.873.1Y.AE.EX

**Example of ordering with FDA**  
**and (EC) 1935/2004 conformity.**



**All Materials are suitable for contact with food.**



Example Type + Connection = Ordering no.  
of ordering: 566.873.1Y.XX + AE = 566.873.1Y.AE



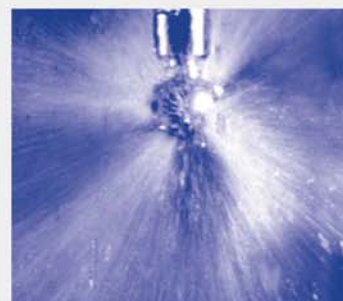




# Rotating cleaning nozzle »Whirly« Series 569

## Series 569

Popular and proven: the design of the Whirly. It generates effective flat jets, offers various connection options and is available in a very wide range of flow rates. It is also available in an ATEX-approved version and in a range of versions with different spray angles.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8
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**Materials**  
316L SS, PEEK,  
Rulon 641



**Max. temperature**  
140 °C  
90 °C ATEX version



**Recommended operating pressure**  
2 bar



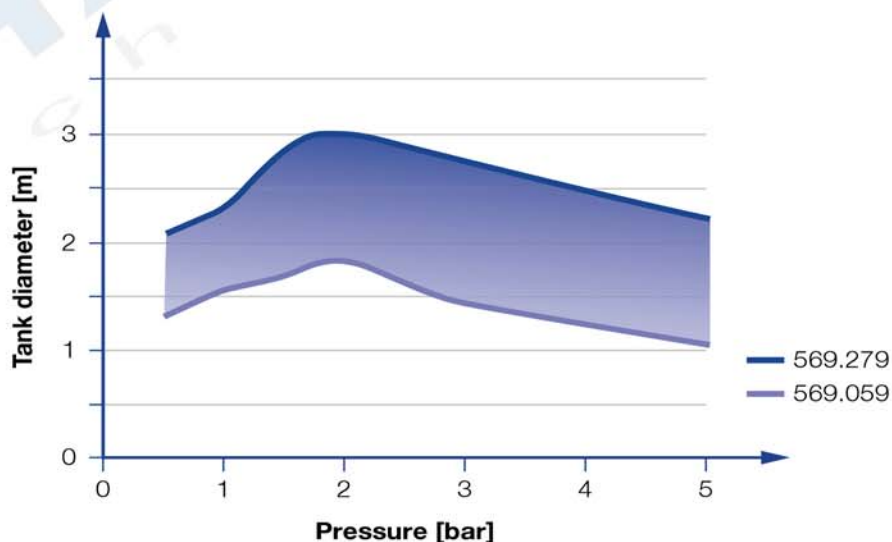
**Installation**  
Operation in every direction is possible; in horizontal installation position no rotating until 2 bar, ATEX version only vertical use



**Filtration**  
Line strainer with a mesh size of 0.1 mm/170 Mesh

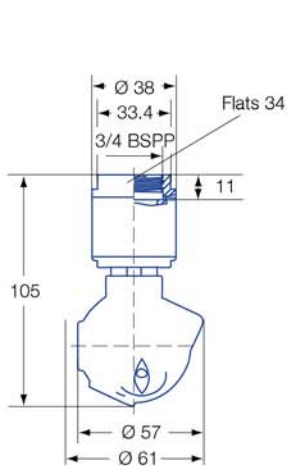


**Bearing**  
Double ball bearing made of stainless steel

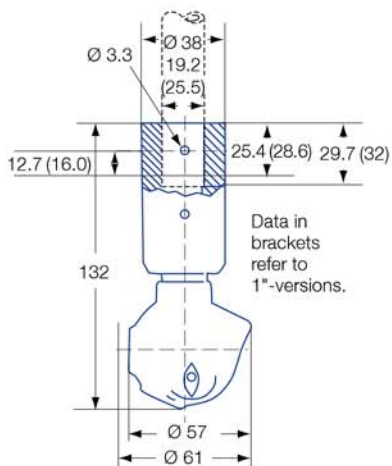


Overview of the tank diameter, depending upon the pressure of series 569

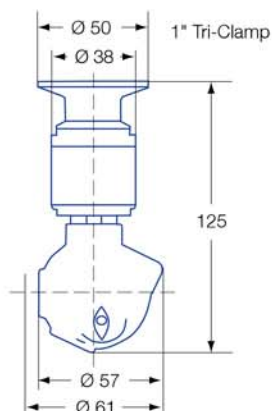




Female thread



Dimensions slip-on connection  
according to ASME-BPE (OD-tube)



Tri-Clamp

<div>Spray angle</div> <div></div>	Ordering no.					E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
	Type	Connection					p [bar] (p <sub>max</sub> = 6 bar)				
		3/4 BSPP female	3/4" Slip-on	1" Slip-on	1" Tri- Clamp		1	2	3	at 40 psi [US gal./ min]	
<div>270°</div> <div></div>	569.055.1Y	AL	TF07	TF10	10	3,6	36	48	62	15	1.8
	569.135.1Y	AL	TF07	TF10	10	4,8	52	71	87	22	2.1
	569.195.1Y	AL	TF07	TF10	10	5,6	69	97	119	30	2.6
<div>270°</div> <div></div>	569.056.1Y	AL	TF07	TF10	10	3,6	36	48	62	15	1.8
	569.106.1Y	AL	TF07	TF10	10	4,8	41	58	71	18	2.1
	569.196.1Y	AL	TF07	TF10	10	5,6	69	97	119	30	2.6
<div>360°</div> <div></div>	569.059.1Y	AL	TF07	TF10	10	3,2	36	48	62	15	1.8
	569.139.1Y	AL	TF07	TF10	10	3,6	52	71	87	22	2.1
	569.199.1Y	AL	TF07	TF10	10	4,8	69	97	119	30	2.6
	569.279.1Y	AL	TF07	TF10	10	7,1	103	145	178	45	3.0

E = narrowest free cross-section · NPT on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip made of 316L SS is included (Ordering no.: 095.022.1Y.50.60.E).
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

**Example of ordering with ATEX-approval.  
FDA and (EC) 1935/2004 conform.  
Only 3/4 thread connection and 3/4" Slip-on  
connection available with ATEX-approval.**



### Unit group / category / zones:

II 1 GD c IIB T4 T 120 °C +5 °C ≤ Ta ≤ +90 °C  
for zone 0, 1, 2 (gas atmosphere)  
for zone 20, 21, 22 (dust atmosphere)



Example Type + Connection = Ordering no.  
of Ordering: 569.055.1Y.XX.EX + AL = 569.055.1Y.AL.EX

**Example of ordering with FDA  
and (EC) 1935/2004 conformity.**



**All Materials are suitable for  
contact with food.**

Example Type + Connection = Ordering no.  
of Ordering: 569.103.1Y.XX + AL = 569.103.1Y.AL

**Attention:** for the ATEX version of the 3/4" slip-on connection the code for the connection changes. Example of ordering slip-on connection: 569.055.1Y.TF.EX

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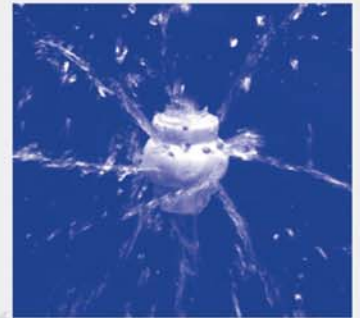




# Rotating cleaning nozzles »PTFE Whirly« Series 573/583

## Series 573 / 583

The Teflon® Whirly is of particular interest for applications in the chemical, pharmaceutical and food industries. It works with rotating solid jets and is suitable for use in corrosive environments. The slip-on connection has a 3A® certification and can be used in areas subject to particularly high hygiene requirements, such as contact with food.



Max. tank diameter [m]	0	1	2	3	4	5	6	7	8	9
------------------------	---	---	---	---	---	---	---	---	---	---



**Material**  
PTFE



**Max. temperature**  
95 °C (Versions for use with higher temperature (130 °C) on request)



**Recommended operating pressure**  
2 bar



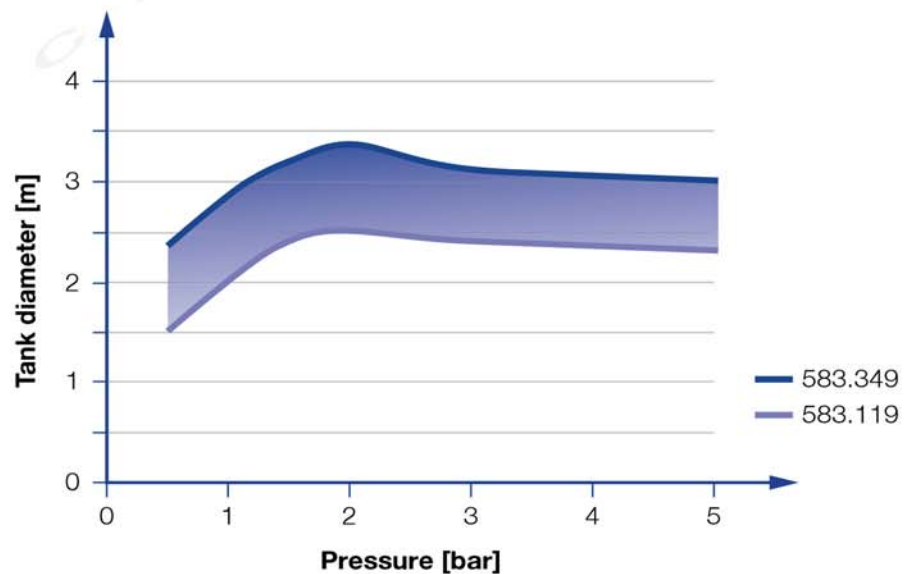
**Installation**  
Operation in every direction is possible



**Filtration**  
Line strainer with a mesh size of 0.3 mm/50 Mesh



**Bearing**  
Slide bearing made of PTFE



Overview of the tank diameter, depending upon the pressure of series 573 / 583

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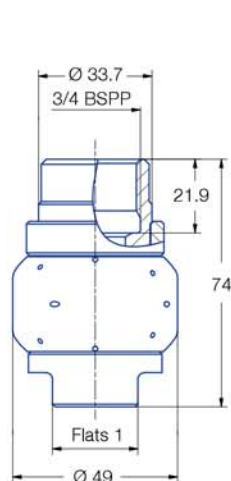
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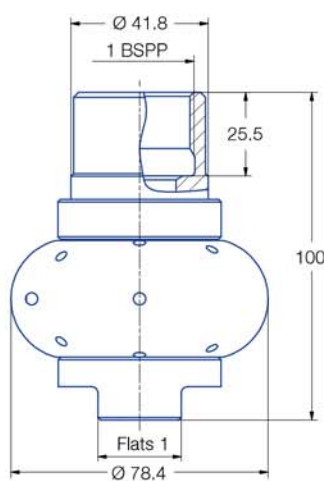


