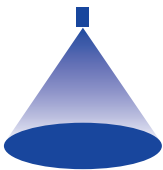


# Axiální trysky s rozstříkem plného kužele

## Series 490/491



### Features:

- Extremely uniform liquid distribution
- Very stable spray angle
- Non clogging due to large free cross sections

### Applications:

- Cleaning and washing processes
- Surface spraying
- Chemical process engineering
- Foam control



Series 490/491

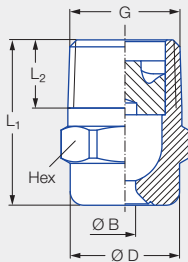


Figure 1

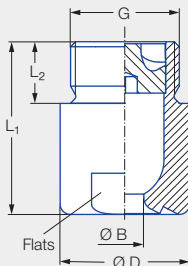


Figure 2

| Code | Figure | G        | Dimensions [mm] |                |      |           | Weight [g] (brass) |
|------|--------|----------|-----------------|----------------|------|-----------|--------------------|
|      |        |          | L <sub>1</sub>  | L <sub>2</sub> | Ø D  | Hex/Flats |                    |
| CA   | 1      | 1/8 BSPT | 18.0            | 6.5            | 10.0 | 11        | 13.0               |
| CC   | 1      | 1/4 BSPT | 22.0            | 10.0           | 13.0 | 14        | 16.0               |
| CE   | 1      | 3/8 BSPT | 24.5            | 10.0           | 16.0 | 17        | 30.0               |
| CE   | 1      | 3/8 BSPT | 30.0            | 10.0           | 16.0 | 17        | 50.0               |
| CG   | 1      | 1/2 BSPT | 32.5            | 13.0           | 21.0 | 22        | 60.0               |
| CG   | 1      | 1/2 BSPT | 43.5            | 13.0           | 21.0 | 22        | 85.0               |
| AK   | 2      | 3/4 BSPP | 42.0            | 15.0           | 32.0 | 27        | 190.0              |
| AM   | 2      | 1 BSPP   | 56.0            | 17.0           | 40.0 | 36        | 350.0              |

| Spray angle | Ordering no. |                      |       |          |          |                 |          |          |        | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | V̇ water [l/min] |      |       |       |       |       |       | Spray diameter D [mm]<br>(at p = 2 bar) |              |
|-------------|--------------|----------------------|-------|----------|----------|-----------------|----------|----------|--------|----------------------|--------------------------------------|------------------|------|-------|-------|-------|-------|-------|-----------------------------------------|--------------|
|             | Type         | Mat. no.             |       | Code     |          |                 |          |          |        |                      |                                      | p [bar]          |      |       |       |       |       |       | H = 250 [mm]                            | H = 500 [mm] |
|             |              | 1Y                   | 30    | 1/8 BSPT | 1/4 BSPT | 3/8 BSPT        | 1/2 BSPT | 3/4 BSPP | 1 BSPP |                      |                                      | 0.5              | 1.0  | 2.0   | 3.0   | 5.0   | 7.0   | 10.0  |                                         |              |
|             |              | Stainless steel 316L | Brass |          |          |                 |          |          |        |                      |                                      |                  |      |       |       |       |       |       |                                         |              |
| 45°         | 490.403      | ●                    | ●     | CA       |          |                 |          |          |        | 1.25                 | 1.25                                 | 0.57             | 0.76 | 1.00  | 1.18  | 1.44  | 1.65  | 1.90  | 200                                     | 400          |
|             | 490.523      | ●                    | ●     | CA       |          |                 |          |          |        | 1.70                 | 1.70                                 | 1.15             | 1.52 | 2.00  | 2.35  | 2.89  | 3.30  | 3.81  | 200                                     | 410          |
|             | 490.603      | ●                    | ●     |          | CC       | CE <sup>1</sup> |          |          |        | 2.00                 | 2.00                                 | 1.81             | 2.39 | 3.15  | 3.70  | 4.54  | 5.20  | 6.00  | 200                                     | 410          |
|             | 490.643      | ●                    | ●     |          | CC       | CE <sup>1</sup> |          |          |        | 2.45                 | 2.45                                 | 2.30             | 3.03 | 4.00  | 4.70  | 5.77  | 6.60  | 7.61  | 200                                     | 410          |
|             | 490.683      |                      | ●     |          |          | CE              |          |          |        | 2.55                 | 2.55                                 | 2.87             | 3.79 | 5.00  | 5.88  | 7.21  | 8.25  | 9.52  | 210                                     | 410          |
|             | 490.703      |                      | ●     |          |          | CE              |          |          |        | 2.65                 | 2.65                                 | 3.22             | 4.24 | 5.60  | 6.59  | 8.08  | 9.24  | 10.66 | 210                                     | 420          |
|             | 490.723      | ●                    | ●     |          |          | CE              |          |          |        | 2.85                 | 2.85                                 | 3.62             | 4.77 | 6.30  | 7.41  | 9.09  | 10.40 | 11.99 | 210                                     | 420          |
|             | 490.783      |                      | ●     |          |          |                 | CG       |          |        | 3.45                 | 3.45                                 | 5.17             | 6.82 | 9.00  | 10.58 | 12.98 | 14.85 | 17.13 | 210                                     | 430          |
|             | 490.843      |                      | ●     |          |          |                 | CG       |          |        | 3.80                 | 3.80                                 | 7.18             | 9.47 | 12.50 | 14.70 | 18.03 | 20.63 | 23.80 | 220                                     | 430          |

<sup>1</sup> Only available in material 30.



