



THE  
**SPRAY NOZZLE**  
PEOPLE

# TF

**Hollow  
Cone**

Wide Range Of  
Flows and Angles



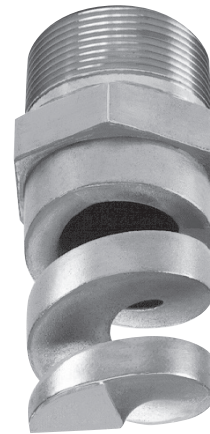
## HOLLOW CONE

### DESIGN FEATURES

- ✓ The original spiral nozzle invented by BETE and continuously improved!
- ✓ High energy efficiency
- ✓ One-piece/no internal parts
- ✓ Clog-resistant performance
- ✓ High discharge velocity
- ✓ Male connection standard; female connection available by special order

### SPRAY CHARACTERISTICS

- ✓ Wide range of flow rates and spray angles
- ✓ Fine atomisation
- ✓ Spray patterns: Hollow Cone (and Full Cone - see relevant data sheet)
- ✓ Spray angles: 50° to 180°
- ✓ Flow rates: 2.26 to 10,700 L/min (Higher flow rates available)



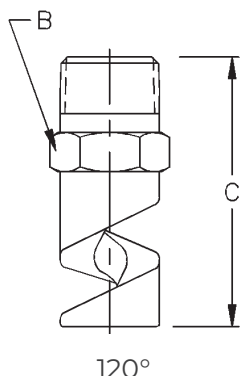
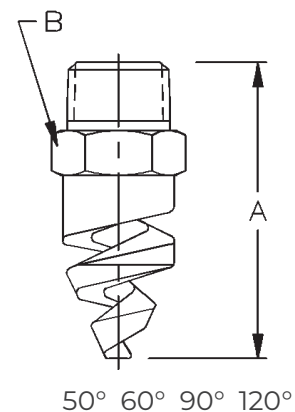
The TF nozzle is the original Spiral Nozzle designed by BETE. Its spiral shape shears the liquid into several hollow cone patterns which converge into a single hollow cone. The spiral design gives excellent clog resistance and also tends to atomise the fluid better than conventional nozzles resulting in a finer drop size. Hollow cone TF nozzles are used in a wide variety of applications including:

Gas scrubbing  
Gas cooling  
Evaporative cooling  
Evaporation ponds  
Moistening  
And many more.

CALL NOW : +44 (0) 1273 400092

[www.spray-nozzle.co.uk](http://www.spray-nozzle.co.uk)

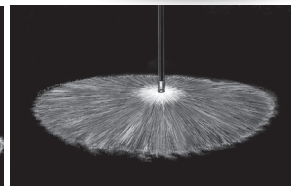
The Go-to People for spray nozzle solutions



Hollow cone 50°



Hollow cone 120°



Hollow cone 180°

## TF Hollow Cone Flow Rates and Dimensions

Hollow Cone, 50° (N), 60° (V), 90° (M), 120° (W), and 180° (XW) Spray Angles, 1/4" to 4" Pipe Sizes, BSP or NPT  
Standard Materials: Brass, 316 Stainless Steel, PVC, Polypropylene and PTFE (Poly. not available for TF6-TF10)