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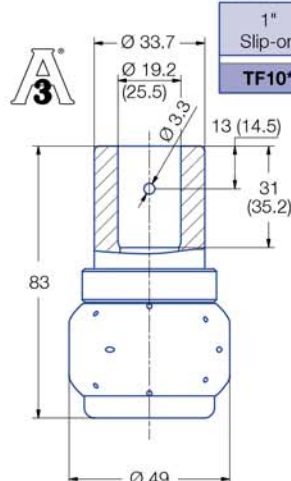




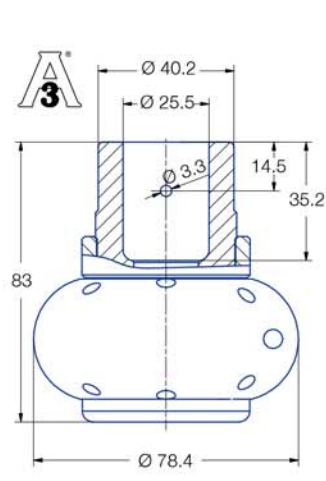
Female thread



Female thread








3/4" and 1" Slip-on connection (3A-approved)  
Dimensions according to ASME-BPE  
(OD-tube)



1" Slip-on connection (3A-approved)  
Dimensions according to ASME-BPE  
(OD-tube)

Data in brackets  
refer to 1"-version  
marked with \*

1"  
Slip-on  
TF10\*

Spray angle 	R-clip	Ordering no.					E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
		Type	Connection					p [bar] (p <sub>max</sub> = 6 bar)				
			3/4 BSPP	1 BSPP	3/4" Slip-on	1" Slip-on		1	2	3	at 40 psi [US gal./ min]	
	1)	583.114.55	AL	-	TF07	TF10*	2.1	47	67	82	21	2.5
	1)	583.264.55	AL	-	TF07	TF10*	3.3	103	145	178	45	2.8
	2)	583.344.55	-	AN	-	TF10	7.1	159	225	276	70	3.2
	1)	573.114.55	AL	-	TF07	TF10*	2.1	47	67	82	21	2.5
	1)	573.264.55	AL	-	TF07	TF10*	3.3	103	145	178	45	2.8
	2)	573.344.55	-	AN	-	TF10	7.1	159	225	276	70	3.2
	1)	583.116.55	AL	-	TF07	TF10*	2.4	47	67	82	21	2.5
	1)	583.266.55	AL	-	TF07	TF10*	3.4	103	145	178	45	2.8
	2)	583.346.55	-	AN	-	TF10	5.9	159	225	276	70	3.2
	1)	573.116.55	AL	-	TF07	TF10*	2.4	47	67	82	21	2.5
	1)	573.266.55	AL	-	TF07	TF10*	3.4	103	145	178	45	2.8
	2)	573.346.55	-	AN	-	TF10	5.9	159	225	276	70	3.2
	1)	583.119.55	AL	-	TF07	TF10*	1.8	41	58	71	18	2.4
	1)	583.209.55	AL	-	TF07	TF10*	3.5	71	100	122	31	2.5
	1)	583.269.55	AL	-	TF07	TF10*	4.8	103	145	178	45	2.8
	2)	583.279.55	-	AN	-	TF10	3.7	106	150	184	47	3.0
	2)	583.349.55	-	AN	-	TF10	5.6	159	225	276	70	3.2

E = narrowest free cross-section · NPT on request

\* see drawing 3 for details

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip made of 316L SS is included (Ordering no.: R-clip 1: 095.022.1Y.50.88.E, R-clip 2: 095.022.1Y.50.60.E).
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

Example    Type    +    Connection    =    Ordering no.  
of ordering: 583.114.55.    +    AL    =    583.114.55.AL

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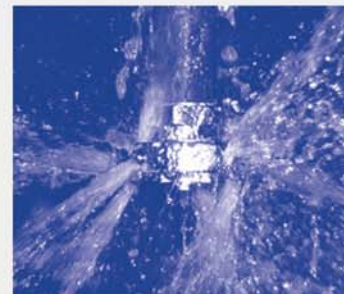




# Rotating cleaning nozzles »Gyro« Series 577

## Series 577

The Gyro cleans with powerful nozzle inserts and is available in many flow rates and spray angles. It is also suitable for very large tanks and is insensitive to clogging.



**Max. tank diameter [m]**



**Materials**  
316L SS, PTFE



**Max. temperature**  
90 °C



**Recommended operating pressure**  
3 bar



**Installation**  
Vertically facing downward



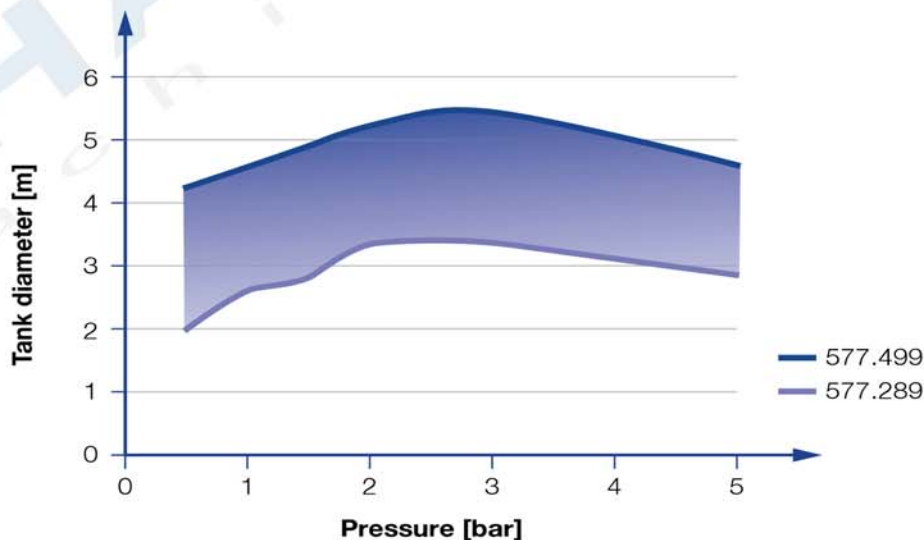
**Filtration**  
Line strainer with a mesh size of 0.3 mm/50 mesh



**Bearing**  
Slide bearing made of PTFE



**Accessories**  
Spare parts set consisting of:  
top seal, bottom seal, bolt, nut, sleeve, instructions for use



Overview of the tank diameter, depending upon the pressure of series 577

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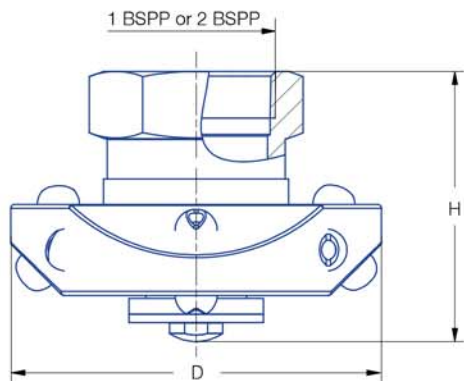
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Female thread

Spray angle 	Ordering no.			$\dot{V}$ [l/min]					Dimensions	
	Type	Connection		$p$ [bar] ( $p_{\max} = 5$ bar)					Height H [mm]	Diameter D [mm]
		1 BSPP	2 BSPP	1	2	3	5	at 40 psi [US gal./min]		
180° 	577.283.1Y	AN	-	115	163	200	258	50	72	118
	577.363.1Y	AN	-	182	258	316	408	80	72	118
	577.403.1Y	-	AW	228	322	394	509	100	103	156
	577.433.1Y	-	AW	273	386	473	610	120	103	156
	577.523.1Y	-	AW	452	639	783	1,010	170	103	156
180° 	577.284.1Y	AN	-	115	163	200	258	50	72	118
	577.364.1Y	AN	-	182	258	316	408	80	72	118
	577.404.1Y	-	AW	228	322	394	509	100	103	156
	577.434.1Y	-	AW	273	386	473	610	120	103	156
	577.494.1Y	-	AW	380	538	659	851	170	103	156
270° 	577.285.1Y	AN	-	115	163	200	258	50	72	118
	577.365.1Y	AN	-	182	258	316	408	80	72	118
	577.405.1Y	-	AW	228	322	394	509	100	103	156
	577.435.1Y	-	AW	273	386	473	610	120	103	156
	577.495.1Y	-	AW	380	538	659	851	170	103	156
360° 	577.289.1Y	AN	-	115	163	200	258	50	72	118
	577.369.1Y	AN	-	182	258	316	408	80	72	118
	577.409.1Y	-	AW	228	322	394	509	100	103	156
	577.439.1Y	-	AW	273	386	473	610	120	103	156
	577.499.1Y	-	AW	380	538	659	851	170	103	156

NPT on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

### Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

Example      Type      +      Connection      =      Ordering no.  
for Ordering: 577.283.1Y.      +      AN      =      577.283.1Y.AN







# Rotating cleaning nozzles »HygienicWhirly« Series 594/595

## Series 594 / 595

The HygienicWhirly with its highly effective flat jets is particularly suited for high hygiene requirements and for the application of foam. It is available in an EHEDG-version and can be used to clean tanks and equipment. Operation at low pressure with good cleaning effect is also possible.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8
--	-------------------------------	---	---	---	---	---	---	---	---	---



**Materials**  
316L SS, PEEK,  
EHEDG-version:  
O-ring made  
of EPDM



**Max. temperature**  
100 °C,  
short-term  
up to 140 °C



**Recommended  
operating pressure**  
3 bar



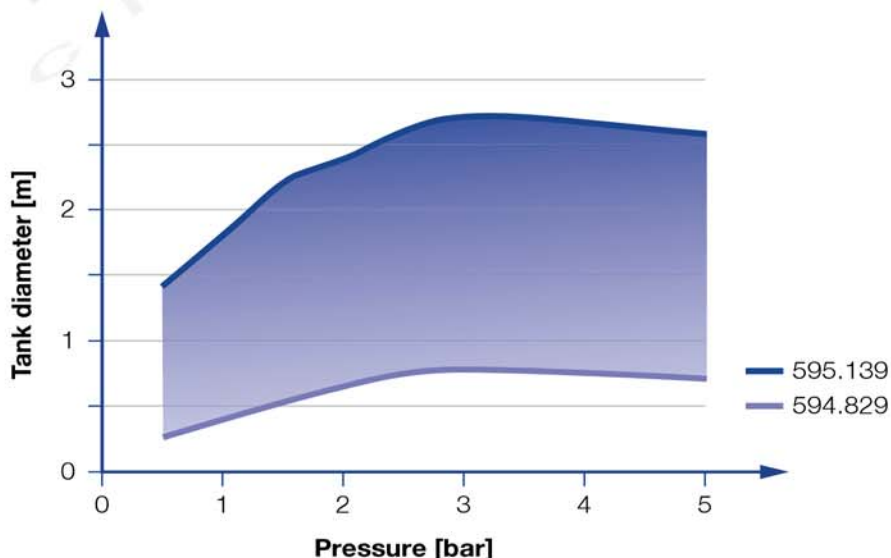
**Installation**  
Operation in every  
direction is possible