| Spray<br>angle | Ordering no. |          |    |          |          |          |          |          |        | Bore<br>diameter<br>B<br>[mm] | Narrowest<br>free cross<br>sections<br>Ø<br>[mm] | V water [l/min] |       |       |       |        |        |        | Spray<br>diameter D<br>[mm]<br>(at p = 2 bar)                                       |                    |                    |
|----------------|--------------|----------|----|----------|----------|----------|----------|----------|--------|-------------------------------|--------------------------------------------------|-----------------|-------|-------|-------|--------|--------|--------|-------------------------------------------------------------------------------------|--------------------|--------------------|
|                | Type         | Mat. no. |    | Code     |          |          |          |          |        |                               |                                                  | p [bar]         |       |       |       |        |        |        |  | H =<br>250<br>[mm] | H =<br>500<br>[mm] |
|                |              | 1Y       | 30 | 1/8 BSPT | 1/4 BSPT | 3/8 BSPT | 1/2 BSPT | 3/4 BSPP | 1 BSPP |                               |                                                  | 0.5             | 1.0   | 2.0   | 3.0   | 5.0    | 7.0    | 10.0   |                                                                                     |                    |                    |
|                |              |          |    |          |          |          |          |          |        |                               |                                                  |                 |       |       |       |        |        |        |                                                                                     |                    |                    |
| 60°            | 490.404      | ●        | ●  | CA       |          |          |          |          |        | 1.15                          | 1.15                                             | 0.57            | 0.76  | 1.00  | 1.18  | 1.44   | 1.65   | 1.90   | 260                                                                                 | 520                |                    |
|                | 490.444      | ●        |    | CA       |          |          |          |          |        | 1.25                          | 1.25                                             | 0.72            | 0.95  | 1.25  | 1.47  | 1.80   | 2.06   | 2.38   | 260                                                                                 | 520                |                    |
|                | 490.484      | ●        | ●  | CA       |          |          |          |          |        | 1.45                          | 1.45                                             | 0.92            | 1.21  | 1.60  | 1.88  | 2.31   | 2.64   | 3.05   | 260                                                                                 | 520                |                    |
|                | 490.524      | ●        | ●  | CA       |          |          |          |          |        | 1.60                          | 1.60                                             | 1.15            | 1.52  | 2.00  | 2.35  | 2.89   | 3.30   | 3.81   | 270                                                                                 | 530                |                    |
|                | 490.564      | ●        | ●  | CA       |          |          |          |          |        | 1.80                          | 1.80                                             | 1.44            | 1.89  | 2.50  | 2.94  | 3.61   | 4.13   | 4.76   | 270                                                                                 | 530                |                    |
|                | 490.604      | ●        | ●  | CA       | CC       | CE       |          |          |        | 2.05                          | 2.05                                             | 1.81            | 2.39  | 3.15  | 3.70  | 4.54   | 5.20   | 6.00   | 270                                                                                 | 540                |                    |
|                | 490.644      | ●        | ●  |          | CC       | CE       |          |          |        | 2.30                          | 2.30                                             | 2.30            | 3.03  | 4.00  | 4.70  | 5.77   | 6.60   | 7.61   | 270                                                                                 | 540                |                    |
|                | 490.684      | ●        | ●  |          | CC       | CE       |          |          |        | 2.60                          | 2.60                                             | 2.87            | 3.79  | 5.00  | 5.88  | 7.21   | 8.25   | 9.52   | 280                                                                                 | 550                |                    |
|                | 490.724      | ●        | ●  |          | CC       | CE       |          |          |        | 2.95                          | 2.80                                             | 3.62            | 4.77  | 6.30  | 7.41  | 9.09   | 10.40  | 11.99  | 280                                                                                 | 560                |                    |
|                | 490.764      | ●        | ●  |          |          | CE       |          |          |        | 3.25                          | 3.25                                             | 4.59            | 6.06  | 8.00  | 9.41  | 11.54  | 13.20  | 15.23  | 290                                                                                 | 560                |                    |
|                | 490.804      | ●        | ●  |          |          | CE       |          |          |        | 3.70                          | 3.70                                             | 5.74            | 7.58  | 10.00 | 11.76 | 14.43  | 16.51  | 19.04  | 290                                                                                 | 570                |                    |
|                | 490.844      | ●        | ●  |          |          |          | CG       |          |        | 4.05                          | 4.05                                             | 7.18            | 9.47  | 12.50 | 14.70 | 18.03  | 20.63  | 23.80  | 290                                                                                 | 570                |                    |
|                | 490.884      | ●        | ●  |          |          |          | CG       |          |        | 4.65                          | 4.65                                             | 9.19            | 12.13 | 16.00 | 18.82 | 23.08  | 26.41  | 30.46  | 300                                                                                 | 580                |                    |
|                | 490.924      | ●        | ●  |          |          |          |          | AK       |        | 5.20                          | 5.20                                             | 11.49           | 15.16 | 20.00 | 23.52 | 28.85  | 33.01  | 38.07  | 300                                                                                 | 590                |                    |
|                | 490.964      | ●        | ●  |          |          |          |          | AK       |        | 5.80                          | 5.80                                             | 14.36           | 18.95 | 25.00 | 29.40 | 36.07  | 41.26  | 47.59  | 300                                                                                 | 590                |                    |
|                | 491.044      | ●        | ●  |          |          |          |          |          | AM     | 7.25                          | 7.25                                             | 22.97           | 30.31 | 40.00 | 47.04 | 57.71  | 66.02  | 76.15  | 300                                                                                 | 600                |                    |
|                | 491.084      | ●        | ●  |          |          |          |          |          | AM     | 8.15                          | 8.15                                             | 28.72           | 37.89 | 50.00 | 58.80 | 72.13  | 82.53  | 95.18  | 300                                                                                 | 600                |                    |
| 90°            | 490.406      | ●        | ●  | CA       |          |          |          |          |        | 1.20                          | 1.20                                             | 0.57            | 0.76  | 1.00  | 1.18  | 1.44   | 1.65   | 1.90   | 490                                                                                 | 880                |                    |
|                | 490.446      |          | ●  | CA       |          |          |          |          |        | 1.30                          | 1.30                                             | 0.72            | 0.95  | 1.25  | 1.47  | 1.80   | 2.06   | 2.38   | 490                                                                                 | 900                |                    |
|                | 490.486      | ●        | ●  | CA       |          |          |          |          |        | 1.45                          | 1.45                                             | 0.92            | 1.21  | 1.60  | 1.88  | 2.31   | 2.64   | 3.05   | 500                                                                                 | 900                |                    |
|                | 490.526      | ●        | ●  | CA       |          |          |          |          |        | 1.70                          | 1.55                                             | 1.15            | 1.52  | 2.00  | 2.35  | 2.89   | 3.30   | 3.81   | 500                                                                                 | 910                |                    |
|                | 490.566      | ●        | ●  | CA       |          |          |          |          |        | 1.90                          | 1.90                                             | 1.44            | 1.89  | 2.50  | 2.94  | 3.61   | 4.13   | 4.76   | 510                                                                                 | 920                |                    |
|                | 490.606      | ●        | ●  | CA       |          | CE       |          |          |        | 2.10                          | 2.05                                             | 1.81            | 2.39  | 3.15  | 3.70  | 4.54   | 5.20   | 6.00   | 510                                                                                 | 930                |                    |
|                | 490.646      | ●        | ●  |          | CC       | CE       |          |          |        | 2.40                          | 2.40                                             | 2.30            | 3.03  | 4.00  | 4.70  | 5.77   | 6.60   | 7.61   | 520                                                                                 | 950                |                    |
|                | 490.686      | ●        | ●  |          | CC       | CE       |          |          |        | 2.70                          | 2.70                                             | 2.87            | 3.79  | 5.00  | 5.88  | 7.21   | 8.25   | 9.52   | 520                                                                                 | 960                |                    |
|                | 490.726      | ●        | ●  |          | CC       | CE       |          |          |        | 3.20                          | 2.80                                             | 3.62            | 4.77  | 6.30  | 7.41  | 9.09   | 10.40  | 11.99  | 530                                                                                 | 970                |                    |
|                | 490.746      | ●        | ●  |          |          | CE       |          |          |        | 3.15                          | 3.15                                             | 4.08            | 5.38  | 7.10  | 8.35  | 10.24  | 11.72  | 13.52  | 530                                                                                 | 980                |                    |
|                | 490.766      | ●        | ●  |          |          | CE       |          |          |        | 3.40                          | 3.40                                             | 4.59            | 6.06  | 8.00  | 9.41  | 11.54  | 13.20  | 15.23  | 540                                                                                 | 980                |                    |
|                | 490.806      | ●        | ●  |          |          | CE       |          |          |        | 3.90                          | 3.90                                             | 5.74            | 7.58  | 10.00 | 11.76 | 14.43  | 16.51  | 19.04  | 550                                                                                 | 990                |                    |
|                | 490.846      | ●        | ●  |          |          | CE       |          |          |        | 4.65                          | 4.00                                             | 7.18            | 9.47  | 12.50 | 14.70 | 18.03  | 20.63  | 23.80  | 550                                                                                 | 1,000              |                    |
|                | 490.886      | ●        | ●  |          |          |          | CG       |          |        | 5.45                          | 4.50                                             | 9.19            | 12.13 | 16.00 | 18.82 | 23.08  | 26.41  | 30.46  | 550                                                                                 | 1,010              |                    |
|                | 490.926      | ●        | ●  |          |          |          | CG       |          |        | 5.90                          | 4.50                                             | 11.49           | 15.16 | 20.00 | 23.52 | 28.85  | 33.01  | 38.07  | 560                                                                                 | 1,010              |                    |
|                | 490.966      | ●        | ●  |          |          |          | CG       | AK       |        | 6.55                          | 4.85                                             | 14.36           | 18.95 | 25.00 | 29.40 | 36.07  | 41.26  | 47.59  | 560                                                                                 | 1,020              |                    |
|                | 491.006      | ●        | ●  |          |          |          |          | AK       |        | 7.55                          | 5.50                                             | 18.09           | 23.87 | 31.50 | 37.05 | 45.45  | 51.99  | 59.97  | 560                                                                                 | 1,030              |                    |
|                | 491.046      | ●        | ●  |          |          |          |          | AK       |        | 8.60                          | 6.60                                             | 22.97           | 30.31 | 40.00 | 47.04 | 57.71  | 66.02  | 76.15  | 560                                                                                 | 1,040              |                    |
|                | 491.086      | ●        | ●  |          |          |          |          |          | AM     | 9.45                          | 7.25                                             | 28.72           | 37.89 | 50.00 | 58.80 | 72.13  | 82.53  | 95.18  | 560                                                                                 | 1,040              |                    |
|                | 491.126      | ●        | ●  |          |          |          |          |          | AM     | 10.40                         | 8.00                                             | 36.18           | 47.75 | 63.00 | 74.09 | 90.89  | 103.98 | 119.93 | 560                                                                                 | 1,040              |                    |
|                | 491.146      | ●        |    |          |          |          |          |          | AM     | 11.00                         | 7.50                                             | 40.78           | 53.81 | 71.00 | 83.50 | 102.43 | 117.19 | 135.16 | 560                                                                                 | 1,040              |                    |
| 120°           | 490.368      | ●        | ●  | CA       |          |          |          |          |        | 0.85                          | 0.65                                             | 0.36            | 0.48  | 0.63  | 0.74  | 0.91   | 1.04   | 1.20   | 700                                                                                 | 1,240              |                    |
|                | 490.408      | ●        | ●  | CA       |          |          |          |          |        | 1.20                          | 1.20                                             | 0.57            | 0.76  | 1.00  | 1.18  | 1.44   | 1.65   | 1.90   | 720                                                                                 | 1,260              |                    |
|                | 490.448      | ●        | ●  | CA       |          |          |          |          |        | 1.30                          | 1.30                                             | 0.72            | 0.95  | 1.25  | 1.47  | 1.80   | 2.06   | 2.38   | 740                                                                                 | 1,280              |                    |
|                | 490.488      | ●        | ●  | CA       |          |          |          |          |        | 1.45                          | 1.45                                             | 0.92            | 1.21  | 1.60  | 1.88  | 2.31   | 2.64   | 3.05   | 760                                                                                 | 1,300              |                    |
|                | 490.528      | ●        | ●  | CA       |          |          |          |          |        | 1.70                          | 1.70                                             | 1.15            | 1.52  | 2.00  | 2.35  | 2.89   | 3.30   | 3.81   | 780                                                                                 | 1,320              |                    |
|                | 490.568      | ●        | ●  | CA       |          |          |          |          |        | 1.90                          | 1.90                                             | 1.44            | 1.89  | 2.50  | 2.94  | 3.61   | 4.13   | 4.76   | 800                                                                                 | 1,340              |                    |





