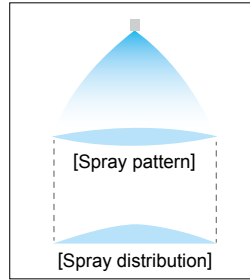


# Three-Piece Structure Standard Flat Spray Nozzles

VV: Made-to-Order

VV / V

Flat Spray



- Flat spray pattern with a mountain-shaped spray distribution and gradually tapered edges.
- Tapered edges overlap to provide uniform spray distribution in multi-nozzle arrangements.

**[STANDARD PRESSURE]**  
0.3 MPa

**[APPLICATIONS]**

Cleaning: Automotives, containers, films, felts, filters, screens, bottles, crushed stone, earth and sand, metal parts, machines, steel plates and pieces  
 Spraying: Etchants, oils, lubricants, glues, solutions, insecticides, herbicides  
 Cooling: Gas, heat exchangers, tanks, steel, roofs  
 Water screen: Fire protection, heat protection, dust suppression, deodorization

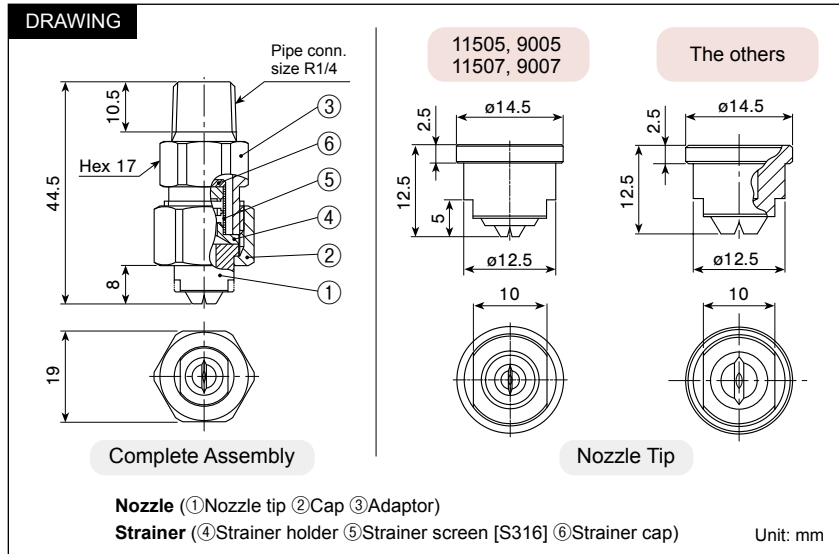
**VV SERIES (all metal)**

Made-to-Order

|           |  |
|-----------|--|
| Structure | <ul style="list-style-type: none"> <li>• Three-piece structure, made of metal.</li> <li>• Includes three parts: Nozzle tips, cap, and adaptor. Worn-out nozzle tips can be replaced separately.</li> <li>• Small spray capacity models come with or without a strainer.</li> </ul> |
| Material  | <ul style="list-style-type: none"> <li>• S303</li> <li>SPECIAL ORDER MATERIAL: S316 or others</li> </ul>   |
| Weight    | <ul style="list-style-type: none"> <li>• Complete assembly<sup>*1</sup>: 47 g</li> <li>• Nozzle tip: 11 g</li> </ul>   |

\*1) With strainer, add 5 g to the above weight and 2 mm to the total length.

Strainer is optional on some models and can be ordered without it. See table for details.