Flow rate (l/min) at bar

| Male Pipe Size | Nozzle No | Available Spray Angles | K    | Flow rate (l/min) at bar |         |       |       |       |       |        |        |          |           | Dimensions (mm) |      |      | Weight (g) |      |
|----------------|-----------|------------------------|------|--------------------------|---------|-------|-------|-------|-------|--------|--------|----------|-----------|-----------------|------|------|------------|------|
|                |           |                        |      | 0.5 bar                  | 0.7 bar | 1 bar | 2 bar | 3 bar | 5 bar | 10 bar | 20 bar | Orif Dia | Free Pass | A               | B    | C    | Met        | Plas |
| 1/4            | TF6       | 50° 60° 90° 120°       | 3.19 | 2.26                     | 2.67    | 3.19  | 4.5   | 5.5   | 7.1   | 10.1   | 14.3   | 2.38     | 2.38      | 42.9            | 14.3 |      |            |      |
|                | TF8       | 50° 60° 90° 120° 180°  | 5.93 | 4.19                     | 4.96    | 5.93  | 8.4   | 10.3  | 13.2  | 18.7   | 26.5   | 3.18     | 3.18      | 47.6            | 14.3 | 47.6 | 35         | 21   |
|                | TF10      | 50° 60° 90° 120° 180°  | 9.12 | 6.45                     | 7.63    | 9.12  | 12.9  | 15.8  | 20.4  | 28.8   | 40.8   | 3.97     | 3.18      | 47.6            | 14.3 | 47.6 |            |      |
|                | TF12      | 50° 60° 90° 120° 180°  | 13.7 | 9.7                      | 11.4    | 13.7  | 19.3  | 23.7  | 30.6  | 43.2   | 61.1   | 4.76     | 3.18      |                 |      |      |            |      |
| 3/8            | TF14      | 50° 60° 90° 120° 180°  | 18.5 | 13.1                     | 15.4    | 18.5  | 26.1  | 32    | 41.3  | 58.4   | 82.6   | 5.56     | 3.18      |                 |      |      |            |      |
|                | TF16      | 50° 60° 90° 120° 180°  | 24.2 | 17.1                     | 20.2    | 24.2  | 34.2  | 41.8  | 54    | 76.4   | 108    | 6.35     | 3.18      | 47.6            | 14.3 | 47.6 | 50         | 21   |
|                | TF20      | 50° 60° 90° 120° 180°  | 37.6 | 26.6                     | 31.5    | 37.6  | 53.2  | 65.1  | 84.1  | 119    | 168    | 7.94     | 3.18      |                 |      |      |            |      |
|                | TF24      | 50° 60° 90° 120° 180°  | 54.9 | 38.8                     | 46      | 54.9  | 77.7  | 95.1  | 123   | 174    | 246    | 9.53     | 4.76      |                 |      |      |            |      |
| 1/2            | TF28      | 50° 60° 90° 120° 180°  | 75.2 | 53.2                     | 62.9    | 75.2  | 106   | 130   | 168   | 238    | 336    | 11.1     | 4.76      | 63.5            | 22.2 | 60.5 | 85         | 25   |
|                | TF32      | 50° 60° 90° 120° 180°  | 95.7 | 67.7                     | 80.1    | 95.7  | 135   | 166   | 214   | 303    | 428    | 12.7     | 4.76      | 69.9            | 28.6 | 76.2 | 85         | 28   |
| 1              | TF40      | 60° 90° 120° 180°      | 153  | 108                      | 128     | 153   | 216   | 264   | 341   | 483    | 683    | 15.9     | 6.35      |                 |      |      |            |      |
|                | TF48      | 60° 90° 120° 180°      | 217  | 153                      | 181     | 216   | 306   | 375   | 484   | 685    | 968    | 19.1     | 6.35      | 92.2            | 42.5 | 85   | 425        | 85   |
|                | TF56      | 60° 90° 120° 180°      | 294  | 208                      | 246     | 294   | 416   | 509   | 657   | 930    | 1320   | 22.2     | 7.94      |                 |      |      |            |      |
|                | TF64      | 60° 90° 120° 180°      | 385  | 272                      | 322     | 385   | 545   | 667   | 861   | 1220   | 1720   | 25.4     | 7.94      | 111             | 851  | 170  | 851        | 170  |
| 1 1/2          | TF72      | 60° 90° 120° 180°      | 438  | 309                      | 366     | 438   | 619   | 758   | 978   | 1380   | 1960   | 28.6     | 7.94      |                 |      |      |            |      |
|                | TF88      | 60° 90° 120° 180°      | 638  | 451                      | 534     | 638   | 902   | 1110  | 1430  | 2020   | 2850   | 34.9     | 11.1      | 143             | 63.5 | 127  | 1300       | 227  |
|                | TF96      | 60° 90° 120° 180°      | 806  | 570                      | 674     | 806   | 1140  | 1400  | 1800  | 2550   | 3600   | 38.1     | 11.1      | 176             | 63.5 | 127  | 1530       | 255  |
| 2              | TF112     | 60° 90° 120° 180°      | 1170 | 825                      | 976     | 1170  | 1650  | 2020  | 2610  | 3690   | 5220   | 44.5     | 14.3      |                 |      |      |            |      |
|                | TF128     | 60° 90° 120° 180°      | 1550 | 1090                     | 1290    | 1550  | 2190  | 2680  | 3460  | 4891   | 6920   | 50.8     | 14.3      | 219             | 88.9 |      |            |      |
| 3              | TF160     | 60° 90° 120° 180°      | 2390 | 1690                     | 2000    | 2390  | 3380  | 4140  | 5350  | 7570   | 10700  | 63.5     | 15.9      | 257             | 114  |      |            |      |

Flow Rate (l/min) = K √ bar

**Ask our technical sales engineers about additional products and services to optimise your spraying process.**

## Spray Calibration Solutions

Easy-to-use, fast measurement solutions to ensure accurate nozzle installation and maintenance, reduce water wastage and identify nozzle wear.



**Spray Pattern & Droplet Distribution**



**Nozzle Flow Calibrators**



**Nozzle Cleaning Kit**

## Complete Spray Bars

Tailored nozzle selections and spray bar designs that integrate seamlessly with your new or existing setup.

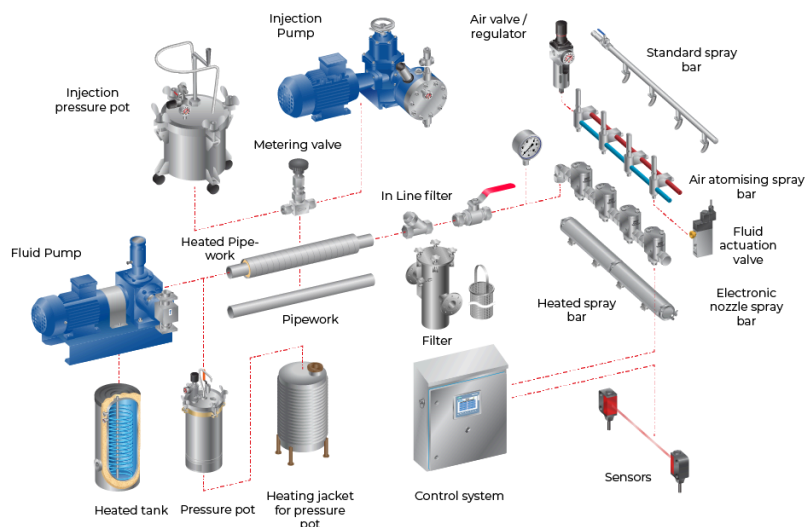
- ✓ Expert nozzle selection and placement
- ✓ Efficient spray coverage
- ✓ Fast turnaround time
- ✓ Reduced design burden
- ✓ High-quality spray bars



## Complete Custom Spraying Systems

Complete spraying systems built around your goals and application.

- ✓ Tailored upstream components supplied individually or as part of complete system
- ✓ Custom pipework, pumps, tanks, sensors, valves, heating, control panels and more
- ✓ Seamless integration with existing processes
- ✓ Built to budget and ROI targets
- ✓ End-to-end support: design, install, maintain



**THE GO-TO PEOPLE FOR SUCCESSFUL SPRAY ENGINEERING**