| Spray<br>angle | Ordering no. |                      |       |          |          |          |          |          | Bore<br>diameter<br>B<br>[mm] | Narrowest<br>free cross<br>sections<br>Ø<br>[mm] | V̇ water [l/min] |       |       |       |       |                    |                    |        | Spray<br>diameter D<br>[mm]<br>(at p = 2 bar)<br> |       |        |
|----------------|--------------|----------------------|-------|----------|----------|----------|----------|----------|-------------------------------|--------------------------------------------------|------------------|-------|-------|-------|-------|--------------------|--------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------|-------|--------|
|                | Type         | Mat. no.             |       | Code     |          |          |          |          |                               |                                                  | p [bar]          |       |       |       |       |                    |                    |        |                                                                                                                                      |       |        |
|                |              | 1Y                   | 30    | 1/8 BSPT | 1/4 BSPT | 3/8 BSPT | 1/2 BSPT | 3/4 BSPP |                               |                                                  |                  |       |       |       |       |                    |                    |        |                                                                                                                                      |       | 1 BSPP |
|                |              | Stainless steel 316L | Brass |          |          |          |          |          |                               |                                                  |                  |       |       |       |       |                    |                    |        |                                                                                                                                      |       |        |
|                |              | 0.5                  | 1.0   |          |          |          |          |          |                               |                                                  | 2.0              | 3.0   | 5.0   | 7.0   | 10.0  | H =<br>250<br>[mm] | H =<br>500<br>[mm] |        |                                                                                                                                      |       |        |
| 120°           | 490.608      | ●                    | ●     | CA       |          |          |          |          | 2.10                          | 2.05                                             | 1.81             | 2.39  | 3.15  | 3.70  | 4.54  | 5.20               | 6.00               | 820    | 1,370                                                                                                                                |       |        |
|                | 490.648      | ●                    | ●     |          | CC       | CE       |          |          | 2.40                          | 2.40                                             | 2.30             | 3.03  | 4.00  | 4.70  | 5.77  | 6.60               | 7.61               | 840    | 1,400                                                                                                                                |       |        |
|                | 490.688      | ●                    | ●     |          | CC       | CE       |          |          | 2.75                          | 2.75                                             | 2.87             | 3.79  | 5.00  | 5.88  | 7.21  | 8.25               | 9.52               | 850    | 1,430                                                                                                                                |       |        |
|                | 490.728      | ●                    | ●     |          | CC       | CE       |          |          | 3.20                          | 2.80                                             | 3.62             | 4.77  | 6.30  | 7.41  | 9.09  | 10.40              | 11.99              | 860    | 1,470                                                                                                                                |       |        |
|                | 490.748      | ●                    | ●     |          |          | CE       |          |          | 3.20                          | 3.20                                             | 4.08             | 5.38  | 7.10  | 8.35  | 10.24 | 11.72              | 13.52              | 870    | 1,500                                                                                                                                |       |        |
|                | 490.768      | ●                    | ●     |          |          | CE       |          |          | 3.45                          | 3.45                                             | 4.59             | 6.06  | 8.00  | 9.41  | 11.54 | 13.20              | 15.23              | 880    | 1,530                                                                                                                                |       |        |
|                | 490.808      | ●                    | ●     |          |          | CE       |          |          | 3.90                          | 3.90                                             | 5.74             | 7.58  | 10.00 | 11.76 | 14.43 | 16.51              | 19.04              | 900    | 1,580                                                                                                                                |       |        |
|                | 490.848      | ●                    | ●     |          |          | CE       |          |          | 4.70                          | 4.00                                             | 7.18             | 9.47  | 12.50 | 14.70 | 18.03 | 20.63              | 23.80              | 910    | 1,630                                                                                                                                |       |        |
|                | 490.888      | ●                    | ●     |          |          |          | CG       |          | 5.10                          | 4.50                                             | 9.19             | 12.13 | 16.00 | 18.82 | 23.08 | 26.41              | 30.46              | 920    | 1,680                                                                                                                                |       |        |
|                | 490.928      | ●                    | ●     |          |          |          | CG       |          | 5.80                          | 4.75                                             | 11.49            | 15.16 | 20.00 | 23.52 | 28.85 | 33.01              | 38.07              | 930    | 1,700                                                                                                                                |       |        |
|                | 490.968      | ●                    | ●     |          |          |          | CG       | AK       | 6.65                          | 4.85                                             | 14.36            | 18.95 | 25.00 | 29.40 | 36.07 | 41.26              | 47.59              | 930    | 1,710                                                                                                                                |       |        |
|                | 491.048      | ●                    | ●     |          |          |          |          | AK       | 9.10                          | 5.85                                             | 22.97            | 30.31 | 40.00 | 47.04 | 57.71 | 66.02              | 76.15              | 930    | 1,730                                                                                                                                |       |        |
|                | 491.128      | ●                    | ●     |          |          |          |          |          | AM                            | 10.80                                            | 7.75             | 36.18 | 47.75 | 63.00 | 74.09 | 90.89              | 103.98             | 119.93 | 930                                                                                                                                  | 1,740 |        |
|                | 491.148      | ●                    |       |          |          |          |          |          | AM                            | 11.40                                            | 7.65             | 40.78 | 53.81 | 71.00 | 83.50 | 102.43             | 117.19             | 135.16 | 930                                                                                                                                  | 1,750 |        |