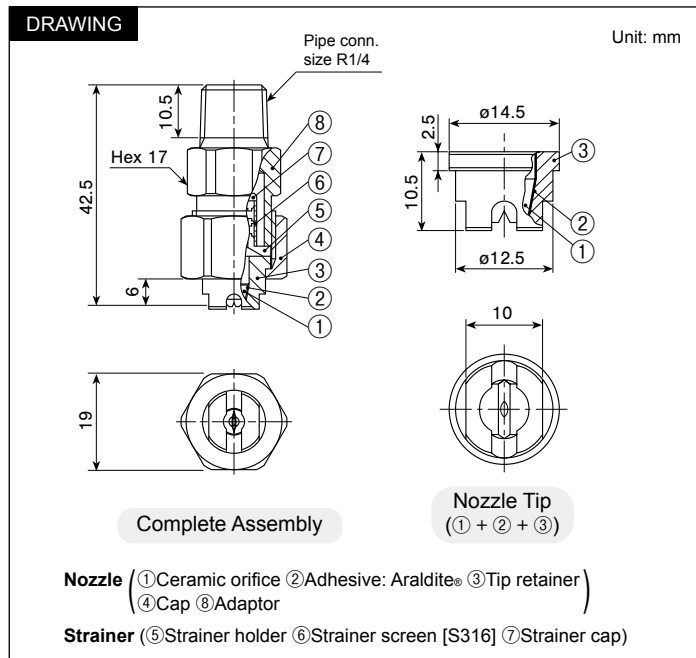
[Note] Appearance and dimensions may differ slightly depending on material and nozzle code.

**V SERIES (with ceramic orifice)**

|           |   |
|-----------|---|
| Structure | <ul style="list-style-type: none"> <li>• Three-piece structure with a ceramic orifice insert.</li> <li>• Includes three parts: Nozzle tips, cap, and adaptor. Worn-out nozzle tips can be replaced separately.</li> <li>• Small spray capacity models come with or without a strainer.</li> </ul> |
| Material  | <ul style="list-style-type: none"> <li>• Nozzle orifice: ceramic</li> <li>• Tip retainer: S303</li> <li>• Cap, Adaptor, and Strainer: S303</li> <li>SPECIAL ORDER MATERIAL: S316 or others</li> </ul>   |
| Weight    | <ul style="list-style-type: none"> <li>• Complete assembly<sup>*1</sup>: 43 g</li> <li>• Nozzle tip: 6.6 g</li> </ul>   |

\*1) With strainer, add 5 g to the above weight and 2 mm to the total length.

Strainer is optional on some models and can be ordered without it. See table for details.



[Note] Appearance and dimensions may differ slightly depending on material and nozzle code.

