

**SPECIFICATIONS**

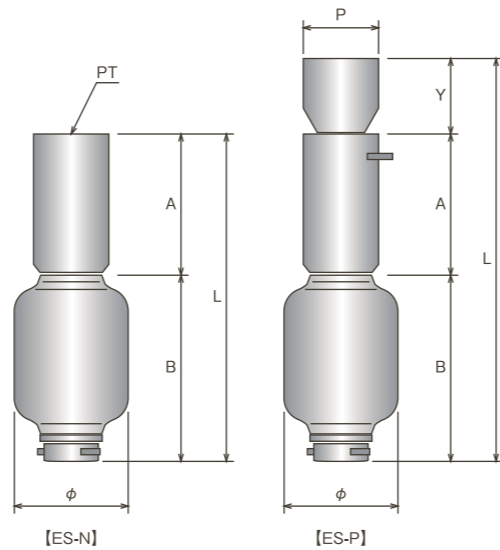
Series	ES																	
Spray capacity code	01		02		03		05		1		2		3		4		5	
Connection type code	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P
Connection type	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning	Thread	Pinning
Pipe connection size	1/8F (PT)	φ10.5	1/8F (PT)	φ13.8	1/4F (PT)	φ17.3	3/8F (PT)	φ21.7	3/8F (PT)	φ21.7	1/2F (PT)	φ25.4	3/4F (PT)	φ38.1	1F (PT)	φ38.1	1 1/2F (PT)	φ50.8
Pipe connection size code	1/8F	φ10	1/8F	φ13	1/4F	φ17	3/8F	φ21	3/8F	φ21	1/2F	φ25	3/4F	φ38	1F	φ38	1 1/2F	φ50
Mass (g)	20	25	35	50	75	90	155	210	185	235	260	315	605	660	925	1060	1640	1820
Spray capacity (L/min) at 0.3MPa	7		13		20		31		42		70		150		210		440	
Pressure range (MPa)	0.05~1.0						0.1~1.0											
Spray pattern	360° spray, 180° upward spray, 180° downward spray																	
Rotation speed (rpm)	120 (at 0.3MPa)																	
Material	SUS316L (Shaft bearing: PTFE)						SUS304/SUS316L (Shaft bearing: PTFE)											

Note: Specifications are subject to change without prior notice for purposes of product improvement.  
 Note: The above spray capacities and rotation speed are for reference only.

**DIMENSIONS**

Spray capacity code	Connection type code	L	φ	A	B	Y	P	PT
01	N	38	16	16	22	—	—	1/8"
	P	48						10
02	N	53	20	24.5	28.5	—	—	1/8"
	P	73						20
03	N	65	25	30	35	—	—	1/4"
	P	90						25
05	N	97	30	45	52	—	—	3/8"
	P	127						30
1	N	115	31.5	55	60	—	—	3/8"
	P	145						30
2	N	123	41.5	55	68	—	—	1/2"
	P	153						30
3	N	139	60	60	79	—	—	3/4"
	P	174						35
4	N	163	75	70	93	—	—	1"
	P	198						35
5	N	180	88	75	105	—	—	1 1/2"
	P	225						45

[Unit: mm] (Dimensions L to P)



Simple, compact design for CIP cleaning

# Rotating Cleaning Nozzles for Tanks/Containers

ES series



**HOW TO ORDER** Please inquire or order for a specific nozzle using this coding system, referring to the above SPECIFICATIONS.

(Example) 1/8F ES 01N S316L (360)

Pipe connection size	Series	Spray capacity code	Connection type code	Material	Spray pattern
1/8F	ES	01	N	S316L	(360)
<ul style="list-style-type: none"> <li>■ 1/8~1 1/2F</li> <li>■ φ10~50</li> </ul>		<ul style="list-style-type: none"> <li>■ 01 ■ 1</li> <li>■ 02 ■ 2</li> <li>■ 03 ■ 3</li> <li>■ 05 ■ 4</li> <li>■ 5</li> </ul>	<ul style="list-style-type: none"> <li>■ N</li> <li>■ P</li> </ul>	<ul style="list-style-type: none"> <li>■ S304 (only for spray capacity code 05 to 5)</li> <li>■ S316L</li> </ul>	<ul style="list-style-type: none"> <li>■ 360</li> <li>■ 180 upward</li> <li>■ 180 downward</li> </ul>

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## FEATURES

### Simple structure

- No external power needed as rotation is driven solely by the flow of the cleaning fluid.
- Simple design ensures reliable rotating cleaning, while also being compact (min. outer diameter  $\phi 16\text{mm}$ ).
- Easy maintenance due to low number of parts. Lengthening the period of use is possible by replacing the upper and lower shaft bearings.

