

For cleaning easy to remove dirt

ES SERIES / Metal / Self-cleaning, Easy Maintenance



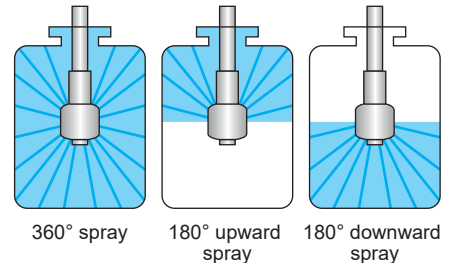
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Innovative slit design eliminates blind spots and self-cleaning function.

Spray Coverage

Select from three patterns.



Note: ES with 180° upward spray has two holes in the bottom of the nozzle body (rotating part) for drainage.

Features

- No external power is needed as rotation is driven solely by the flow of the cleaning liquid.
- Maintenance is easy due to the low parts count.
- Internal design greatly reduces dripping from the nozzle tip. Maintains high level of cleanliness because it is self-cleaning.
- ES series can be installed in any direction, vertically, horizontally or diagonally.
- Available in two types of connections: thread connection (ES-N) and pin connection (ES-P).

Applications

- Cleaning of a variety of tanks, such as mixing, blending, and storage tanks
- CIP cleaning
- Cleaning the inside of conveyor tunnels and ovens

Basic Specifications

| | |
|---|---|
| ■ Operating Pressure Range 0.1–1.0 MPa (15–145 psi) | ■ Material ¹ Metal parts: S316L Shaft bearings: PTFE |
| ■ Spray Capacity ² 4.0–803.3 L/min | ■ Weight ³ 20–1,820 g |
| ■ Reach Distance of Spray (Diameter) Approx. 0.5–7.3 m | ■ Rotation Speed (at 0.3 MPa) ⁴ 60–120 rpm |
| ■ Max. Temperature 60°C (140°F) | ■ Outer Surface Finish #320 buffing |

¹In the material code, "S" represents "stainless steel".

²Spray flow rate in the above operating pressure range. See the flow-rate diagrams and chart for details.

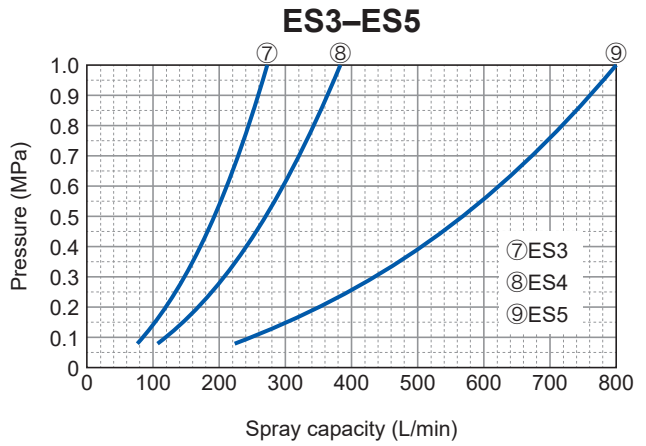
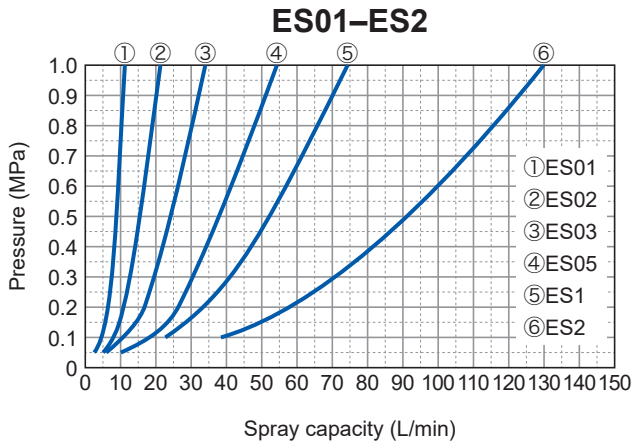
³See the table in the drawing section.

⁴For reference only. Rotation speed varies depending on the pressure applied.