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

|          |         |   |              |   |      |   |               |
|----------|---------|---|--------------|---|------|---|---------------|
| Ordering | Type    | + | Material no. | + | Code | = | Ordering no.  |
| example: | 490.608 | + | 1Y           | + | CA   | = | 490.608.1Y.CA |

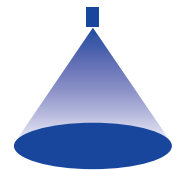


Assembly accessories can be found in Chapter 9 “Accessories”.



# Axiální trysky s rozstříkem plného kužele

## Series 460/461



### Features:

- Extremely uniform liquid distribution

### Applications:

- Cleaning and washing processes
- Cooling
- Surface spraying
- Chemical process engineering



Series 460/461

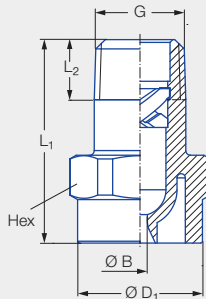


Figure 1

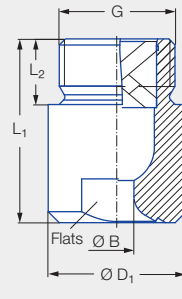


Figure 2

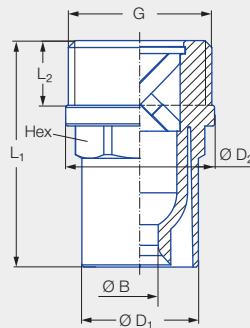


Figure 3

| Code | Figure | G        | Dimensions [mm] |                |                  |                  |           | Weight [g] |
|------|--------|----------|-----------------|----------------|------------------|------------------|-----------|------------|
|      |        |          | L <sub>1</sub>  | L <sub>2</sub> | Ø D <sub>1</sub> | Ø D <sub>2</sub> | Hex/Flats |            |
| CA   | 1      | 1/8 BSPT | 22.0            | 6.5            | 13.0             | –                | 14        | 2.7        |
| CC   | 1      | 1/4 BSPT | 22.0            | 9.7            | 13.0             | –                | 14        | 3.3        |
| CE   | 1      | 3/8 BSPT | 30.0            | 10.0           | 17.0             | –                | 17        | 6.4        |
| CG   | 1      | 1/2 BSPT | 43.5            | 13.2           | 22.0             | –                | 22        | 14.5       |
| CK   | 2      | 3/4 BSPT | 42.0            | 15.0           | 31.5             | –                | 27        | 19.9       |
| AK   | 2      | 3/4 BSPP | 42.0            | 15.0           | 31.5             | –                | 27        | 24.3       |
| AM   | 3      | 1 BSPP   | 52.5            | 15.0           | 27.0             | 34.5             | 27        | 34.4       |

| Spray angle | Ordering no. |          |          |          |          |          |          |          | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | V̇ water [l/min] |      |       |       |       |       |       | Spray diameter D [mm]<br>(at p = 2 bar)                                               |              |              |      |
|-------------|--------------|----------|----------|----------|----------|----------|----------|----------|----------------------|--------------------------------------|------------------|------|-------|-------|-------|-------|-------|---------------------------------------------------------------------------------------|--------------|--------------|------|
|             | Type         | Mat. no. | Code     |          |          |          |          |          |                      |                                      | p [bar]          |      |       |       |       |       |       |  | H = 250 [mm] | H = 500 [mm] |      |
|             |              | 5E       | 1/8 BSPT | 1/4 BSPT | 3/8 BSPT | 1/2 BSPT | 3/4 BSPT | 3/4 BSPP |                      |                                      | 1 BSPP           | 0.5  | 1.0   | 2.0   | 3.0   | 5.0   | 7.0   |                                                                                       |              |              | 10.0 |
|             |              | PVDF     |          |          |          |          |          |          |                      |                                      |                  |      |       |       |       |       |       |                                                                                       |              |              |      |
| 60°         | 460.524      | ●        | CA       |          |          |          |          |          |                      | 1.60                                 | 1.60             | 1.15 | 1.52  | 2.00  | 2.35  | 2.89  | 3.30  | 3.81                                                                                  | 210          | 380          |      |
|             | 460.644      | ●        |          | CC       |          |          |          |          |                      | 2.40                                 | 1.90             | 2.30 | 3.03  | 4.00  | 4.70  | 5.77  | 6.60  | 7.61                                                                                  | 240          | 420          |      |
|             | 460.724      | ●        |          | CC       |          |          |          |          |                      | 2.80                                 | 2.10             | 3.15 | 4.45  | 6.30  | 7.72  | 8.91  | 9.96  | 14.09                                                                                 | 260          | 450          |      |
|             | 460.964      | ●        |          |          |          |          |          |          | AK                   |                                      | 5.80             | 4.90 | 14.36 | 18.95 | 25.00 | 29.40 | 36.07 | 41.26                                                                                 | 47.59        | 310          | 560  |