### Sanitary

- Internal design greatly reduces dripping from the nozzle tip. The unit is self-cleaning and hygienic.

### Mountable in any direction

- ES nozzles can be mounted sideways, upwards, or in any direction.

### Wide range of spray capacity

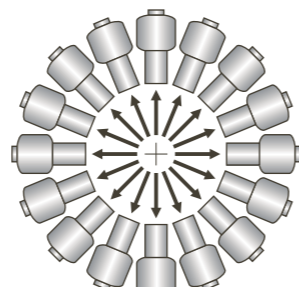
- Available in 9 types ranging from 7 to 440L/min (at 0.3MPa), suitable for a great range of tank sizes.

### 2 types of connection

- Select from Thread connection [type N] or Pin connection [type P] for a more sanitary option.



Compact!



Mountable in any direction

## PHOTO OF SPRAY



Rotating flat spray pattern achieves a complete, uniform cleaning. (This photo is 360° spray type.)

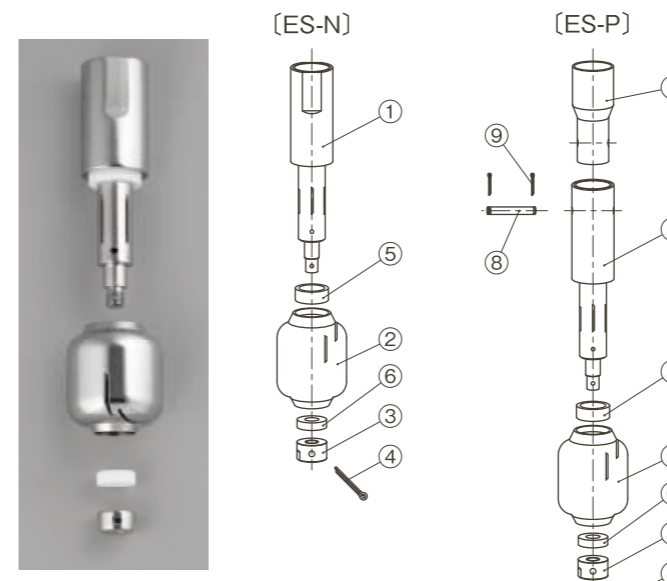
## PHOTO OF SLIT



Ingenuous slit design eliminates blind spots and performs self-cleaning.

## COMPONENTS

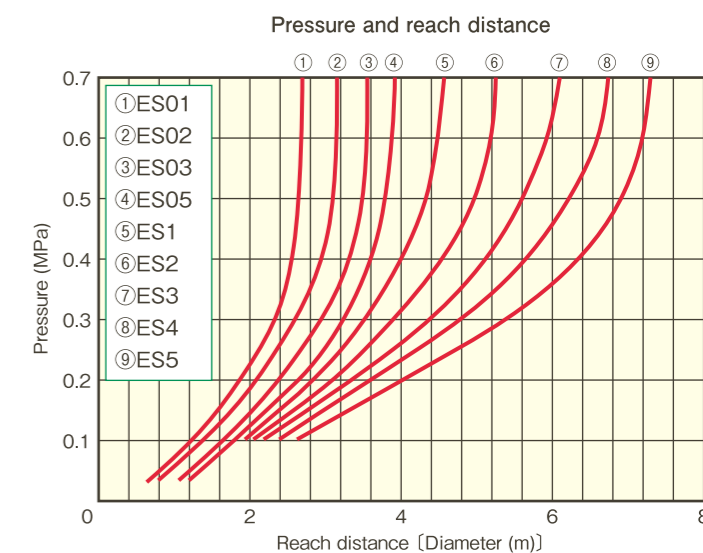
Simple structure with rotation driven solely by water pressure. Easy to disassemble and clean the components.