**Filtration**  
Line strainer with  
a mesh size of  
0.3 mm/50 Mesh



**Bearing**  
Slide bearing  
made of PEEK



Overview of the tank diameter, depending upon the pressure of series 594 / 595

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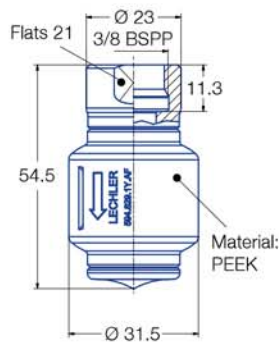
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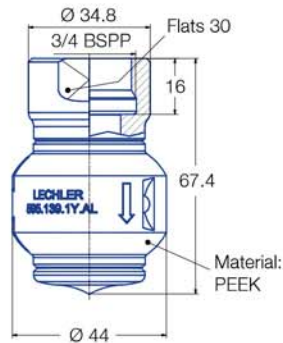
[www.xierui-sh.com](http://www.xierui-sh.com)



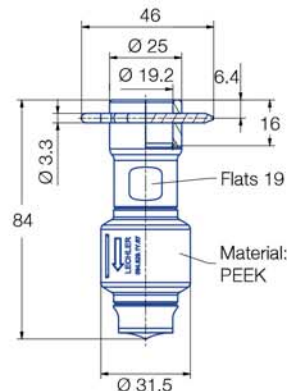
扫一扫，进入手机旺铺



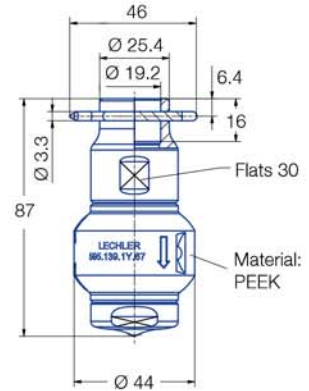
**Standard version**  
Female tread  
59X.XX9.1Y.AF





**Standard version**  
Female tread  
595.139.1Y.AL



**EHEDG-version**  
Dimensions slip-on connection  
according to ASME-BPE (OD-tube)  
59X.XX9.1Y.67



**EHEDG-version**  
Dimensions slip-on connection  
according to ASME-BPE (OD-tube)  
595.139.1Y.67

Spray angle 	Ordering no.				E Ø [mm]	V̇ [l/min]					Max. tank diameter [m]
	Type	Connection				p [bar] (p <sub>max</sub> = 5 bar)					
		3/8 BSPP female	3/4 BSPP female	3/4" Slip-on EHEDG version		0.5	1	2	3	at 40 psi [US gal./ min]	
360° 	594.829.1Y	AF	-	67	1.7	6	8	11	14	3	0.8
	594.879.1Y	AF	-	67	2.5	8	11	15	18	5	1.2
	595.009.1Y	AF	-	67	4.0	16	22	32	39	10	1.5
	595.049.1Y	AF	-	67	4.2	20	28	40	49	12	2.0
	595.139.1Y	-	AL	67	5.0	34	47	67	82	21	2.7

E = narrowest free cross-section · NPT on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip made of 316L SS is included (Ordering no.: 095.022.1Y.50.94.E).
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

Example	Type	+	Connection	=	Ordering no.
of ordering:	594.829.1Y	+	AF	=	594.829.1Y.AF

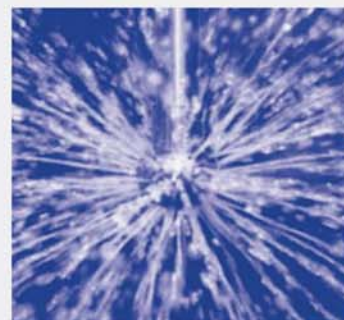
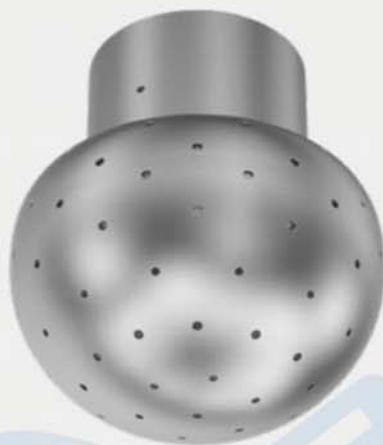




# Static spray balls »RinseClean« Series 5B2/5B3

## Series 5B2/5B3

The spray ball design has proven itself in many applications. It can be used in areas with high hygienic requirements and high temperatures. Our RinseClean spray ball is available with various slip-on connections, as well as in threaded or welded versions.



**Max. tank diameter [m]**



**Material**  
316L SS,  
R-clip: 316L SS



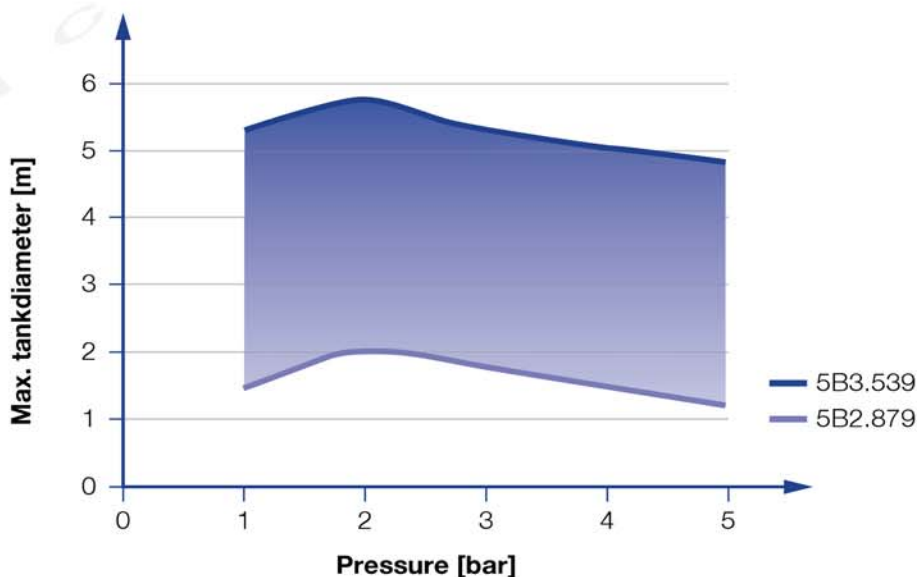
**Max. temperature**  
200 °C



**Recommended operating pressure**  
2 bar



**Installation**  
Operation in every direction is possible



Overview of the tank diameter, depending upon the pressure of series 5B2/5B3

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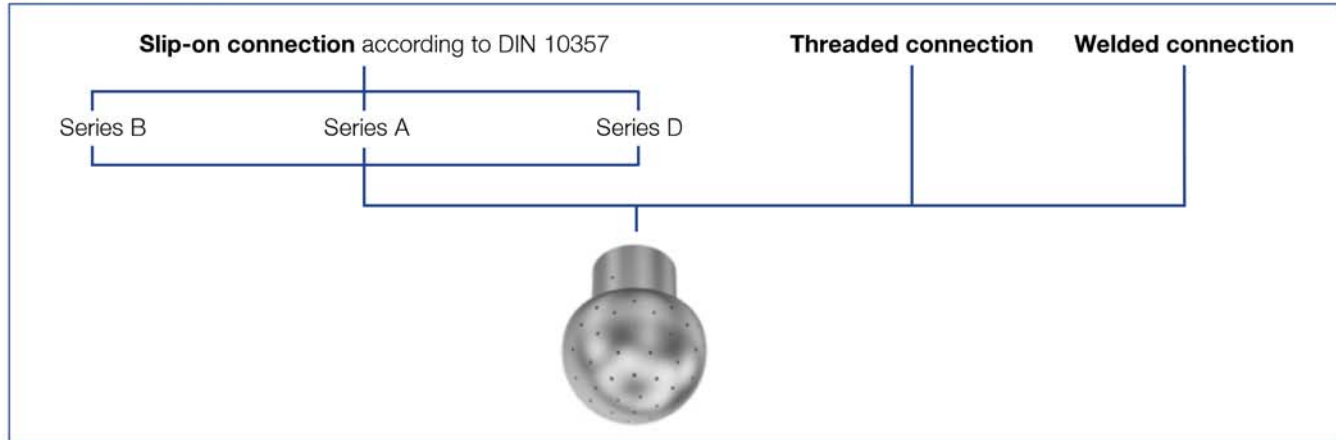
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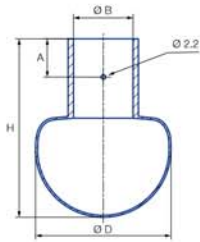
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## Connection options



### Slip-on connection



Dimensions slip-on connection according to DIN 10357

With the slip-on connection, the spray ball is pushed onto the customer's connection pipe and secured with the supplied R-clip. Lechler offers the right connection sizes for the three most common pipe standards.

R-clip	Ordering no.
1	095.013.17.06.02.0
2	095.013.17.06.03.0
3	095.013.17.06.04.0
4	095.013.17.06.05.0
5	095.013.17.06.06.0

### Slip-on connection according to DIN EN 10357 series B (replaces DIN 11850 series 1)

Spray angle 	Ordering no.	E Ø [mm]	V [l/min]					Dimensions [mm]					Max. tank diameter [m]
	Type		p [bar] (p <sub>max</sub> = 5 bar)					Ø D	Height H	Con- nection B	Distance to bore hole A	R-clip	
			0.5	1	2	3	at 40 psi [US gal./ min]						
360° 	5B2.879.1Y.D0.80.0	0.8	8	11	15	18	4.7	20	37	8.2	9	1	2.0
	5B3.089.1Y.D1.20.0	1.0	25	35	50	61	15.5	28	42	12.2	9	1	2.2
	5B3.139.1Y.D1.20.0	1.6	33	46	65	80	20.2	28	42	12.2	9	1	2.3
	5B3.209.1Y.D1.80.0	1.5	50	71	100	123	31.0	28	42	18.2	9	2	2.5
	5B3.309.1Y.D2.20.0	1.7	90	127	180	221	55.8	64	84	22.2	18	2	3.5
	5B3.379.1Y.D2.80.0	2.1	130	184	260	318	80.7	64	84	28.2	18	3	5.2
	5B3.389.1Y.D4.00.0	2.1	140	198	280	343	86.9	64	84	40.3	18	4	5.2
	5B3.409.1Y.D3.40.0	2.3	160	226	320	392	99.3	64	84	34.2	18	4	5.2
	5B3.449.1Y.D2.80.0	3.0	205	290	410	502	127.2	64	84	28.2	18	3	5.4
	5B3.489.1Y.D3.40.0	2.9	255	361	510	625	158.2	64	84	34.2	18	4	5.5
5B3.499.1Y.D4.00.0	2.8	270	382	540	661	167.5	64	84	40.3	18	4	5.5	
5B3.539.1Y.D5.20.0	3.2	335	474	670	821	207.8	90	111	52.3	25	5	5.6	
180° 	5B3.083.1Y.D1.80.0	1.2	25	35	50	61	15.5	28	42	18.2	9	2	2.2
	5B3.253.1Y.D2.20.0	1.8	65	92	130	159	40.3	64	84	22.2	18	2	3.0
	5B3.323.1Y.D2.80.0	2.3	100	141	200	245	62.0	64	84	28.2	18	3	3.5
	5B3.463.1Y.D5.20.0	3.3	230	325	460	563	142.7	90	111	52.3	25	5	5.4
180° 	5B3.114.1Y.D1.80.0	1.4	30	42	60	74	18.6	28	42	18.2	9	2	2.2
	5B3.274.1Y.D2.20.0	2.3	75	106	150	184	46.5	64	84	22.2	18	2	3.0
	5B3.394.1Y.D2.80.0	3.0	145	205	290	355	90.0	64	84	28.2	18	3	5.0
	5B3.444.1Y.D5.20.0	3.2	200	283	400	490	124.1	90	111	52.3	25	5	5.2