| Spray<br>angle | Ordering no. |                |          |          |          |          |          |          |        | Bore<br>diameter<br>B<br>[mm] | Narrow-<br>est free<br>cross<br>sections<br>Ø<br>[mm] | V̇ water [l/min] |       |       |       |       |       |        | Spray<br>diameter D<br>[mm]<br>(at p = 2 bar)<br> |       |
|----------------|--------------|----------------|----------|----------|----------|----------|----------|----------|--------|-------------------------------|-------------------------------------------------------|------------------|-------|-------|-------|-------|-------|--------|--------------------------------------------------------------------------------------------------------------------------------------|-------|
|                | Type         | Mat.<br>no.    | Code     |          |          |          |          |          |        |                               |                                                       | p [bar]          |       |       |       |       |       |        |                                                                                                                                      |       |
|                |              | 5E             | 1/8 BSPT | 1/4 BSPT | 3/8 BSPT | 1/2 BSPT | 3/4 BSPT | 3/4 BSPP | 1 BSPP |                               |                                                       | 0.5              | 1.0   | 2.0   | 3.0   | 5.0   | 7.0   | 10.0   |                                                                                                                                      |       |
|                |              | PVDF           |          |          |          |          |          |          |        |                               |                                                       |                  |       |       |       |       |       |        |                                                                                                                                      |       |
| 90°            | 460.326      | ●              | CA       |          |          |          |          |          |        | 0.80                          | 0.55                                                  | 0.23             | 0.30  | 0.40  | 0.47  | 0.58  | 0.66  | 0.76   | 430                                                                                                                                  | 750   |
|                | 460.406      | ●              | CA       |          |          |          |          |          |        | 1.20                          | 0.85                                                  | 0.57             | 0.76  | 1.00  | 1.18  | 1.44  | 1.65  | 1.90   | 440                                                                                                                                  | 780   |
|                | 460.486      | ●              | CA       |          |          |          |          |          |        | 1.45                          | 1.20                                                  | 0.92             | 1.21  | 1.60  | 1.88  | 2.31  | 2.64  | 3.05   | 450                                                                                                                                  | 800   |
|                | 460.526      | ●              | CA       |          |          |          |          |          |        | 1.65                          | 1.30                                                  | 1.15             | 1.52  | 2.00  | 2.35  | 2.89  | 3.30  | 3.81   | 450                                                                                                                                  | 820   |
|                | 460.606      | ●              | CA       |          | CE       |          |          |          |        | 2.05                          | 1.45                                                  | 1.81             | 2.39  | 3.15  | 3.70  | 4.54  | 5.20  | 6.00   | 470                                                                                                                                  | 850   |
|                | 460.646      | ●              |          | CC       |          |          |          |          |        | 2.30                          | 1.80                                                  | 2.30             | 3.03  | 4.00  | 4.70  | 5.77  | 6.60  | 7.61   | 480                                                                                                                                  | 870   |
|                | 460.726      | ●              |          |          | CE       |          |          |          |        | 2.95                          | 2.00                                                  | 3.62             | 4.77  | 6.30  | 7.41  | 9.09  | 10.40 | 11.99  | 500                                                                                                                                  | 900   |
|                | 460.746      | ●              |          |          | CE       |          |          |          |        | 3.30                          | 1.90                                                  | 4.08             | 5.38  | 7.10  | 8.35  | 10.24 | 11.72 | 13.52  | 510                                                                                                                                  | 910   |
|                | 460.766      | ●              |          |          | CE       |          |          |          |        | 3.30                          | 2.40                                                  | 4.59             | 6.06  | 8.00  | 9.41  | 11.54 | 13.20 | 15.23  | 510                                                                                                                                  | 910   |
|                | 460.806      | ●              |          |          | CE       |          |          |          |        | 3.70                          | 2.70                                                  | 5.74             | 7.58  | 10.00 | 11.76 | 14.43 | 16.51 | 19.04  | 520                                                                                                                                  | 920   |
|                | 460.846      | ●              |          |          | CE       |          |          |          |        | 4.05                          | 3.20                                                  | 7.18             | 9.47  | 12.50 | 14.70 | 18.03 | 20.63 | 23.80  | 520                                                                                                                                  | 930   |
|                | 460.886      | ●              |          |          | CE       | CG       |          |          |        | 4.70                          | 3.10                                                  | 9.19             | 12.13 | 16.00 | 18.82 | 23.08 | 26.41 | 30.46  | 520                                                                                                                                  | 930   |
|                | 460.926      | ●              |          |          |          | CG       |          |          |        | 5.10                          | 2.80                                                  | 11.49            | 15.16 | 20.00 | 23.52 | 28.85 | 33.01 | 38.07  | 520                                                                                                                                  | 940   |
|                | 460.966      | ●              |          |          |          | CG       |          |          |        | 5.80                          | 3.80                                                  | 14.36            | 18.95 | 25.00 | 29.40 | 36.07 | 41.26 | 47.59  | 520                                                                                                                                  | 940   |
|                | 461.006      | ●              |          |          |          | CG       |          |          |        | 6.40                          | 3.80                                                  | 18.09            | 23.87 | 31.50 | 37.05 | 45.45 | 51.99 | 59.97  | 520                                                                                                                                  | 940   |
|                | 461.046      | ●              |          |          |          |          | CK       |          |        | 7.20                          | 5.30                                                  | 22.97            | 30.31 | 40.00 | 47.04 | 57.71 | 66.02 | 76.15  | 520                                                                                                                                  | 950   |
|                | 461.086      | ●              |          |          |          |          |          | AM       |        | 8.40                          | 5.00                                                  | 25.00            | 35.36 | 50.00 | 61.24 | 70.71 | 79.06 | 111.80 | 530                                                                                                                                  | 950   |
| 120°           | 460.368      | ●              | CA       |          |          |          |          |          |        | 0.95                          | 0.65                                                  | 0.32             | 0.45  | 0.63  | 0.77  | 0.89  | 1.00  | 1.41   | 650                                                                                                                                  | 1,030 |
|                | 460.408      | ●              | CA       |          |          |          |          |          |        | 1.20                          | 0.85                                                  | 0.57             | 0.76  | 1.00  | 1.18  | 1.44  | 1.65  | 1.90   | 680                                                                                                                                  | 1,100 |
|                | 460.488      | ●              | CA       |          |          |          |          |          |        | 1.50                          | 1.00                                                  | 0.92             | 1.21  | 1.60  | 1.88  | 2.31  | 2.64  | 3.05   | 700                                                                                                                                  | 1,160 |
|                | 460.528      | ●              | CA       |          |          |          |          |          |        | 1.65                          | 1.20                                                  | 1.15             | 1.52  | 2.00  | 2.35  | 2.89  | 3.30  | 3.81   | 710                                                                                                                                  | 1,200 |
|                | 460.608      | ●              | CA       |          |          |          |          |          |        | 2.10                          | 1.40                                                  | 1.81             | 2.39  | 3.15  | 3.70  | 4.54  | 5.20  | 6.00   | 730                                                                                                                                  | 1,270 |
|                | 460.648      | ●              |          | CC       |          |          |          |          |        | 2.45                          | 1.60                                                  | 2.30             | 3.03  | 4.00  | 4.70  | 5.77  | 6.60  | 7.61   | 750                                                                                                                                  | 1,310 |
|                | 460.728      | ●              |          |          | CE       |          |          |          |        | 3.10                          | 1.90                                                  | 3.62             | 4.77  | 6.30  | 7.41  | 9.09  | 10.40 | 11.99  | 780                                                                                                                                  | 1,380 |
|                | 460.748      | ●              |          |          | CE       |          |          |          |        | 3.30                          | 1.90                                                  | 4.08             | 5.38  | 7.10  | 8.35  | 10.24 | 11.72 | 13.52  | 790                                                                                                                                  | 1,400 |
|                | 460.768      | ●              |          |          | CE       |          |          |          |        | 3.50                          | 1.90                                                  | 4.59             | 6.06  | 8.00  | 9.41  | 11.54 | 13.20 | 15.23  | 790                                                                                                                                  | 1,410 |
|                | 460.808      | ●              |          |          | CE       |          |          |          |        | 3.80                          | 2.40                                                  | 5.74             | 7.58  | 10.00 | 11.76 | 14.43 | 16.51 | 19.04  | 810                                                                                                                                  | 1,430 |
|                | 460.848      | ●              |          |          | CE       |          |          |          |        | 4.20                          | 2.70                                                  | 7.18             | 9.47  | 12.50 | 14.70 | 18.03 | 20.63 | 23.80  | 820                                                                                                                                  | 1,450 |
|                | 460.888      | ●              |          |          |          | CG       |          |          |        | 4.60                          | 3.10                                                  | 9.19             | 12.13 | 16.00 | 18.82 | 23.08 | 26.41 | 30.46  | 830                                                                                                                                  | 1,470 |
|                | 460.968      | ●              |          |          |          | CG       |          |          |        | 5.90                          | 4.10                                                  | 14.36            | 18.95 | 25.00 | 29.40 | 36.07 | 41.26 | 47.59  | 850                                                                                                                                  | 1,500 |
|                | 461.048      | ● <sup>1</sup> |          |          |          |          | CK       |          |        | 7.60                          | 4.90                                                  | 22.97            | 30.31 | 40.00 | 47.04 | 57.71 | 66.02 | 76.15  | 870                                                                                                                                  | 1,530 |

<sup>1</sup> Material PP (mat. no. 53).