| Spray angle code | Spray capacity code | VV <sup>2</sup> | V   | Spray angle (°) |         |         | Spray capacity (L/min) |         |          |         |         |         |         |       |       |     | Mean drop. dia. (µm) | Free pass. dia. (mm) | Strainer mesh size |
|------------------|---------------------|-----------------|-----|-----------------|---------|---------|------------------------|---------|----------|---------|---------|---------|---------|-------|-------|-----|----------------------|----------------------|--------------------|
|                  |                     |                 |     | 0.15 MPa        | 0.3 MPa | 0.7 MPa | 0.05 MPa               | 0.1 MPa | 0.15 MPa | 0.2 MPa | 0.3 MPa | 0.5 MPa | 0.7 MPa | 1 MPa | 2 MPa |     |                      |                      |                    |
| 115              | 03                  |                 | ●   | 101             | 115     | 124     | —                      | 0.17    | 0.21     | 0.24    | 0.30    | 0.39    | 0.46    | 0.55  | 0.77  | 140 | 0.2                  | 200                  |                    |
|                  | 04                  |                 | ●   | 102             | 115     | 124     | —                      | 0.23    | 0.28     | 0.33    | 0.40    | 0.52    | 0.61    | 0.73  | 1.03  | ∩   | 0.2                  | 200                  |                    |
|                  | 05                  | ●               | ●   | 102             | 115     | 124     | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 160 | 0.3                  | 150                  |                    |
|                  | 07                  | ●               | ●   | 103             | 115     | 124     | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩   | 0.3                  | 150                  |                    |
|                  | 10                  | ●               | ●   | 103             | 115     | 124     | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩   | 0.4                  | 150                  |                    |
|                  | 15                  | ●               | ●   | 104             | 115     | 123     | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩   | 0.5                  | 100                  |                    |
|                  | 20                  | ●               | ●   | 104             | 115     | 123     | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | 270 | 0.6                  | 100                  |                    |
|                  | 30                  | ●               | ●   | 105             | 115     | 122     | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | ∩   | 0.8                  | 50                   |                    |
|                  | 40                  | ●               | ○   | 106             | 115     | 122     | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩   | 1.0                  | 50                   |                    |
|                  | 60                  | ○               | ○   | 107             | 115     | 121     | 2.45                   | 3.46    | 4.24     | 4.90    | 6.00    | 7.75    | 9.17    | 11.0  | 15.5  | ∩   | 1.3                  | —                    |                    |
|                  | 80                  | ○               | ○   | 107             | 115     | 121     | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩   | 1.5                  | —                    |                    |
|                  | 100                 | ○               | ○   | 107             | 115     | 120     | 4.08                   | 5.77    | 7.07     | 8.17    | 10.0    | 12.9    | 15.3    | 18.3  | 25.8  | ∩   | 1.7                  | —                    |                    |
| 200              | ○                   | ○               | 109 | 115             | 120     | 8.16    | 11.5                   | 14.1    | 16.3     | 20.0    | 25.8    | 30.6    | 36.5    | 51.6  | 510   | 2.4 | —                    |                      |                    |
| 90               | 02                  |                 | ●   | 76              | 90      | 100     | —                      | 0.12    | 0.14     | 0.16    | 0.20    | 0.26    | 0.31    | 0.37  | 0.52  | 145 | 0.2                  | 200                  |                    |
|                  | 03                  |                 | ●   | 76              | 90      | 100     | —                      | 0.17    | 0.21     | 0.24    | 0.30    | 0.39    | 0.46    | 0.55  | 0.77  | 150 | 0.2                  | 200                  |                    |
|                  | 04                  |                 | ●   | 77              | 90      | 100     | —                      | 0.23    | 0.28     | 0.33    | 0.40    | 0.52    | 0.61    | 0.73  | 1.03  | ∩   | 0.3                  | 150                  |                    |
|                  | 05                  | ●               | ●   | 77              | 90      | 100     | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 170 | 0.3                  | 150                  |                    |