E = narrowest free cross-section

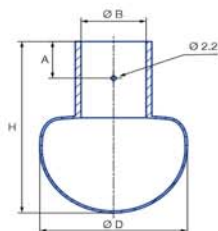
Continued on next page.







# Static spray balls »RinseClean« Series 5B2/5B3

## Slip-on connection



Dimensions slip-on connection  
according to DIN 10357



## Slip-on connection according to DIN EN 10357 series A (replaces DIN 11850 series 2)

<div>Spray angle</div> <div></div>	Ordering no.	E Ø [mm]	V̇ [l/min]					Dimensions [mm]					Max. tank diameter [m]
	Type		p [bar] (p <sub>max</sub> = 5 bar)					Ø D	Height H	Con- nection B	Distance to bore hole A	R-clip	
			0.5	1	2	3	at 40 psi [US gal./ min]						
<div>360°</div> <div></div>	5B3.149.1Y.D2.90.0	0.9	35	50	70	86	21.7	64	84	29.2	18	3	2.3
	5B3.299.1Y.D2.90.0	1.5	83	117	165	202	51.2	64	84	29.2	18	3	3.2
	5B3.359.1Y.D2.90.0	1.9	115	163	230	282	71.3	64	84	29.2	18	3	5.0
	5B3.399.1Y.D2.90.0	2.2	150	212	300	367	93.1	64	84	29.2	18	3	5.2
	5B3.429.1Y.D2.90.0	2.6	180	255	360	441	111.7	64	84	29.2	18	3	5.2
	5B3.539.1Y.D5.30.0	3.2	335	474	670	821	207.8	90	111	53.3	25	5	5.6

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Slip-on connection according to DIN EN 10357 series D (ASME BPE 1997, OD tube compatible)

Spray angle 	Ordering no.	E Ø [mm]	V [l/min]					Dimensions [mm]					Max. tank diameter [m]
	Type		p [bar] (p <sub>max</sub> = 5 bar)					Ø D	Height H	Con- nection B	Distance to bore hole A	R-clip	
			0.5	1	2	3	at 40 psi [US gal./ min]						
360° 	5B3.089.1Y.A1.00.0	1.0	25	35	50	61	15.5	28	42	9.8	9	1	2.2
	5B3.209.1Y.A1.90.0	1.5	50	71	100	123	31.0	28	42	19.3	9	2	2.5
	5B3.309.1Y.A1.90.0	1.7	90	127	180	221	55.8	64	84	19.3	18	2	3.5
	5B3.379.1Y.A2.60.0	2.1	130	184	260	318	80.7	64	84	25.6	18	3	5.2
	5B3.449.1Y.A3.80.0	3.0	205	290	410	502	127.2	64	84	38.3	18	4	5.4
	5B3.539.1Y.A5.10.0	3.2	335	474	670	821	207.8	90	111	51.1	25	5	5.6

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Slip-on information

- R-clip made of 316L SS is included.  
Ordering no.: See table on page 3
- Depending on diameter of adapter, the flow rate can increase due to leakage between connecting pipe and static spray ball.

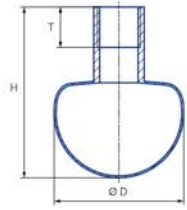
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## Threaded connection



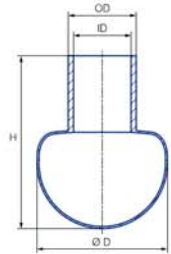
### Threaded connection

Spray angle 	Ordering no.	Con- nection BSPP	E Ø [mm]	V̇ [l/min]					Dimensions [mm]			Max. tank diameter [m]	
	Type			p [bar] (p <sub>max</sub> = 5 bar)					Ø D	Height H	Screw-in length T		
				0.5	1	2	3	at 40 psi [US gal./min]					
	360°	<b>5B2.879.1Y.AA.00.0</b>	1/8 A	0.8	8	11	15	18	4.7	20	37	8	2.0
		<b>5B3.309.1Y.AH.00.0</b>	1/2	1.9	90	127	180	221	55.8	64	84	14	3.5
		<b>5B3.379.1Y.AN.00.0</b>	1	2.1	130	184	260	318	80.7	64	84	18	5.2
		<b>5B3.539.1Y.AW.00.0</b>	2	3.1	335	474	670	821	207.8	90	111	24	5.6



E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Welded connection



### Welded connection according to ISO 2037

Spray angle	Ordering no.	E Ø [mm]	V̇ [l/min]					Dimensions [mm] OD = outside diameter ID = inside diameter			Max. tank diameter [m]
	Type		p [bar] (p <sub>max</sub> = 5 bar)					Ø D	Height H	Dimensions of the connection piece	
			0.5	1	2	3	at 40 psi [US gal./ min]				
	5B2.879.1Y.W1.20.0	0.8	8	11	15	18	4.7	20	37	OD 12 ID10	2.0
	5B3.089.1Y.W1.20.0	1.0	25	35	50	61	15.5	28	42	OD 12 ID10	2.2
	5B3.209.1Y.W1.70.0	1.5	50	71	100	123	31.0	28	42	OD 17.2 ID15.2	2.5
	5B3.309.1Y.W2.50.0	1.7	90	127	180	221	55.8	64	84	OD 25 ID 22.6	3.5
	5B3.379.1Y.W2.50.0	2.1	130	184	260	318	80.7	64	84	OD 25 ID 22.6	5.2
	5B3.449.1Y.W3.80.0	3.0	205	290	410	502	127.2	64	84	OD 38 ID 35.6	5.4

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.







# Rotating cleaning nozzle »MicroSpinner« Series 5MC

## Series 5MC

The innovative slot design gives the MicroSpinner its high degree of effectiveness. Due to the modern bearing construction, it is particularly reliable and durable. The MicroSpinner is made entirely from stainless steel and designed for use also at high temperatures. Apart from stainless steel, it is also available in Hastelloy and in many flow rates.



**Max. tank diameter [m]**



**Materials**  
316L SS, 440C SS  
Hastelloy C22,  
Hastelloy C276



**Max. temperature**  
140 °C



**Recommended operating pressure**  
2 bar



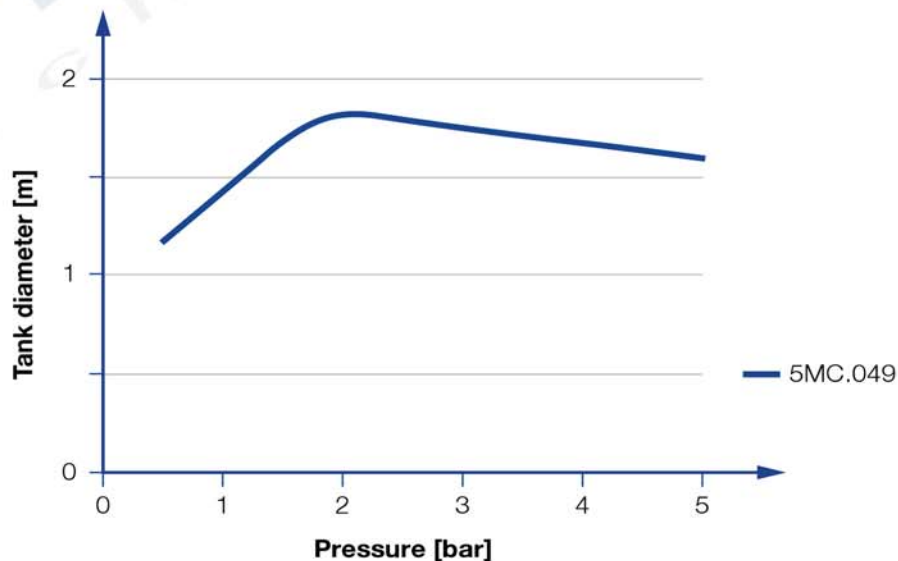
**Installation**  
Operation in every direction is possible



**Filtration**  
Line strainer with a mesh size of 0.1 mm/170 Mesh



**Bearing**  
Double ball bearing made of 440C SS  
Double ball bearing made of C276



Overview of the tank diameter, depending upon the pressure of series 5MC

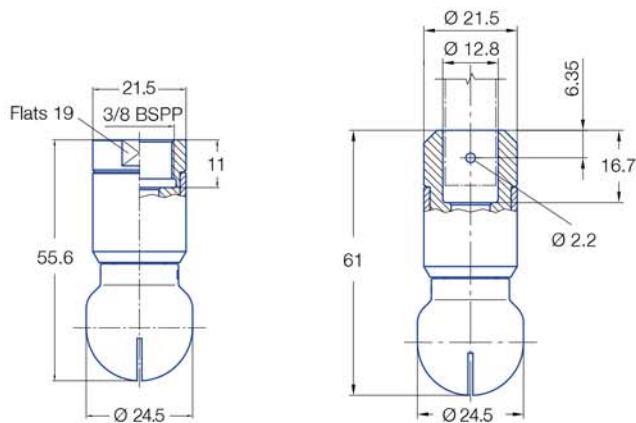
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Female thread

Dimensions slip-on connection according to ASME-BPE (OD-tube)

Spray angle 	Ordering number					E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
	Type	Mat. no.		Connection			p [bar] (p <sub>max</sub> = 5 bar)				
		1Y 316L SS	21 Hastelloy C22	3/8 BSPP	1/2" Slip-on		1	2	3	at 40 psi [US gal./ min]	
	5MC.022	○	○	AF	TF05	1.0	16	23	28	7	-
	5MC.042	○	○	AF	TF05	3.0	28	40	49	12	-
	5MC.004	○	○	AF	TF05	0.8	22	32	39	10	1.8
	5MC.049	○	○	AF	TF05	0.9	28	39	48	12	1.8

E = narrowest free cross-section  
NPT, more slip-on sizes and weld-on versions on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip is included.  
Mat. no. 1Y: R-clip made of 316L SS (Ordering no. 095.013.1E.05.59).  
Mat. no. 21: R-clip made of Hastelloy C22 (Ordering no. 095.013.21.06.03)
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

**Example of ordering with ATEX-approval.**  
**FDA and (EC) 1935/2004 conform.**  
Only material 316L SS available with ATEX-approval.