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

|          |         |   |              |   |      |   |               |
|----------|---------|---|--------------|---|------|---|---------------|
| Ordering | Type    | + | Material no. | + | Code | = | Ordering no.  |
| example: | 460.326 | + | 5E           | + | CA   | = | 460.326.5E.CA |

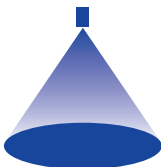


Assembly accessories can be found in Chapter 9 “Accessories”.



# Axiální trysky s rozstříkem plného kužele

## Series 405

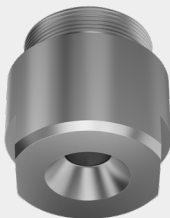


### Features:

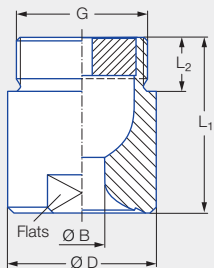
- Extremely uniform liquid distribution

### Applications:

- Surface spraying
- Chemical process engineering
- Cleaning and washing processes
- Water treatment



Series 405



| Code | G          | Dimensions [mm] |                |      |       | Weight [kg] (brass) |
|------|------------|-----------------|----------------|------|-------|---------------------|
|      |            | L <sub>1</sub>  | L <sub>2</sub> | Ø D  | Flats |                     |
| AP   | 1 1/4 BSPP | 50.0            | 19.0           | 49.0 | 41    | 0.5                 |
| AR   | 1 1/2 BSPP | 60.0            | 19.0           | 59.0 | 50    | 0.9                 |
| AV   | 2 BSPP     | 78.0            | 24.0           | 68.0 | 60    | 1.6                 |

| Spray angle | Ordering no. |          |    |            |            |        | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | V̇ water [l/min] |     |     |     |     |     | Spray diameter D [mm]<br>(at p = 2 bar)<br> |       |
|-------------|--------------|----------|----|------------|------------|--------|----------------------|--------------------------------------|------------------|-----|-----|-----|-----|-----|----------------------------------------------------------------------------------------------------------------------------------|-------|
|             | Type         | Mat. no. |    | Code       |            |        |                      |                                      | p [bar]          |     |     |     |     |     |                                                                                                                                  |       |
|             |              | 1Y       | 30 | 1 1/4 BSPP | 1 1/2 BSPP | 2 BSPP |                      |                                      | 0.3              | 0.5 | 1.0 | 2.0 | 3.0 | 5.0 |                                                                                                                                  |       |
|             |              |          |    |            |            |        |                      |                                      |                  |     |     |     |     |     |                                                                                                                                  |       |
| 60°         | 405.204      | ●        | ●  | AP         |            |        | 11.2                 | 5.8                                  | 47               | 57  | 76  | 100 | 118 | 144 | 600                                                                                                                              | 1,140 |
|             | 405.284      | ●        | ●  |            | AR         |        | 14.3                 | 7.0                                  | 75               | 92  | 121 | 160 | 188 | 231 | 630                                                                                                                              | 1,210 |
|             | 405.324      | ●        | ●  |            |            | AV     | 16.4                 | 7.5                                  | 94               | 115 | 152 | 200 | 235 | 289 | 650                                                                                                                              | 1,250 |
|             | 405.364      | ●        | ●  |            |            | AV     | 18.4                 | 8.5                                  | 117              | 144 | 189 | 250 | 294 | 361 | 650                                                                                                                              | 1,250 |
|             | 405.404      | ●        |    |            |            | AV     | 20.0                 | 7.0                                  | 147              | 181 | 239 | 315 | 370 | 454 | 650                                                                                                                              | 1,250 |
| 90°         | 405.206      | ●        | ●  | AP         |            |        | 12.0                 | 5.0                                  | 47               | 57  | 76  | 100 | 118 | 144 | 1,120                                                                                                                            | 2,100 |
|             | 405.286      | ●        | ●  |            | AR         |        | 15.2                 | 6.2                                  | 75               | 92  | 121 | 160 | 188 | 231 | 1,120                                                                                                                            | 2,100 |
|             | 405.326      | ●        |    |            |            | AV     | 17.2                 | 7.7                                  | 94               | 115 | 152 | 200 | 235 | 289 | 1,120                                                                                                                            | 2,100 |
|             | 405.366      | ●        |    |            |            | AV     | 19.5                 | 8.7                                  | 117              | 144 | 189 | 250 | 294 | 361 | 1,120                                                                                                                            | 2,100 |
|             | 405.406      | ●        | ●  |            |            | AV     | 22.0                 | 9.5                                  | 147              | 181 | 239 | 315 | 370 | 454 | 1,120                                                                                                                            | 2,100 |
| 120°        | 405.208      | ●        | ●  | AP         |            |        | 12.7                 | 5.0                                  | 47               | 57  | 76  | 100 | 118 | 144 | 1,850                                                                                                                            | 3,050 |
|             | 405.288      | ●        | ●  |            | AR         |        | 16.0                 | 6.6                                  | 75               | 92  | 121 | 160 | 188 | 231 | 1,900                                                                                                                            | 3,150 |
|             | 405.328      | ●        |    |            |            | AV     | 17.8                 | 7.9                                  | 94               | 115 | 152 | 200 | 235 | 289 | 1,900                                                                                                                            | 3,200 |
|             | 405.368      | ●        | ●  |            |            | AV     | 20.1                 | 8.8                                  | 117              | 144 | 189 | 250 | 294 | 361 | 1,900                                                                                                                            | 3,200 |
|             | 405.408      | ●        | ●  |            |            | AV     | 22.4                 | 9.1                                  | 147              | 181 | 239 | 315 | 370 | 454 | 1,900                                                                                                                            | 3,200 |

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

|          |         |   |              |   |      |   |               |
|----------|---------|---|--------------|---|------|---|---------------|
| Ordering | Type    | + | Material no. | + | Code | = | Ordering no.  |
| example: | 405.204 | + | 1Y           | + | AP   | = | 405.204.1Y.AP |

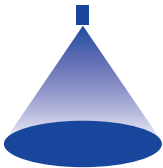


Assembly accessories can be found in Chapter 9 "Accessories".



# Axiální trysky s rozstříkem plného kužele

## Series 403

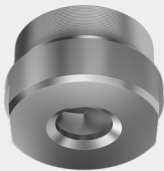


**Features:**

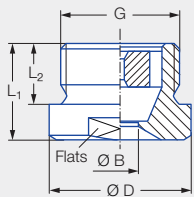
- Extremely uniform liquid distribution

**Applications:**

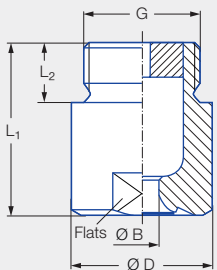
- Surface spraying
- Spraying over packings
- Chemical process engineering
- Cleaning and washing processes
- Cooling



Series 403



90° version



120° version

90° version

| Type            | G          | Dimensions [mm] |                |       |       | Weight [kg] |
|-----------------|------------|-----------------|----------------|-------|-------|-------------|
|                 |            | L <sub>1</sub>  | L <sub>2</sub> | Ø D   | Flats |             |
| 403.446/403.486 | 2 1/2 BSPP | 52.0            | 27.0           | 83.0  | 75    | 1.3         |
| 403.526         | 3 BSPP     | 60.0            | 30.0           | 98.0  | 85    | 2.0         |
| 403.606         | 3 1/2 BSPP | 70.0            | 32.0           | 118.0 | 105   | 3.6         |