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Flow-rate Diagram

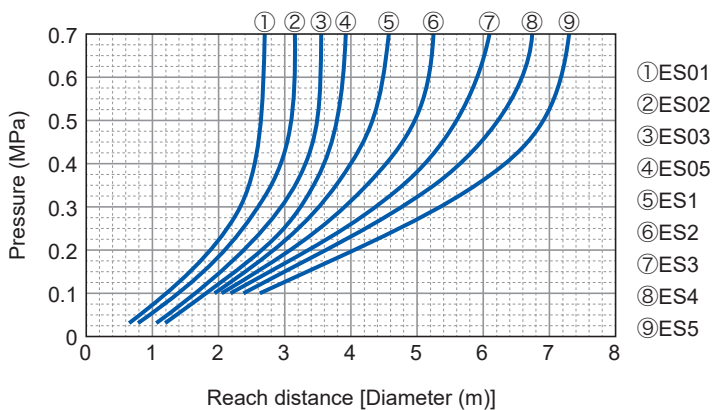


Flow-rate Chart

| Spray capacity code | Pipe connection size ^{*5} | | Spray capacity (L/min) | | | | |
|---------------------|------------------------------------|-----------------------|------------------------|---------|---------|---------|---------|
| | [ES-N] Thread connection | [ES-P] Pin connection | 0.1 MPa | 0.3 MPa | 0.5 MPa | 0.7 MPa | 1.0 MPa |
| 01 | Rc1/8 | ∅10 | 4.0 | 7 | 9.0 | 10.7 | 12.8 |
| 02 | Rc1/8 | ∅13 | 7.5 | 13 | 16.8 | 19.9 | 23.7 |
| 03 | Rc1/4 | ∅17 | 11.5 | 20 | 25.8 | 30.6 | 36.5 |
| 05 | Rc3/8 | ∅21 | 17.9 | 31 | 40.0 | 47.4 | 56.6 |
| 1 | Rc3/8 | ∅21 | 24.2 | 42 | 54.2 | 64.2 | 76.7 |
| 2 | Rc1/2 | ∅25 | 40.4 | 70 | 90.4 | 106.9 | 127.8 |
| 3 | Rc3/4 | ∅38 | 86.6 | 150 | 193.6 | 229.1 | 273.9 |
| 4 | Rc1 | ∅38 | 121.2 | 210 | 271.1 | 320.8 | 383.4 |
| 5 | Rc1½ | ∅50 | 254.0 | 440 | 568.0 | 672.1 | 803.3 |

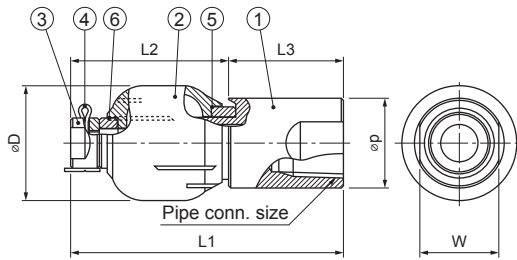
^{*5}As for the ES-P, it only indicates the connection code, not an exact pin size or pipe diameter. For details see the drawing and dimension table on page 14.

Reach Distance of Spray

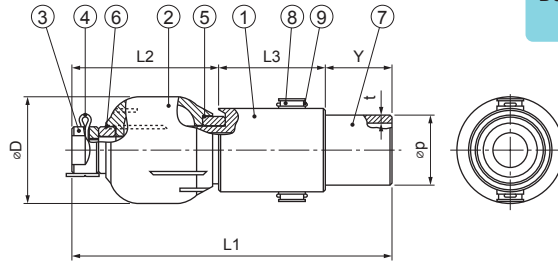


Drawing

ES-N
(Thread connection)



ES-P
(Pin connection)



- ①Connecting adaptor ②Nozzle body (rotating part) ③Hub ④Lock pin ⑤Upper shaft bearing (PTFE)
⑥Lower shaft bearing (PTFE) ⑦Welded connecting pipe ⑧Connecting pin ⑨Side pin