**Unit group / category / zones:**

II 1 GD c IIB TX

**Specific operating instructions TX:**

T<sub>a</sub> 4°C to 120°C

T<sub>medium</sub> 4°C to 95°C



**Example**    **Type**    **+ Mat. no.**    **+ Connection = Ordering no.**  
of Ordering: 5MC.022 + 1Y    + AF    = 5MC.022.1Y.AF.EX

**Example of ordering with FDA**  
**and (EC) 1935/2004 conformity.**



**All Materials are suitable for contact with food.**

**Example**    **Type**    **+ Mat. no.**    **+ Connection = Ordering no.**  
of Ordering: 5MC.022 + 1Y    + AF    = 5MC.022.1Y.AF

**Attention:** for the ATEX version of the slip-on connection the code for the connection changes. Example of ordering slip-on connection: 5MC.042.1Y.TF.EX

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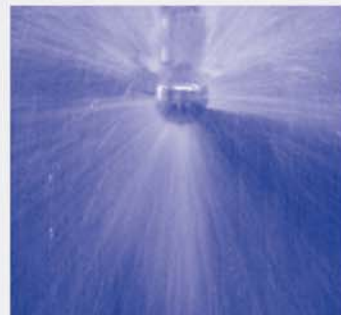


# Rotating cleaning nozzle »MiniSpinner« Series 5MI

## Series 5MI

The innovative slot design gives the MiniSpinner its high degree of effectiveness. Due to the modern bearing construction, it is particularly reliable and durable.

The MiniSpinner is made entirely from stainless steel and designed for use also at high temperatures. Apart from stainless steel, it is also available in Hastelloy and in many flow rates.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8	9
--	-------------------------------	---	---	---	---	---	---	---	---	---	---



### Materials

316L SS, 440C SS  
Hastelloy C22,  
Hastelloy C276



### Max. temperature

140 °C



### Recommended operating pressure

2 bar



### Installation

Operation in every direction is possible



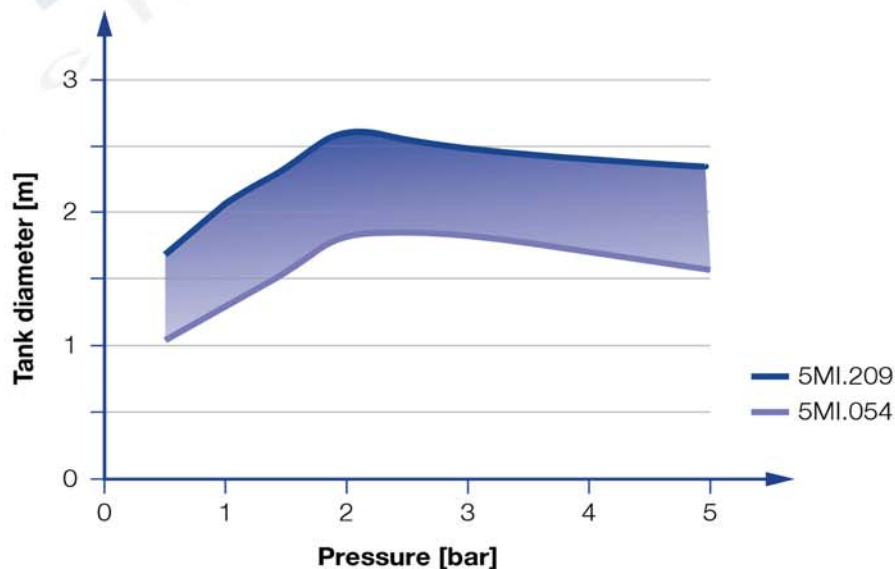
### Filtration

Line strainer with a mesh size of 0.1 mm/170 Mesh



### Bearing

Double ball bearing made of 440C SS  
Double ball bearing made of C276



Overview of the tank diameter, depending upon the pressure of series 5MI

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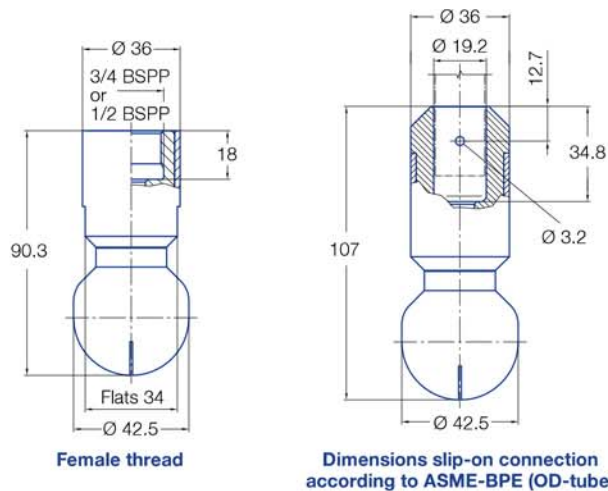
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Female thread

Dimensions slip-on connection according to ASME-BPE (OD-tube)

Spray angle 	Ordering no.						E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
	Type	Mat. no.		Connection				p [bar] (p <sub>max</sub> = 5 bar)				
		1Y 316L SS	21 Hastelloy C22	1/2 BSPP	3/4 BSPP	3/4" Slip-on		1	2	3	at 40 psi [US gal./ min]	
60° 	5MI.162	○	○	AH	-	TF07	2.6	45	63	77	20	-
180° 	5MI.113	○	○	-	AL	TF07	1.0	47	67	82	21	2.6
180° 	5MI.114	○	○	-	AL	TF07	1.0	47	67	82	21	2.6
360° 	5MI.054	○	○	-	AL	TF07	0.5	21	30	37	9	1.8
	5MI.074	○	○	-	AL	TF07	0.6	35	49	60	15	2.1
	5MI.014	○	○	-	AL	TF07	0.9	49	69	85	21	2.3
	5MI.209	○	○	-	AL	TF07	1.5	71	100	122	31	2.6

E = narrowest free cross-section  
NPT, more slip-on sizes and weld-on versions on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip is included. Mat. no. 1Y: R-clip made of 316L SS (Ordering no. 095.022.1Y.50.60). Mat. no. 21: R-clip made of Hastelloy C22 (Ordering no. 095.022.21.50.60)
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

**Example of ordering with ATEX-approval.**  
FDA and (EC) 1935/2004 conform.

Only material 316L SS available with ATEX-approval.

**Unit group / category / zones:**

II 1 GD c IIB TX

**Specific operating instructions TX:**

T<sub>a</sub> 4°C to 120°C

T<sub>medium</sub> 4°C to 95°C



Example Type + Mat. no. + Connection = Ordering no.  
of Ordering: 5MI.162 + 1Y + AL = 5MI.162.1Y.AL.EX

**Example of ordering with FDA**  
and (EC) 1935/2004 conformity.



**All Materials are suitable for**  
contact with food.

Example Type + Mat. no. + Connection = Ordering no.  
of Ordering: 5MI.162 + 1Y + AL = 5MI.162.1Y.AL

**Attention:** for the ATEX version of the slip-on connection the code for the connection changes. Example of ordering slip-on connection: 5MI.162.1Y.TF.EX

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# Pop-up rotating cleaning nozzles »PopUp Whirly« Series 5P2/5P3

**NEW**

## Series 5P2 / 5P3

When a certain fluid pressure is reached, the rotating cleaning nozzle of PopUp Whirly is automatically extended from the enclosure. These free-spinning rotating nozzles can be installed flush in the tank wall. They are also suitable for cleaning pipes and for applications that use foam. They are of particular interest for applications in the food and beverage industry as well as for the pharmaceutical and chemical industry.



	<b>Max. tank diameter [m]</b>	0	1	2	3	4	5	6	7	8	9
--	-------------------------------	---	---	---	---	---	---	---	---	---	---



### Materials

316L SS,  
316Ti SS (spring),  
316 SS (snap ring),  
PEEK (slide-bearing),  
FKM (O-ring)



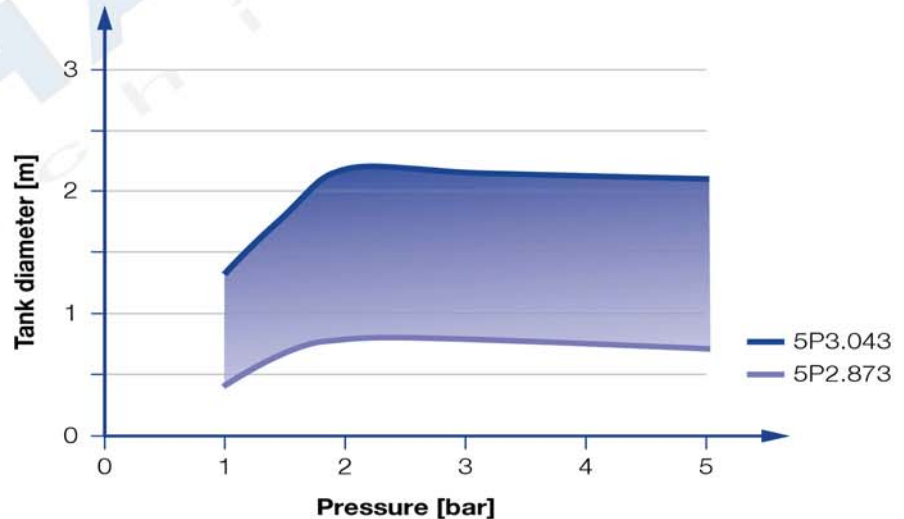
### Max. temperature

140 °C



### Recommended operating pressure

2 bar, 5P2: opening pressure approx. 1.0 bar, closing pressure approx. 0.5 bar,  
5P3: opening pressure approx. 0.9 bar, closing pressure approx. 0.5 bar



Overview of the tank diameter, depending upon the pressure of series 5P2 / 5P3



### Installation

Operation in every direction is possible



### Filtration

Line strainer with a mesh size of 0.3 mm/50 Mesh



### Bearing

Slide bearing made of PEEK

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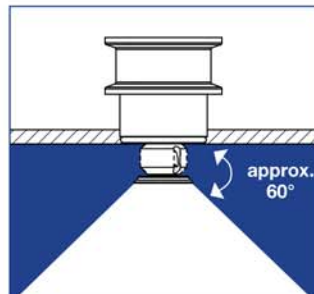
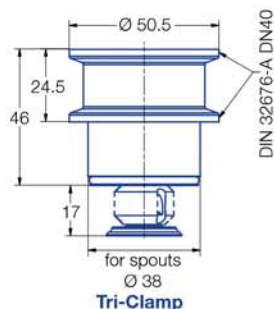
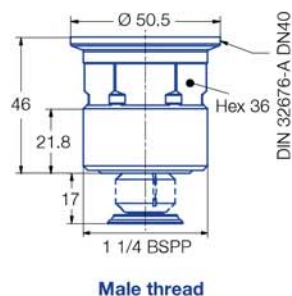
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## Series 5P2



Spray angle 	Ordering no.	Tank connection		E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]
		1 1/4 BSPP	Tri- Clamp		p [bar] (p <sub>max</sub> = 6 bar)				
1	2			3	at 40 psi [US gal./ min]				
	5P2.873.1Y.AP	○	-	1.1	10.6	15.0	18.4	5	0.8
	5P2.873.1Y.00	-	○	1.1	10.6	15.0	18.4	5	0.8
	5P2.923.1Y.AP	○	-	1.1	14.1	20.0	24.5	6	1.0
	5P2.923.1Y.00	-	○	1.1	14.1	20.0	24.5	6	1.0

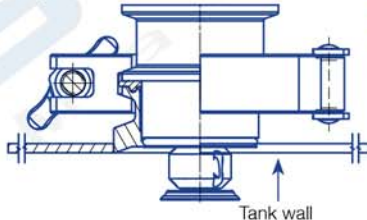
The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.