|                  | 07                  | ●               | ●   | 78              | 90      | 100     | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩   | 0.3                  | 150                  |                    |
|                  | 10                  | ●               | ●   | 78              | 90      | 99      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩   | 0.4                  | 100                  |                    |
|                  | 15                  | ●               | ●   | 79              | 90      | 99      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩   | 0.6                  | 100                  |                    |
|                  | 20                  | ●               | ●   | 79              | 90      | 98      | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | ∩   | 0.8                  | 50                   |                    |
|                  | 30                  | ●               | ●   | 80              | 90      | 97      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | 280 | 1.0                  | 50                   |                    |
|                  | 40                  | ○               | ○   | 81              | 90      | 97      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩   | 1.2                  | —                    |                    |
|                  | 50                  | ○               | ○   | 81              | 90      | 97      | 2.04                   | 2.89    | 3.54     | 4.08    | 5.00    | 6.46    | 7.64    | 9.13  | 12.9  | ∩   | 1.2                  | —                    |                    |
|                  | 60                  | ○               | ○   | 82              | 90      | 96      | 2.45                   | 3.46    | 4.24     | 4.90    | 6.00    | 7.75    | 9.17    | 11.0  | 15.5  | ∩   | 1.3                  | —                    |                    |
|                  | 80                  | ○               | ○   | 82              | 90      | 96      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩   | 1.5                  | —                    |                    |
|                  | 100                 | ○               | ○   | 82              | 90      | 96      | 4.08                   | 5.77    | 7.07     | 8.17    | 10.0    | 12.9    | 15.3    | 18.3  | 25.8  | ∩   | 1.7                  | —                    |                    |
|                  | 120                 | ○               | ○   | 83              | 90      | 95      | 4.90                   | 6.93    | 8.49     | 9.80    | 12.0    | 15.5    | 18.3    | 21.9  | 31.0  | ∩   | 2.0                  | —                    |                    |
|                  | 140                 | ○               | ○   | 83              | 90      | 95      | 5.72                   | 8.08    | 9.90     | 11.4    | 14.0    | 18.1    | 21.4    | 25.6  | 36.1  | ∩   | 2.2                  | —                    |                    |
| 170              | ○                   | ○               | 83  | 90              | 95      | 6.94    | 9.82                   | 12.0    | 13.9     | 17.0    | 22.0    | 26.0    | 31.1    | 43.9  | ∩     | 2.4 | —                    |                      |                    |
| 200              | ○                   | ○               | 84  | 90              | 95      | 8.16    | 11.5                   | 14.1    | 16.3     | 20.0    | 25.8    | 30.6    | 36.5    | 51.6  | 540   | 2.7 | —                    |                      |                    |
| 80               | 02                  |                 | ●   | 67              | 80      | 90      | —                      | 0.12    | 0.14     | 0.16    | 0.20    | 0.26    | 0.31    | 0.37  | 0.52  | 150 | 0.2                  | 200                  |                    |
|                  | 03                  |                 | ●   | 67              | 80      | 90      | —                      | 0.17    | 0.21     | 0.24    | 0.30    | 0.39    | 0.46    | 0.56  | 0.77  | ∩   | 0.3                  | 150                  |                    |
|                  | 04                  |                 | ●   | 67              | 80      | 90      | —                      | 0.23    | 0.28     | 0.33    | 0.40    | 0.52    | 0.61    | 0.73  | 1.03  | ∩   | 0.3                  | 150                  |                    |
|                  | 05                  | ●               | ●   | 67              | 80      | 90      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 180 | 0.3                  | 150                  |                    |
|                  | 07                  | ●               | ●   | 68              | 80      | 89      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩   | 0.4                  | 150                  |                    |
|                  | 10                  | ●               | ●   | 68              | 80      | 89      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩   | 0.5                  | 100                  |                    |
|                  | 15                  | ●               | ●   | 69              | 80      | 88      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩   | 0.7                  | 50                   |                    |