■Dimensions and weight

| Spray capacity code | Pipe connection code and size | | Outer dimensions (mm) | | | | | | | Weight (g) | |
|---------------------|-------------------------------|--------------|-----------------------|------|------|------|------|----|------|------------|-------|
| | | | L1 | L2 | L3 | W | øD | Y | øp | | t |
| 01 | N (thread) | Rc1/8 | 38 | 22 | 16 | 11 | 16 | — | 12.5 | — | 20 |
| | P (pin) | 6A (ø10.5) | 48 | | | — | | 10 | 10.5 | 1.2 | 25 |
| 02 | N (thread) | Rc1/8 | 53 | 28.5 | 24.5 | 12 | 20 | — | 13 | — | 35 |
| | P (pin) | 8A (ø13.8) | 73 | | | — | | 20 | 13.8 | 1.2 | 50 |
| 03 | N (thread) | Rc1/4 | 65 | 35 | 30 | 16.5 | 25 | — | 18 | — | 75 |
| | P (pin) | 10A (ø17.3) | 90 | | | — | | 25 | 17.3 | 1.5 | 90 |
| 05 | N (thread) | Rc3/8 | 97 | 52 | 45 | 20 | 30 | — | 22 | — | 155 |
| | P (pin) | 15A (ø21.7) | 127 | | | — | | 30 | 21.7 | 1.5 | 210 |
| 1 | N (thread) | Rc3/8 | 115 | 60 | 55 | 20 | 31.5 | — | 22 | — | 185 |
| | P (pin) | 15A (ø21.7) | 145 | | | — | | 30 | 21.7 | 1.5 | 235 |
| 2 | N (thread) | Rc1/2 | 123 | 68 | 55 | 23 | 41.5 | — | 25 | — | 260 |
| | P (pin) | 1S (ø25.4) | 153 | | | — | | 30 | 25.4 | 1.5 | 315 |
| 3 | N (thread) | Rc3/4 | 139 | 79 | 60 | 23 | 60 | — | 35 | — | 605 |
| | P (pin) | 1.5S (ø38.1) | 174 | | | — | | 35 | 38.1 | 1.5 | 660 |
| 4 | N (thread) | Rc1 | 163 | 93 | 70 | 37.6 | 75 | — | 40 | — | 925 |
| | P (pin) | 1.5S (ø38.1) | 198 | | | — | | 35 | 38.1 | 1.5 | 1,060 |
| 5 | N (thread) | Rc1½ | 180 | 105 | 75 | 52 | 88 | — | 55 | — | 1,640 |
| | P (pin) | 2S (ø50.8) | 225 | | | — | | 45 | 50.8 | 1.5 | 1,820 |

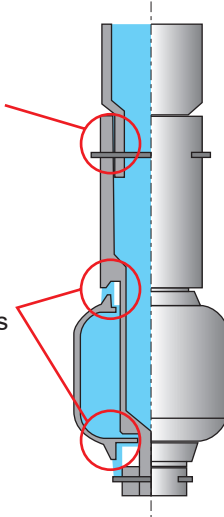
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Internal Design

The ES-P, pin connection model, is very clean since there are no threads in the flow passage where contaminants could collect.

In both models, the ES-N and ES-P, the cleaning liquid flows from openings between the connecting adaptor and nozzle body (rotating part), keeping the nozzle surface clean.



HOW TO ORDER

To inquire about or order a specific product please refer to this coding system.

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

| 1/8F | ES | 01 | N | S316L | (360) |
|--|---|---|---|-------|---|
| Pipe Conn. Size ^{*5, *6} | | Spray Capacity Code | Connection Code | | Spray Coverage Pattern |
| [ES-N] ■ 1/8F ■ 1/4F ■ 3/8F ■ 1/2F ■ 3/4F ■ 1F ■ 1*1/2F | [ES-P] ■ ø10 ■ ø13 ■ ø17 ■ ø21 ■ ø25 ■ ø38 ■ ø50 | ■ 01 ■ 02 ■ 03 ■ 05 ■ 1 ■ 2 ■ 3 ■ 4 ■ 5 | ■ N (thread connection) ■ P (pin connection) | | ■ 360 ■ 180 upward ■ 180 downward |

^{*6} "F" indicates female tapered pipe thread ("Rc" of the ISO standard), e.g. 1/4F = Rc1/4.