## Nozzle installation

Via thread in idle position



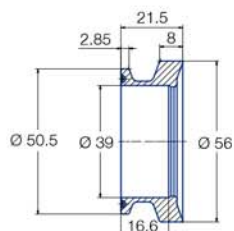
Via Tri-Clamp in operating position



## Information on operation

- The PopUp Whirly is not suitable for operation with compressed air or any other gas.
- Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Weld-in flange for Tri-Clamp-Version



### Ordering number

050.020.1Y.01.00

### Material

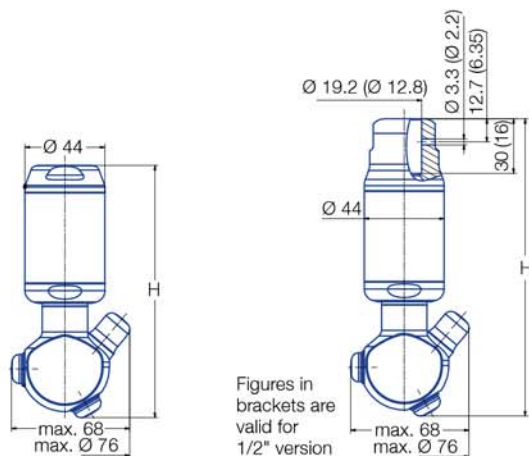
316L SS

### Information

Gasket with a thickness of 2 mm must be used if the PopUp Whirly is installed with this weld-in flange.













Female thread

Dimensions slip-on connection according to ASME-BPE (OD-tube)

### Nozzle dimensions [mm]

Connection	Max. Height [H]
<b>AF</b>	146
<b>AH</b>	149
<b>AL</b>	139
<b>AN</b>	139
<b>TF05</b>	148
<b>TF07</b>	164

Spray angle 	Ordering no.							E Ø [mm]	V̇ [l/min]				Max. tank diameter [m]	
	Type	Connection							p [bar] (p <sub>max</sub> = 15 bar)					
		3/8 BSPP female	1/2 BSPP female	3/4 BSPP female	1 BSPP female	1/2" Slip-on	3/4" Slip-on		2	5	10	at 40 psi [US gal./min]		
	180°	5S2.953.1Y	AF	AH	-	-	TF05	-	2.0	25	40	57	7.8	3.5
		5S3.053.1Y	-	AH	-	-	-	TF07	2.0	41	65	92	12.8	4.0
		5S3.113.1Y	-	AH	AL	-	-	TF07	2.0	60	94	133	18.4	6.0
		5S3.183.1Y	-	-	AL	-	-	TF07	2.0	89	141	199	27.7	7.0
		5S3.233.1Y	-	-	AL	-	-	TF07	2.0	111	175	248	34.3	7.5
		5S3.263.1Y	-	-	AL	AN	-	TF07	2.0	135	213	301	41.8	8.0
	180°	5S2.954.1Y	AF	AH	-	-	TF05	-	2.0	25	40	57	7.8	3.5
		5S3.054.1Y	-	AH	-	-	-	TF07	2.0	41	65	92	12.8	4.0
		5S3.114.1Y	-	AH	AL	-	-	TF07	2.0	60	94	133	18.4	6.0
		5S3.184.1Y	-	-	AL	-	-	TF07	2.0	89	141	199	27.7	7.0
		5S3.234.1Y	-	-	AL	-	-	TF07	2.0	111	175	248	34.3	7.5
		5S3.264.1Y	-	-	AL	AN	-	TF07	2.0	135	213	301	41.8	8.0
	270°	5S2.955.1Y	AF	AH	-	-	TF05	-	2.0	25	40	57	7.8	3.5
		5S3.055.1Y	-	AH	-	-	-	TF07	2.0	41	65	92	12.8	4.0
		5S3.115.1Y	-	AH	AL	-	-	TF07	2.0	60	94	133	18.4	6.0
		5S3.185.1Y	-	-	AL	-	-	TF07	2.0	89	141	199	27.7	7.0
		5S3.235.1Y	-	-	AL	-	-	TF07	2.0	111	175	248	34.3	7.5
		5S3.265.1Y	-	-	AL	AN	-	TF07	2.0	135	213	301	41.8	8.0
	270°	5S2.956.1Y	AF	AH	-	-	TF05	-	2.0	25	40	57	7.8	3.5
		5S3.056.1Y	-	AH	-	-	-	TF07	2.0	41	65	92	12.8	4.0
		5S3.116.1Y	-	AH	AL	-	-	TF07	2.0	60	94	133	18.4	6.0
		5S3.186.1Y	-	-	AL	-	-	TF07	2.0	89	141	199	27.7	7.0
		5S3.236.1Y	-	-	AL	-	-	TF07	2.0	111	175	248	34.3	7.5
		5S3.266.1Y	-	-	AL	AN	-	TF07	2.0	135	213	301	41.8	8.0
	360°	5S2.959.1Y	AF	AH	-	-	TF05	-	1.7	25	40	57	7.8	3.5
		5S3.059.1Y	-	AH	-	-	-	TF07	2.0	41	65	92	12.8	4.0
		5S3.119.1Y	-	AH	AL	-	-	TF07	2.0	60	94	133	18.4	6.0
		5S3.189.1Y	-	-	AL	-	-	TF07	2.0	89	141	199	27.7	7.0
		5S3.239.1Y	-	-	AL	-	-	TF07	2.0	111	175	248	34.3	7.5
		5S3.269.1Y	-	-	AL	AN	-	TF07	2.0	135	213	301	41.8	8.0

E = narrowest free cross-section · NPT on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.





# Rotating cleaning nozzle »XactClean® HP« Series 5S2/5S3

## Information on operation

- Operation with compressed air only for short-term usage. Operation above the recommended operating pressure means higher wear and smaller droplets. This might have adverse effects on the cleaning result.

## Slip-on information

- R-clip made of 316L SS is included (Ordering no.: 095.022.1Y.50.60.E (TF07), 095.013.1E.05.59.0 (TF05)).
- Depending on diameter of the adapter the flow rate can increase due to leakage between connecting pipe and rotating cleaning nozzle.

### Example of ordering with ATEX-approval.



#### Unit group / category / zones:

II 1 GD c IIB TX

#### Specific operating instructions TX:

T<sub>a</sub> 4°C to 120°C  
T<sub>medium</sub> 4°C to 95°C

Example	Type	+ Connection	= Ordering no.
of Ordering:	5S2.953.1Y.XX.EX	+ AL	= 5S2.953.1Y.AL.EX

### Example of ordering with FDA and (EC) 1935/2004 conformity.



All Materials are suitable for contact with food.

Example	Type	+ Connection	= Ordering no.
of Ordering:	569.103.1Y.XX	+ AL	= 569.103.1Y.AL

**Attention:** for the ATEX version of the slip-on connection the code for the connection changes. 1/2" slip-on: T5 · 3/4" slip-on: T7  
Example of ordering slip-on connection: 5S2.953.1Y.T5.EX







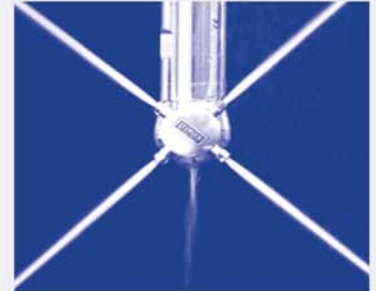
# High impact tank cleaning machine

## »IntenseClean Hygienic«

### Series 5TA

#### Series 5TA

The IntenseClean Hygienic 5TA is a permanent feature, especially in the pharmaceutical, food and beverage industries. It is extremely effective thanks to the particularly powerful solid jet nozzles and is also suitable for small tanks with persistent soiling. The series can resist pressures of up to 15 bar and high temperatures without any problem. All parts used exhibit a particularly high surface quality.