|                  | 20                  | ●               | ●   | 69              | 80      | 88      | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | ∩   | 0.8                  | 50                   |                    |
|                  | 30                  | ○               | ○   | 70              | 80      | 87      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | 290 | 1.0                  | —                    |                    |
|                  | 40                  | ○               | ○   | 71              | 80      | 87      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩   | 1.1                  | —                    |                    |
|                  | 50                  | ○               | ○   | 71              | 80      | 86      | 2.04                   | 2.89    | 3.54     | 4.08    | 5.00    | 6.46    | 7.64    | 9.13  | 12.9  | ∩   | 1.4                  | —                    |                    |
|                  | 60                  | ○               | ○   | 72              | 80      | 86      | 2.45                   | 3.46    | 4.24     | 4.90    | 6.00    | 7.75    | 9.17    | 11.0  | 15.5  | ∩   | 1.5                  | —                    |                    |
|                  | 80                  | ○               | ○   | 72              | 80      | 86      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩   | 1.5                  | —                    |                    |
|                  | 100                 | ○               | ○   | 72              | 80      | 85      | 4.08                   | 5.77    | 7.07     | 8.17    | 10.0    | 12.9    | 15.3    | 18.3  | 25.8  | ∩   | 1.7                  | —                    |                    |
|                  | 120                 | ○               | ○   | 73              | 80      | 85      | 4.90                   | 6.93    | 8.49     | 9.80    | 12.0    | 15.5    | 18.3    | 21.9  | 31.0  | ∩   | 2.1                  | —                    |                    |
|                  | 200                 | ○               | ○   | 74              | 80      | 85      | 8.16                   | 11.5    | 14.1     | 16.3    | 20.0    | 25.8    | 30.6    | 36.5  | 51.6  | 550 | 2.9                  | —                    |                    |
| 65               | 02                  |                 | ●   | 52              | 65      | 75      | —                      | 0.12    | 0.14     | 0.16    | 0.20    | 0.26    | 0.31    | 0.37  | 0.52  | 155 | 0.2                  | 200                  |                    |
|                  | 03                  |                 | ●   | 52              | 65      | 75      | —                      | 0.17    | 0.21     | 0.24    | 0.30    | 0.39    | 0.46    | 0.55  | 0.77  | 160 | 0.3                  | 150                  |                    |
|                  | 04                  |                 | ●   | 52              | 65      | 75      | —                      | 0.23    | 0.28     | 0.33    | 0.40    | 0.52    | 0.61    | 0.73  | 1.03  | ∩   | 0.3                  | 150                  |                    |
|                  | 05                  | ●               | ●   | 52              | 65      | 74      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 190 | 0.4                  | 150                  |                    |
|                  | 07                  | ●               | ●   | 53              | 65      | 74      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩   | 0.5                  | 100                  |                    |
|                  | 10                  | ●               | ●   | 54              | 65      | 73      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩   | 0.6                  | 100                  |                    |
|                  | 15                  | ●               | ●   | 54              | 65      | 73      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩   | 0.8                  | 50                   |                    |
|                  | 20                  | ●               | ●   | 55              | 65      | 72      | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | 310 | 0.9                  | 50                   |                    |
|                  | 30                  | ○               | ○   | 56              | 65      | 72      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | ∩   | 1.1                  | —                    |                    |
|                  | 40                  | ○               | ○   | 56              | 65      | 71      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩   | 1.3                  | —                    |                    |
|                  | 50                  | ○               | ○   | 57              | 65      | 71      | 2.04                   | 2.89    | 3.54     | 4.08    | 5.00    | 6.46    | 7.64    | 9.13  | 12.9  | ∩   | 1.5                  | —                    |                    |
|                  | 60                  | ○               | ○   | 57              | 65      | 71      | 2.45                   | 3.46    | 4.24     | 4.90    | 6.00    | 7.75    | 9.17    | 11.0  | 15.5  | ∩   | 1.6                  | —                    |                    |
