## VVP+AS series

### FEATURES
- Built-in 0.05 MPa check valve.
- Can be used as a hydraulic nozzle for high flow rates and as a pneumatic nozzle for better control at low flow rates, which allows optimal control over a wide range of flow rate with minimal air consumption.
- Spray capacity turndown ratio is up to 1:20, while minimizing variation in spray angle and distribution.
- Normal flat spray pattern with mountain-shaped distribution.

### MATERIALS
- **Nozzle body**: S303
- **Mixing adaptor**: S304
- **Air socket**: S304
- **Check valve body**: S303
- **Poppet**: S303
- **Spring**: S304
- **O-ring**: NBR

### MASS
- Approx. 200 g

### How to order
- Please inquire or order for a specific nozzle using this coding system.

### Comparison of distribution of VVP+AS series

#### Spray condition
- **Low spray flow**
  - Used as a pneumatic spray nozzle
  - Spray capacity: 6.28 l/min
  - Liquid pressure: 0.03 MPa
  - Air consumption: 30 l/min, Normal
  - Compressed air pressure: 0.1 MPa
  - Air-water ratio: 3.4
  - Spray height: 400 mm

- **Large spray flow**
  - Used as a hydraulic spray nozzle
  - Spray capacity: 51.2 l/min
  - Liquid pressure: 1 MPa
  - Air consumption: 0
  - Compressed air pressure: 0.1 MPa
  - Spray height: 400 mm

### Conversion of unit
- **Pressure**: 0.1 MPa ≈ 14.50 psi
- **Flow rate**: 1 l (liter) ≈ 0.26 US gal.
- **1 US gal. ≈ 3.79 l (liter)**

### Table: Spray capacity (l/min) & Air consumption (l/min, Normal)*

<table>
<thead>
<tr>
<th>Spray angle code</th>
<th>Liquid pressure (MPa)</th>
<th>Liquid</th>
<th>Air</th>
<th>Free pas. dia. (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.01 MPa</td>
<td>0.1 MPa</td>
<td>0.3 MPa</td>
<td>0.7 MPa</td>
</tr>
<tr>
<td>100</td>
<td>107 115 119</td>
<td>—</td>
<td>—</td>
<td>9.4/35</td>
</tr>
<tr>
<td>200</td>
<td>107 115 119</td>
<td>1.55/46</td>
<td>2.83/40</td>
<td>4.26/30</td>
</tr>
<tr>
<td>115</td>
<td>107 115 119</td>
<td>1.78/46</td>
<td>3.37/40</td>
<td>4.89/30</td>
</tr>
<tr>
<td>210</td>
<td>107 115 119</td>
<td>2.10/46</td>
<td>3.81/40</td>
<td>5.53/30</td>
</tr>
<tr>
<td>310</td>
<td>107 115 119</td>
<td>2.28/46</td>
<td>4.32/40</td>
<td>6.28/30</td>
</tr>
</tbody>
</table>

*Air consumption measured at compressed air pressure of 0.1 MPa

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**Spray condition**
- Spray capacity: 51.2 l/min
- Liquid pressure: 1 MPa
- Air consumption: 0
- Compressed air pressure: 0.1 MPa
- Spray height: 400 mm

**Comparison of distribution of VVP+AS series**

**How to order**
- Please inquire or order for a specific nozzle using this coding system.

**Example**
- VVP 115 100 S303 + 1/4F × 1/4F AS S304
- VVP115 100 S303 + 1/4F × 1/4F AS S304