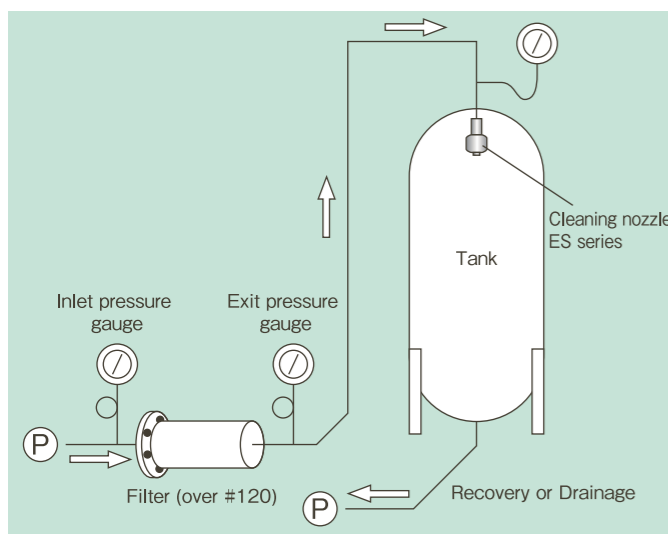
- ① Connecting adaptor ② Nozzle body ③ Hub
- ④ Lock pin ⑤ Shaft bearing (upper) ⑥ Shaft bearing (lower)
- ⑦ Welded connecting pipe ⑧ Connecting pin ⑨ Side pin

## REACH DISTANCE

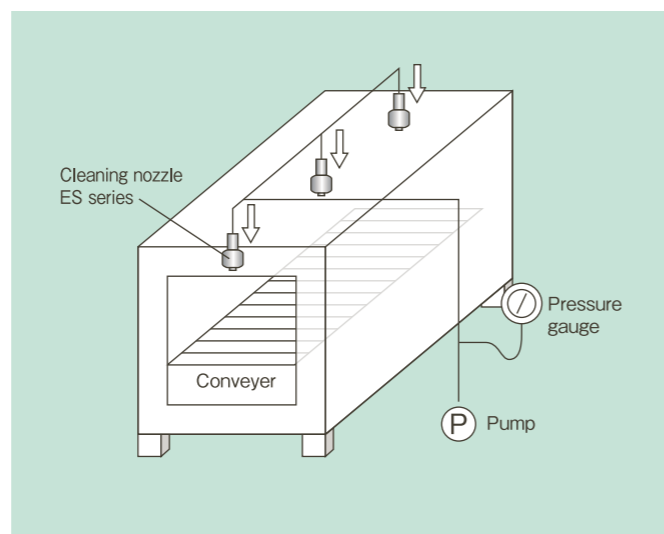
Please check whether the required reach distance is obtained at the chosen conditions (setting pressure and spray capacity code) in the chart below. If not, please choose a different pressure and/or spray capacity code.



## EXAMPLE USES



Tank Cleaning

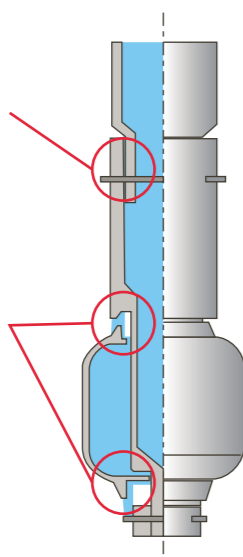


Cleaning inside Storage Areas

## SANITARY DESIGN

- ES-[type P] series is highly sanitary, having no threads in the flow passage, thus no grooves to collect contaminants.

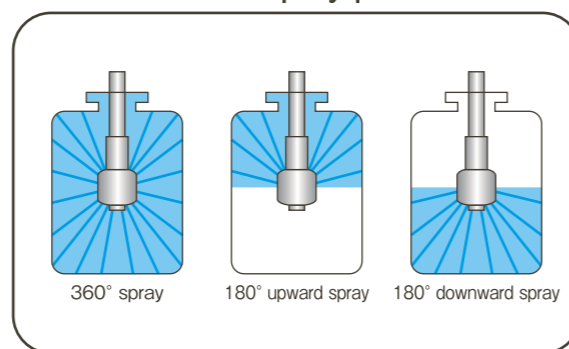
- Spraying liquid flows from the gaps between the connecting adaptor and nozzle body and keeps the nozzle surface clean. (Common to both ES [type N] and [type P])



## SPRAY PATTERN

There are 3 standard spray patterns. Please select the pattern for your application and purpose.

### Standard spray patterns



Diagrams are approximate images.

## SPRAY CAPACITY

9 types are available, ranging from 7 to 440L/min (at 0.3MPa) for both ES-[type N] and ES-[type P]. Select a suitable spray capacity code according to the setting pressure and required flow rate.