|                  | 80                  | ○               | ○   | 58              | 65      | 71      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩   | 1.9                  | —                    |                    |
|                  | 100                 | ○               | ○   | 58              | 65      | 70      | 4.08                   | 5.77    | 7.07     | 8.17    | 10.0    | 12.9    | 15.3    | 18.3  | 25.8  | ∩   | 2.1                  | —                    |                    |
|                  | 120                 | ○               | ○   | 58              | 65      | 70      | 4.90                   | 6.93    | 8.49     | 9.80    | 12.0    | 15.5    | 18.3    | 21.9  | 31.0  | ∩   | 2.3                  | —                    |                    |
|                  | 140                 | ○               | ○   | 59              | 65      | 69      | 5.72                   | 8.08    | 9.90     | 11.4    | 14.0    | 18.1    | 21.4    | 25.6  | 36.1  | ∩   | 2.5                  | —                    |                    |
| 170              | ○                   | ○               | 59  | 65              | 69      | 6.94    | 9.82                   | 12.0    | 13.9     | 17.0    | 22.0    | 26.0    | 31.1    | 43.9  | ∩     | 2.8 | —                    |                      |                    |
| 200              | ○                   | ○               | 59  | 65              | 69      | 8.16    | 11.5                   | 14.1    | 16.3     | 20.0    | 25.8    | 30.6    | 36.5    | 51.6  | 580   | 3.0 | —                    |                      |                    |
| 50               | 03                  |                 | ●   | 37              | 50      | 60      | —                      | 0.17    | 0.21     | 0.24    | 0.30    | 0.39    | 0.46    | 0.55  | 0.77  | 180 | 0.3                  | 150                  |                    |
|                  | 04                  |                 | ●   | 37              | 50      | 60      | —                      | 0.23    | 0.28     | 0.33    | 0.40    | 0.52    | 0.61    | 0.73  | 1.03  | ∩   | 0.4                  | 150                  |                    |
|                  | 05                  | ●               | ●   | 38              | 50      | 59      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 210 | 0.4                  | 150                  |                    |
|                  | 07                  | ●               | ●   | 38              | 50      | 58      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩   | 0.5                  | 100                  |                    |
|                  | 10                  | ●               | ●   | 40              | 50      | 58      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩   | 0.6                  | 100                  |                    |
|                  | 15                  | ●               | ●   | 40              | 50      | 57      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩   | 0.8                  | 50                   |                    |
|                  | 20                  | ○               | ○   | 41              | 50      | 57      | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | ∩   | 1.0                  | —                    |                    |
|                  | 30                  | ○               | ○   | 42              | 50      | 56      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | 340 | 1.2                  | —                    |                    |
|                  | 40                  | ○               | ○   | 42              | 50      | 56      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩   | 1.4                  | —                    |                    |
|                  | 50                  | ○               | ○   | 43              | 50      | 55      | 2.04                   | 2.89    | 3.54     | 4.08    | 5.00    | 6.46    | 7.64    | 9.13  | 12.9  | ∩   | 1.6                  | —                    |                    |
|                  | 60                  | ○               | ○   | 43              | 50      | 55      | 2.45                   | 3.46    | 4.24     | 4.90    | 6.00    | 7.75    | 9.17    | 11.0  | 15.5  | ∩   | 1.7                  | —                    |                    |
|                  | 80                  | ○               | ○   | 43              | 50      | 55      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩   | 2.0                  | —                    |                    |
|                  | 120                 | ○               | ○   | 44              | 50      | 54      | 4.90                   | 6.93    | 8.49     | 9.80    | 12.0    | 15.5    | 18.3    | 21.9  | 31.0  | ∩   | 2.5                  | —                    |                    |
|                  | 200                 | ○               | ○   | 45              | 50      | 53      | 8.16                   | 11.5    | 14.1     | 16.3    | 20.0    | 25.8    | 30.6    | 36.5  | 51.6  | 640 | 3.3                  | —                    |                    |