	<b>Max. Tank diameter [m]</b>	0	3	6	9	12	15	18	21	24	27
--	-------------------------------	---	---	---	---	----	----	----	----	----	----



#### Materials

316L SS, 316 SS,  
632 SS, PEEK, PTFE,  
Zirconium oxide,  
EPDM



#### Max. temperature

95 °C



#### Recommended operating pressure

5 bar



#### Installation

Operation in every  
direction is possible



#### Filtration

Line strainer with a  
mesh size of  
0.2 mm/80 Mesh



#### Bearing

Ball bearing



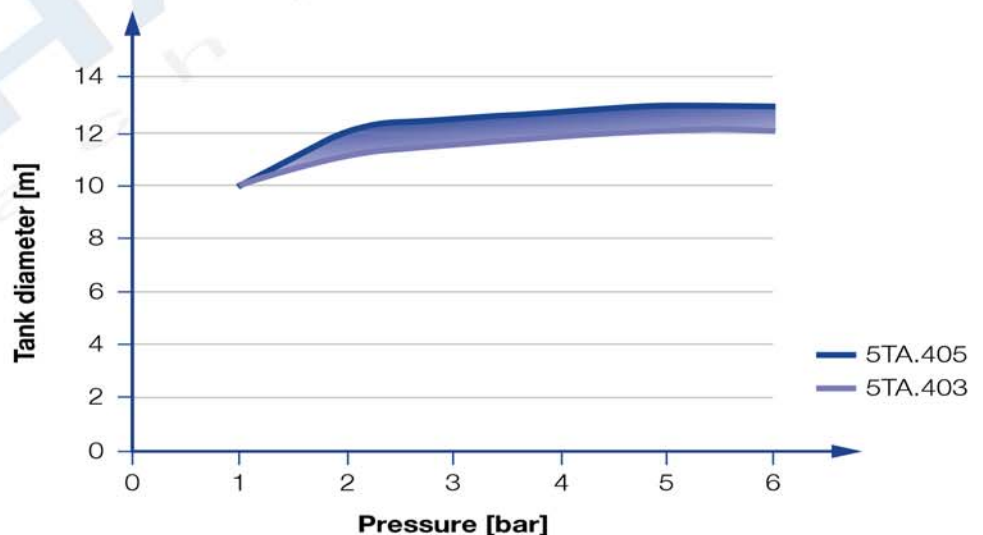
#### Weight

0.9 kg



#### Rotation monitoring sensor

Sensor compatible,  
Info: see page 74



Overview of the tank diameter, depending upon the pressure of series 5TA

SHARRY Machinery (Shanghai) Co.,Ltd.  
13761943624

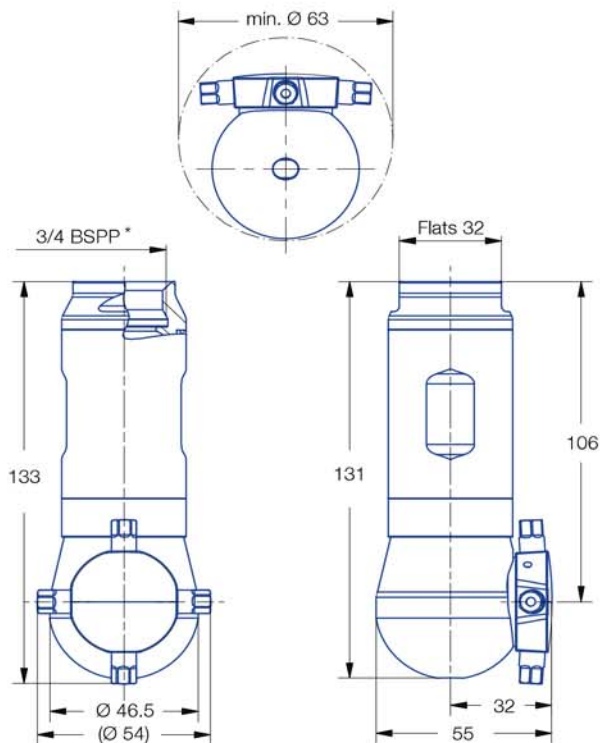
Web: [www.sharry-sh.com](http://www.sharry-sh.com)

Tel: +86-21-64881886  
[www.xierui-sh.com](http://www.xierui-sh.com)

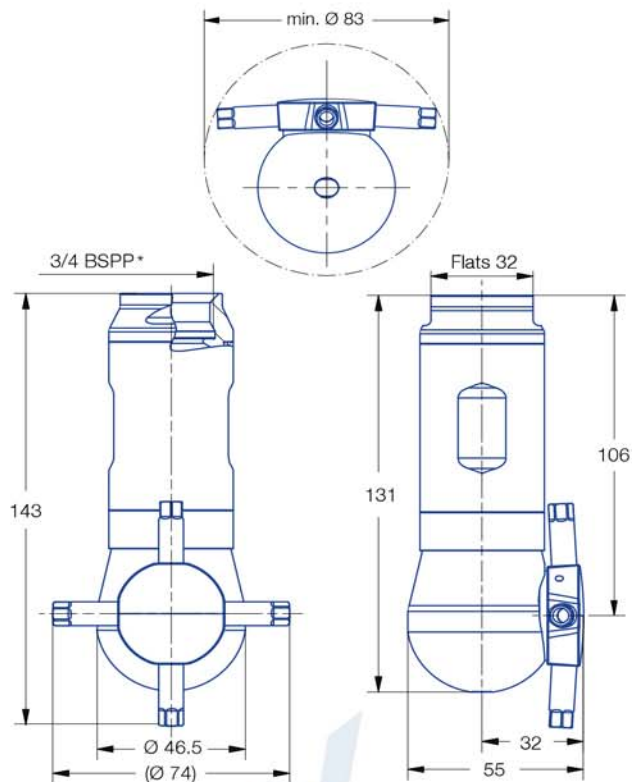


扫一扫，进入手机旺铺







Female thread  
5TA.403.1Y.AL and 5TA.404.1Y.AL

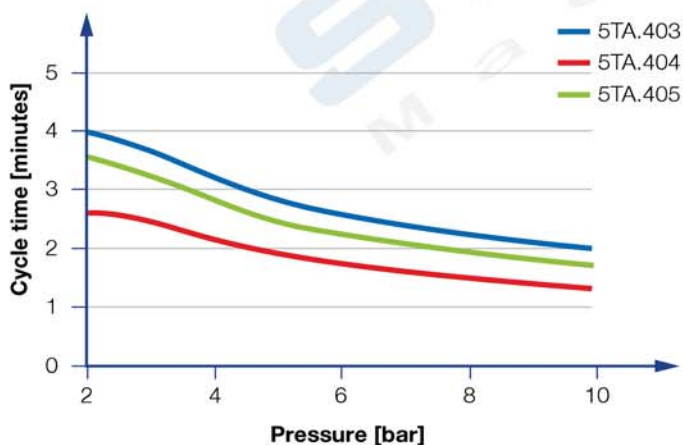


Female thread  
5TA.405.1Y.AL

Spray angle 	Ordering no. Type	E Ø [mm]	Number. Ø Nozzles [mm]	V̇ [l/min]				Max. tank diameter [m]
				p [bar] (p <sub>max</sub> = 15 bar)				
				2	5	10	at 40 psi [US gal./ min]	
 360°	5TA.403.1Y.AL	1.5	4 x 3.0	25	40	56	7.8	12.0
	5TA.404.1Y.AL	1.5	4 x 4.0	35	55	78	10.9	12.5
	5TA.405.1Y.AL	1.5	4 x 5.0	50	79	112	15.5	13.0

E = narrowest free cross-section  
Slip-on connection on request

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.



Cycle time depending on pressure of series 5TA

**Example of ordering with ATEX-approval.  
FDA and (EC) 1935/2004 conform.**



**Unit group / category / zones:**

II 1 GD c IIB TX Ta 4 °C to 120 °C  
for zone 0, 1, 2 (gas atmosphere)  
for zone 20, 21, 22 (dust atmosphere)



Example  
of Ordering:

Type/Ordering no.  
5TA.403.1Y.AL.EX

**Example of ordering with FDA  
and (EC) 1935/2004 conformity.**



**All Materials are suitable for  
contact with food.**



Example  
of Ordering:

Type/Ordering no.  
5TA.403.1Y.AL





# High impact tank cleaning machine

## »IntenseClean Hygienic«

### Series 5TB

#### Series 5TB

The IntenseClean Hygienic 5TB has firmly established itself, above all in the pharmaceutical, food and beverage industries – and with good reason: The especially strong solid jets produce an extremely high degree of effectiveness, while the gear-controlled rotation ensures high levels of efficiency. All parts used are noted for their particularly high surface quality. This series is suitable for high pressures and temperatures.



Max. Tank diameter [m]	0	3	6	9	12	15	18	21	24	27
------------------------	---	---	---	---	----	----	----	----	----	----



#### Materials

316L SS, 316 SS,  
632 SS, PEEK, PTFE,  
Zirconium oxide,  
EPDM



#### Max. temperature

95 °C



#### Recommended operating pressure

5 bar



#### Installation

Operation in every  
direction is possible



#### Filtration

Line strainer with a mesh  
size of 0.2 mm/80 Mesh



#### Bearing

Ball bearing



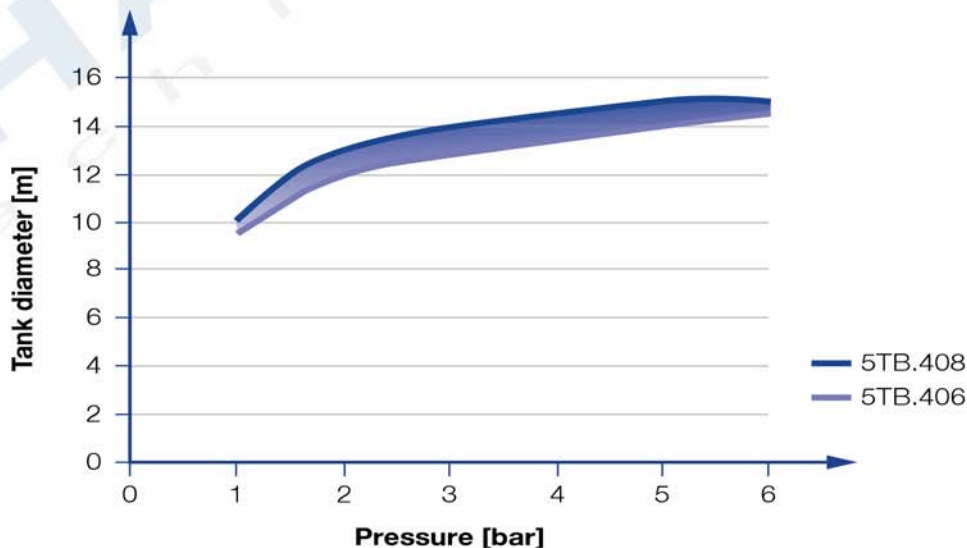
#### Weight

4.0 kg



#### Rotation monitoring sensor

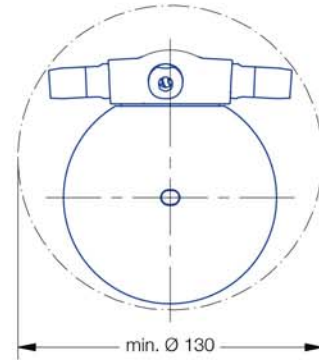
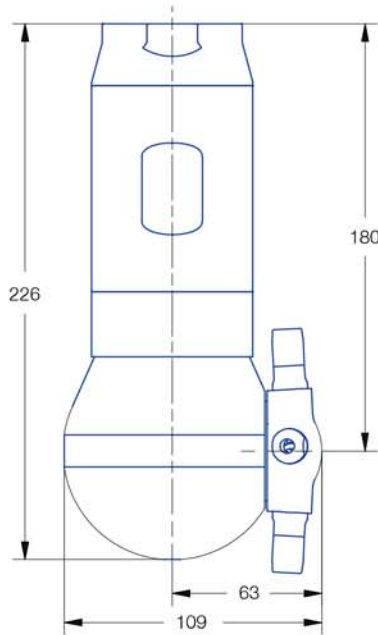
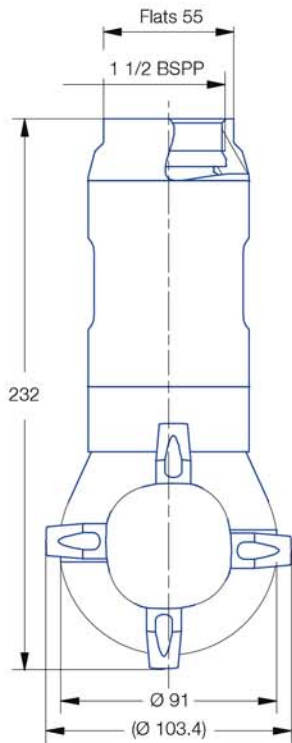
Sensor compatible,  
Info: see page 74