120° version

| Type            | G          | Dimensions [mm] |                |       |       | Weight [kg] |
|-----------------|------------|-----------------|----------------|-------|-------|-------------|
|                 |            | L <sub>1</sub>  | L <sub>2</sub> | Ø D   | Flats |             |
| 403.448/403.488 | 2 1/2 BSPP | 124.0           | 27.0           | 83.0  | 75    | 3.2         |
| 403.528         | 3 BSPP     | 153.0           | 30.0           | 98.0  | 85    | 5.4         |
| 403.608         | 3 1/2 BSPP | 156.0           | 32.0           | 118.0 | 105   | 8.3         |
| 403.628         | 4 BSPP     | 165.0           | 36.0           | 128.0 | 110   | 9.6         |

| Spray angle | Ordering no. |                      | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | V̇ water [l/min] |     |     |       |       |       |       | Spray diameter D [mm]<br>(at p = 2 bar)                                               |              |
|-------------|--------------|----------------------|----------------------|--------------------------------------|------------------|-----|-----|-------|-------|-------|-------|---------------------------------------------------------------------------------------|--------------|
|             | Type         | Mat. no.             |                      |                                      | p [bar]          |     |     |       |       |       |       |  |              |
|             |              | 1Y                   |                      |                                      |                  |     |     |       |       |       |       |                                                                                       |              |
|             |              | Stainless steel 316L |                      |                                      | 0.3              | 0.5 | 1.0 | 2.0   | 3.0   | 5.0   | 7.0   |                                                                                       | H = 500 [mm] |
| 90°         | 403.446      | ●                    | 25.0                 | 12.0                                 | 187              | 230 | 303 | 400   | 470   | 577   | 660   | 1,000                                                                                 | 1,780        |
|             | 403.486      | ●                    | 29.5                 | 12.0                                 | 234              | 287 | 379 | 500   | 588   | 721   | 825   | 1,000                                                                                 | 1,780        |
|             | 403.526      | ●                    | 32.0                 | 13.8                                 | 295              | 362 | 477 | 630   | 741   | 909   | 1,040 | 1,000                                                                                 | 1,780        |
|             | 403.606      | ●                    | 40.0                 | 15.0                                 | 468              | 574 | 758 | 1,000 | 1,176 | 1,443 | 1,651 | 1,000                                                                                 | 1,780        |
| 120°        | 403.448      | ●                    | 25.5                 | 10.0                                 | 187              | 230 | 303 | 400   | 470   | 577   | 660   | 1,700                                                                                 | 2,930        |
|             | 403.488      | ●                    | 29.5                 | 11.0                                 | 234              | 287 | 379 | 500   | 588   | 721   | 825   | 1,700                                                                                 | 2,930        |
|             | 403.528      | ●                    | 32.0                 | 15.0                                 | 295              | 362 | 477 | 630   | 741   | 909   | 1,040 | 1,700                                                                                 | 2,930        |
|             | 403.608      | ●                    | 42.0                 | 12.0                                 | 468              | 574 | 758 | 1,000 | 1,176 | 1,443 | 1,651 | 1,700                                                                                 | 2,930        |
|             | 403.628      | ●                    | 45.0                 | 15.0                                 | 585              | 718 | 947 | 1,250 | 1,470 | 1,803 | 2,063 | 1,700                                                                                 | 2,930        |

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

|          |         |   |              |   |              |
|----------|---------|---|--------------|---|--------------|
| Ordering | Type    | + | Material no. | = | Ordering no. |
| example: | 403.446 | + | 1Y           | = | 403.446.1Y   |



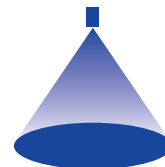
Assembly accessories can be found in Chapter 9 "Accessories".





# Axiální trysky s rozstřikem plného kužele

## Series 419 FreeFlow



### Features:

- Non clogging due to very large free cross sections
- Very stable spray angle
- Uniform liquid distribution

### Applications:

- Cleaning and washing processes
- Dust control
- Absorption
- Distillation

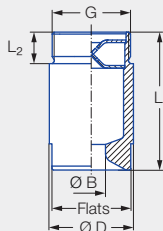


Figure 1

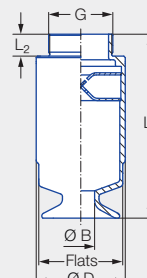


Figure 2

Series 419

| Type    | Code | Figure | G          | Dimensions [mm] |                |       |       | Weight [kg] |
|---------|------|--------|------------|-----------------|----------------|-------|-------|-------------|
|         |      |        |            | L <sub>1</sub>  | L <sub>2</sub> | Ø D   | Flats |             |
| 419.3xx | AV   | 1      | 2 BSPP     | 105.0           | 24.0           | 64.0  | 60    | 1.2         |
| 419.4xx | AV   | 2      | 2 BSPP     | 163.0           | 24.0           | 80.0  | 75    | 2.0         |
| 419.51x | AV   | 2      | 2 BSPP     | 199.0           | 24.0           | 102.0 | 95    | 3.7         |
| 419.51x | AY   | 2      | 2 1/2 BSPP | 202.0           | 27.0           | 102.0 | 95    | 3.8         |
| 419.54x | AY   | 2      | 2 1/2 BSPP | 202.0           | 27.0           | 102.0 | 95    | 3.8         |
| 419.57x | AY   | 2      | 2 1/2 BSPP | 231.0           | 27.0           | 115.0 | 105   | 5.2         |
| 419.57x | LA   | 2      | 3 BSPP     | 233.0           | 30.0           | 115.0 | 105   | 5.2         |
| 419.6xx | LA   | 2      | 3 BSPP     | 252.0           | 30.0           | 122.0 | 115   | 5.4         |