●: Available with or without strainer ○: Only available without strainer

\*2) The VV series is made-to-order.

| Spray angle code | Spray capacity code | VV <sup>2</sup> | V  | Spray angle (°) |         |         | Spray capacity (L/min) |         |          |         |         |         |         |       |       | Mean drop. dia. (µm) | Free pass. dia. (mm) | Strainer mesh size |
|------------------|---------------------|-----------------|----|-----------------|---------|---------|------------------------|---------|----------|---------|---------|---------|---------|-------|-------|----------------------|----------------------|--------------------|
|                  |                     |                 |    | 0.15 MPa        | 0.3 MPa | 0.7 MPa | 0.05 MPa               | 0.1 MPa | 0.15 MPa | 0.2 MPa | 0.3 MPa | 0.5 MPa | 0.7 MPa | 1 MPa | 2 MPa |                      |                      |                    |
| 40               | 05                  | ●               |    | 30              | 40      | 48      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 230                  | 0.4                  | 150                |
|                  | 07                  | ●               |    | 30              | 40      | 48      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩                    | 0.6                  | 100                |
|                  | 10                  | ●               |    | 31              | 40      | 47      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩                    | 0.7                  | 50                 |
|                  | 20                  | ○               |    | 32              | 40      | 46      | 0.82                   | 1.15    | 1.41     | 1.63    | 2.00    | 2.58    | 3.06    | 3.65  | 5.16  | 380                  | 1.0                  | —                  |
|                  | 30                  | ○               |    | 33              | 40      | 46      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | ∩                    | 1.3                  | —                  |
|                  | 40                  | ○               |    | 33              | 40      | 45      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩                    | 1.5                  | —                  |
|                  | 80                  | ○               |    | 34              | 40      | 44      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩                    | 2.2                  | —                  |
|                  | 120                 | ○               |    | 35              | 40      | 44      | 4.90                   | 6.93    | 8.49     | 9.80    | 12.0    | 15.5    | 18.3    | 21.9  | 31.0  | ∩                    | 2.8                  | —                  |
| 200              | ○                   |                 | 35 | 40              | 43      | 8.16    | 11.5                   | 14.1    | 16.3     | 20.0    | 25.8    | 30.6    | 36.5    | 51.6  | 710   | 3.5                  | —                    |                    |
| 25               | 05                  | ●               |    | 18              | 25      | 32      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 270                  | 0.5                  | 100                |
|                  | 07                  | ●               |    | 18              | 25      | 32      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩                    | 0.6                  | 100                |
|                  | 10                  | ●               |    | 18              | 25      | 32      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩                    | 0.8                  | 50                 |
|                  | 15                  | ○               |    | 19              | 25      | 31      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | 440                  | 1.0                  | —                  |
|                  | 30                  | ○               |    | 19              | 25      | 30      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | ∩                    | 1.4                  | —                  |
|                  | 40                  | ○               |    | 19              | 25      | 30      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩                    | 1.7                  | —                  |
|                  | 80                  | ○               |    | 20              | 25      | 29      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩                    | 2.4                  | —                  |
|                  | 200                 | ○               |    | 21              | 25      | 27      | 8.16                   | 11.5    | 14.1     | 16.3    | 20.0    | 25.8    | 30.6    | 36.5  | 51.6  | 850                  | 4.0                  | —                  |
| 15               | 05                  | ●               |    | 9               | 15      | 22      | —                      | 0.29    | 0.35     | 0.41    | 0.50    | 0.65    | 0.76    | 0.91  | 1.29  | 310                  | 0.5                  | 100                |
|                  | 07                  | ●               |    | 9               | 15      | 21      | —                      | 0.40    | 0.49     | 0.57    | 0.70    | 0.90    | 1.07    | 1.28  | 1.81  | ∩                    | 0.6                  | 50                 |
|                  | 10                  | ●               |    | 9               | 15      | 21      | 0.41                   | 0.58    | 0.71     | 0.82    | 1.00    | 1.29    | 1.53    | 1.83  | 2.58  | ∩                    | 0.8                  | 50                 |
|                  | 15                  | ○               |    | 10              | 15      | 20      | 0.61                   | 0.87    | 1.06     | 1.23    | 1.50    | 1.94    | 2.29    | 2.74  | 3.87  | ∩                    | 1.1                  | —                  |
|                  | 30                  | ○               |    | 10              | 15      | 19      | 1.23                   | 1.73    | 2.12     | 2.45    | 3.00    | 3.88    | 4.58    | 5.48  | 7.75  | 510                  | 1.5                  | —                  |
|                  | 40                  | ○               |    | 10              | 15      | 19      | 1.63                   | 2.31    | 2.83     | 3.27    | 4.00    | 5.16    | 6.11    | 7.30  | 10.3  | ∩                    | 1.8                  | —                  |
|                  | 80                  | ○               |    | 11              | 15      | 18      | 3.27                   | 4.62    | 5.66     | 6.53    | 8.00    | 10.3    | 12.2    | 14.6  | 20.6  | ∩                    | 2.6                  | —                  |
|                  | 200                 | ○               |    | 11              | 15      | 17      | 8.16                   | 11.5    | 14.1     | 16.3    | 20.0    | 25.8    | 30.6    | 36.5  | 51.6  | 1,000                | 4.0                  | —                  |

●: Available with or without strainer ○: Only available without strainer

\*2) The VV series is made-to-order.

**HOW TO ORDER**

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

**① Complete Assembly**

Example: 1/4M V 11505 S303W

|                              |             |                  |                     |          |   |
|------------------------------|-------------|------------------|---------------------|----------|---|
| 1/4M                         | V           | 115              | 05                  | S303     | W   |
| Pipe conn. size <sup>3</sup> | Series      | Spray angle code | Spray capacity code | Material | Strainer  |
|                              | ■ VV<br>■ V | ■ 115<br>∩       | ■ 02<br>∩           |          | ■ W (with strainer)<br>■ (Blank indicates "without strainer") |
|                              |             | ■ 15             | ■ 200               |          |   |

**② Nozzle Tip Only**

Example: 1/4 V 11505 S303

|     |             |                  |                     |          |
|-----|-------------|------------------|---------------------|----------|
| 1/4 | V           | 115              | 05                  | S303     |
|     | Series      | Spray angle code | Spray capacity code | Material |
|     | ■ VV<br>■ V | ■ 115<br>∩       | ■ 02<br>∩           |          |
|     |             | ■ 15             | ■ 200               |          |

\*3) "M" indicates male thread ("R" of the ISO standard), e.g. 1/4M = R1/4.

The VV series is made-to-order.