Overview of the tank diameter, depending upon the pressure of series 5TB





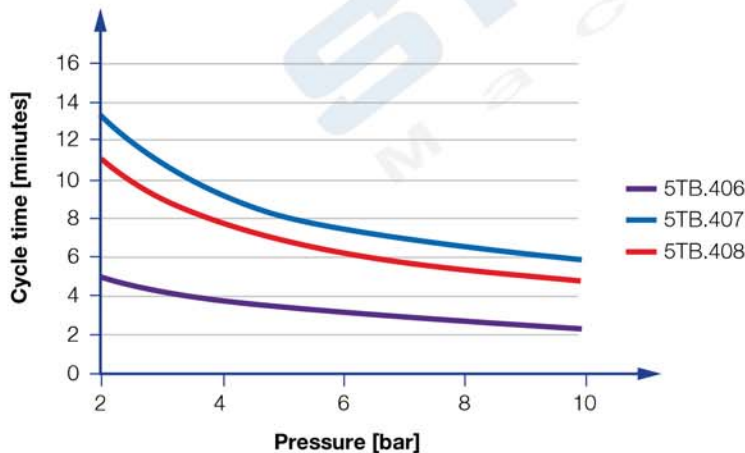


Female thread

Spray angle 	Ordering no. Type	E Ø [mm]	Number, Ø Nozzles [mm]	V̇ [l/min]				Max. tank diameter [m]
				p [bar] (p <sub>max</sub> = 25 bar)				
				2	5	10	at 40 psi [US gal./ min]	
360° 	5TB.406.1Y.AS	6.0	4 x 6.0	107	169	239	33.1	14.0
	5TB.407.1Y.AS	6.0	4 x 7.0	135	213	302	41.9	14.0
	5TB.408.1Y.AS	6.0	4 x 8.0	165	261	369	51.2	15.0

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.



Cycle time depending on pressure of series 5TB

**Example of ordering with ATEX-approval.**  
**FDA and (EG) 1935/2004 conform.**



**Unit group / category / zones:**

II 1 GD c IIB TX Ta 4°C to 120°C  
for zone 0, 1, 2 (gas atmosphere)  
for zone 20, 21, 22 (dust atmosphere)



Example  
of Ordering:

Type/Ordering no.  
5TB.406.1Y.AS.EX

**Example of ordering with FDA  
and (EG) 1935/2004 conformity.**



**All Materials are suitable for  
contact with food.**



Example  
of Ordering:

Type/Ordering no.  
5TB.406.1Y.AS







# High impact tank cleaning machine

## »IntenseClean«

### Series 5TM

#### Series 5TM

The IntenseClean is used in many applications, amongst others in the petrochemical industry. It is noted for its robust and proven construction, effective solid jets and gear-controlled rotation.



	<b>Max. tank diameter [m]</b>	0	3	6	9	12	15	18	21	24	27
--	-------------------------------	---	---	---	---	----	----	----	----	----	----



**Materials**  
316L SS, 304 SS,  
PTFE, PEEK



**Max. temperature**  
95 °C



**Recommended operating pressure**  
5 bar



**Installation**  
Operation in every direction is possible



**Filtration**  
Line strainer with a mesh size of 0.2 mm/80 Mesh



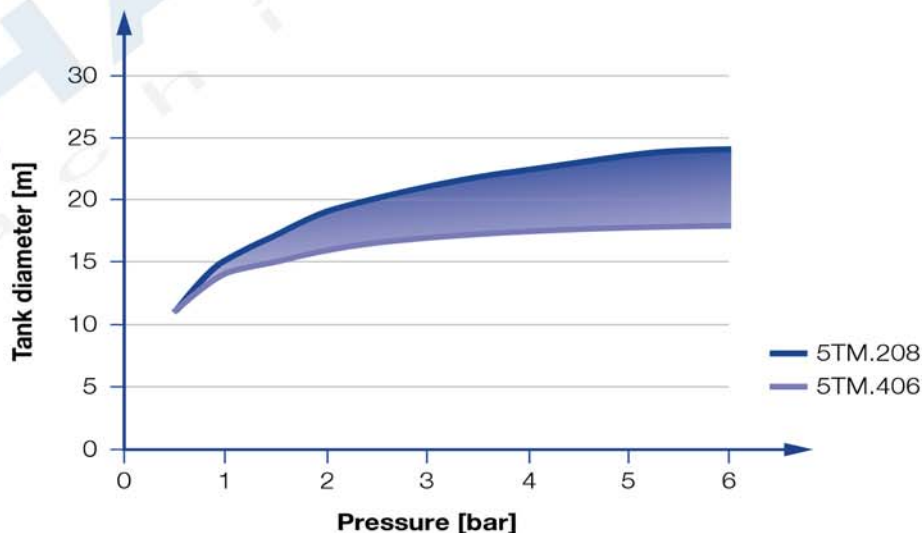
**Bearing**  
Ball bearing



**Weight**  
7.5 kg



**Rotation monitoring sensor**  
Sensor compatible,  
Info: see page 74



Overview of the tank diameter, depending upon the pressure of series 5TM

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13761943624

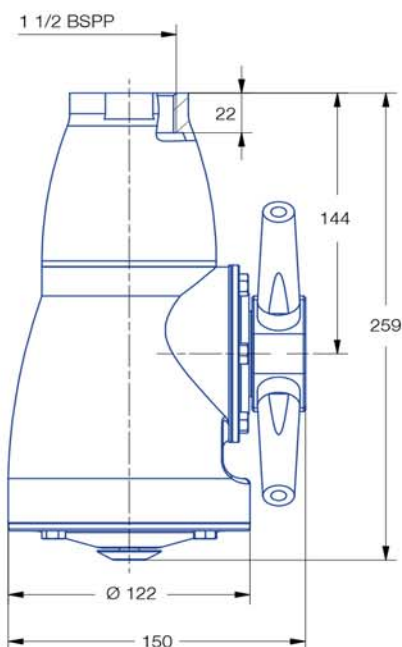
Web: [www.sharry-sh.com](http://www.sharry-sh.com)

Tel: +86-21-64881886

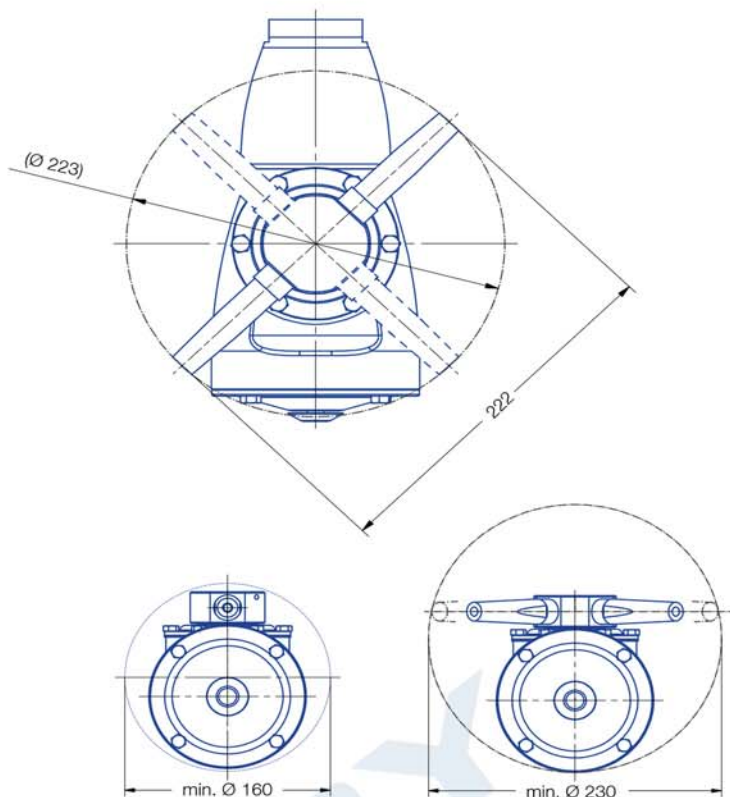
[www.xierui-sh.com](http://www.xierui-sh.com)



扫一扫，进入手机旺铺





Female thread



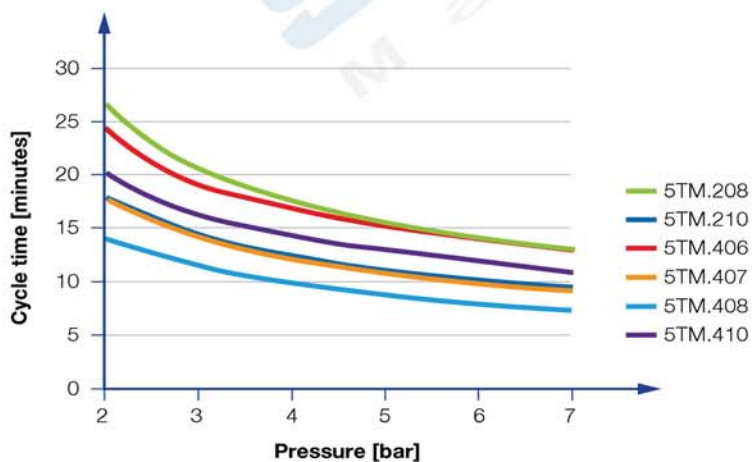
5TM.2XX.1Y.AS (2 nozzles)

5TM.4XX.1Y.AS (4 nozzles)

Spray angle 	Ordering no.	E Ø [mm]	Number, Ø Nozzles [mm]	V̇ [l/min]				Max. tank diameter [m]
				p [bar] (p <sub>max</sub> = 7 bar)				
				2	3	5	at 40 psi [US gal./ min]	
360° 	5TM.208.1Y.AS	8	2 x 8.0	125	153	198	39	24.0
	5TM.210.1Y.AS	10	2 x 10.0	160	196	253	50	24.0
	5TM.406.1Y.AS	6	4 x 6.0	140	171	221	43	18.0
	5TM.407.1Y.AS	7	4 x 7.0	170	208	269	53	20.0
	5TM.408.1Y.AS	8	4 x 8.0	200	245	316	62	22.0
	5TM.410.1Y.AS	10	4 x 10.0	260	318	411	81	23.0

E = narrowest free cross-section

The maximum tank diameter shown above applies for the recommended operating pressure and is indicative only. The cleaning result is also affected by the type of soiling.



Cycle time depending on pressure of series 5TM