| Spray angle <sup>1</sup> | Ordering no. |                      |        |            |        | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | V̇ water [l/min] |     |       |       |       | Spray diameter D [mm]<br>(at p = 1 bar)                                               |       |
|--------------------------|--------------|----------------------|--------|------------|--------|----------------------|--------------------------------------|------------------|-----|-------|-------|-------|---------------------------------------------------------------------------------------|-------|
|                          | Type         | Mat. no.             | Code   |            |        |                      |                                      | p [bar]          |     |       |       |       |  |       |
|                          |              | 1Y                   | 2 BSPP | 2 1/2 BSPP | 3 BSPP |                      |                                      | 0.3              | 0.5 | 1.0   | 2.0   | 5.0   |                                                                                       |       |
|                          |              | Stainless steel 316L |        |            |        |                      |                                      |                  |     |       |       |       |                                                                                       |       |
| 90°                      | 419.366      | ●                    | AV     |            |        | 19.0                 | 17.5                                 | 117              | 143 | 189   | 249   | 360   | 1,200                                                                                 | 2,200 |
|                          | 419.396      | ●                    | AV     |            |        | 21.2                 | 17.5                                 | 140              | 172 | 227   | 300   | 432   | 1,200                                                                                 | 2,200 |
|                          | 419.446      | ●                    | AV     |            |        | 24.0                 | 20.5                                 | 187              | 230 | 303   | 400   | 577   | 1,200                                                                                 | 2,200 |
|                          | 419.486      | ●                    | AV     |            |        | 29.0                 | 20.5                                 | 234              | 287 | 379   | 500   | 721   | 1,200                                                                                 | 2,200 |
|                          | 419.516      | ●                    | AV     | AY         |        | 29.2                 | 24.1                                 | 281              | 345 | 455   | 600   | 866   | 1,200                                                                                 | 2,200 |
|                          | 419.546      | ●                    |        | AY         |        | 33.0                 | 24.1                                 | 332              | 408 | 538   | 710   | 1,024 | 1,200                                                                                 | 2,200 |
|                          | 419.576      | ●                    |        | AY         | LA     | 35.0                 | 27.2                                 | 398              | 488 | 644   | 850   | 1,226 | 1,200                                                                                 | 2,200 |
|                          | 419.606      | ●                    |        |            | LA     | 37.5                 | 30.1                                 | 468              | 574 | 758   | 1,000 | 1,443 | 1,200                                                                                 | 2,200 |
| 419.626                  | ●            |                      |        | LA         | 43.0   | 30.1                 | 585                                  | 718              | 947 | 1,250 | 1,803 | 1,200 | 2,200                                                                                 |       |
| 120°                     | 419.368      | ●                    | AV     |            |        | 21.0                 | 17.4                                 | 117              | 143 | 189   | 249   | 360   | 1,660                                                                                 | 2,900 |
|                          | 419.398      | ●                    | AV     |            |        | 24.2                 | 17.4                                 | 140              | 172 | 227   | 300   | 432   | 1,660                                                                                 | 2,900 |
|                          | 419.448      | ●                    | AV     |            |        | 24.5                 | 20.5                                 | 187              | 230 | 303   | 400   | 577   | 1,660                                                                                 | 2,900 |
|                          | 419.488      | ●                    | AV     |            |        | 29.5                 | 20.5                                 | 234              | 287 | 379   | 500   | 721   | 1,660                                                                                 | 2,900 |
|                          | 419.518      | ●                    | AV     | AY         |        | 29.2                 | 24.1                                 | 281              | 345 | 455   | 600   | 866   | 1,660                                                                                 | 2,900 |
|                          | 419.548      | ●                    |        | AY         |        | 34.0                 | 24.1                                 | 332              | 408 | 538   | 710   | 1,024 | 1,660                                                                                 | 2,900 |
|                          | 419.578      | ●                    |        | AY         | LA     | 35.0                 | 28.6                                 | 398              | 488 | 644   | 850   | 1,226 | 1,660                                                                                 | 2,900 |
|                          | 419.608      | ●                    |        |            | LA     | 38.0                 | 32.2                                 | 468              | 574 | 758   | 1,000 | 1,443 | 1,660                                                                                 | 2,900 |
| 419.628                  | ●            |                      |        | LA         | 43.5   | 32.2                 | 585                                  | 718              | 947 | 1,250 | 1,803 | 1,660 | 2,900                                                                                 |       |

<sup>1</sup> Spray angle at 1 bar.

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

Ordering Type + Material no. + Code = Ordering no.  
example: 419.366 + 1Y + AV = 419.366.1Y.AV



Assembly accessories can be found in Chapter 9 "Accessories".





» Axiální trysky s rozstříkem plného kužele  
Series 468



Features:

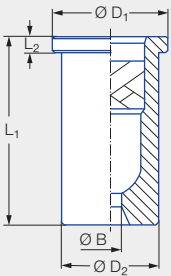
- Extremely uniform liquid distribution
- Assembly with retaining nut

Applications:

- Surface spraying
- Chemical process engineering
- Cleaning and washing processes
- Water treatment



Series 468



| Code                                 | Dimensions [mm] |                  |                  | Weight [g] (brass) |
|--------------------------------------|-----------------|------------------|------------------|--------------------|
|                                      | L <sub>2</sub>  | Ø D <sub>1</sub> | Ø D <sub>2</sub> |                    |
| Assembly with retaining nut 3/8 BSPP | 2.00            | 14.80            | 12.65            | 18.00              |

| Spray angle | Ordering no. |                                                |       |      | Bore diameter B [mm] | Narrowest free cross sections Ø [mm] | L <sub>1</sub> [mm] | V̇ water [l/min] |      |       |       |       |       | Spray diameter D [mm]<br>(at p = 2 bar)                                               |       |
|-------------|--------------|------------------------------------------------|-------|------|----------------------|--------------------------------------|---------------------|------------------|------|-------|-------|-------|-------|---------------------------------------------------------------------------------------|-------|
|             | Type         | Mat. no.                                       |       |      |                      |                                      |                     | p [bar]          |      |       |       |       |       |  |       |
|             |              | 17 <sup>1</sup>                                | 30    | 5E   |                      |                                      |                     |                  |      |       |       |       |       |                                                                                       |       |
|             |              | Stainless steel 316Ti/<br>Stainless steel 316L | Brass | PVDF |                      |                                      |                     | 0.5              | 1.0  | 2.0   | 3.0   | 5.0   | 10.0  |                                                                                       |       |
| 60°         | 468.604      | ●                                              | ●     |      | 2.05                 | 1.40                                 | 18.00               | 1.81             | 2.39 | 3.15  | 3.70  | 4.54  | 6.00  | 280                                                                                   | 560   |
|             | 468.644      |                                                | ●     | ●    | 2.40                 | 1.90                                 | 24.50               | 2.30             | 3.03 | 4.00  | 4.70  | 5.77  | 7.61  | 290                                                                                   | 570   |
|             | 468.684      |                                                | ●     |      | 2.60                 | 2.00                                 | 24.50               | 2.87             | 3.79 | 5.00  | 5.88  | 7.21  | 9.52  | 300                                                                                   | 580   |
|             | 468.724      | ●                                              | ●     |      | 2.90                 | 2.00                                 | 24.50               | 3.62             | 4.77 | 6.30  | 7.41  | 9.09  | 11.99 | 310                                                                                   | 590   |
| 90°         | 468.526      | ●                                              | ●     | ●    | 1.65                 | 1.30                                 | 18.00               | 1.15             | 1.52 | 2.00  | 2.35  | 2.89  | 3.81  | 460                                                                                   | 780   |
|             | 468.846      | ●                                              | ●     |      | 4.05                 | 3.20                                 | 24.50               | 7.18             | 9.47 | 12.50 | 14.70 | 18.03 | 23.80 | 500                                                                                   | 920   |
| 120°        | 468.368      |                                                | ●     |      | 0.95                 | 0.70                                 | 18.00               | 0.36             | 0.48 | 0.63  | 0.74  | 0.91  | 1.20  | 740                                                                                   | 1,750 |
|             | 468.408      | ●                                              | ●     |      | 1.20                 | 0.85                                 | 18.00               | 0.57             | 0.76 | 1.00  | 1.18  | 1.44  | 1.90  | 740                                                                                   | 1,750 |
|             | 468.488      | ●                                              | ●     |      | 1.50                 | 1.00                                 | 18.00               | 0.92             | 1.21 | 1.60  | 1.88  | 2.31  | 3.05  | 740                                                                                   | 1,750 |
|             | 468.528      | ●                                              | ●     |      | 1.65                 | 1.20                                 | 18.00               | 1.15             | 1.52 | 2.00  | 2.35  | 2.89  | 3.81  | 740                                                                                   | 1,750 |

<sup>1</sup> We reserve the right to supply material 316Ti or 316L under material no. 17.

Conversion formula for this series:  $\dot{V}_2 = \dot{V}_1 \cdot \left(\frac{p_2}{p_1}\right)^{0.4}$   
(≤ 10 bar)

|          |         |   |              |   |              |
|----------|---------|---|--------------|---|--------------|
| Ordering | Type    | + | Material no. | = | Ordering no. |
| example: | 468.604 | + | 17           | = | 468.604.17   |



Assembly accessories can be found in Chapter 9 “Accessories”.

