



HOLLOW CONE

# TH

## Tangential Inlet/Right Angle



### DESIGN FEATURES

- Large free passage
- Clog-resistant; nozzles have no internal parts
- One-piece casting
- Female connection
- Flanged connection available
- Silicon carbide available upon request
- Inlet and outlet are in-line

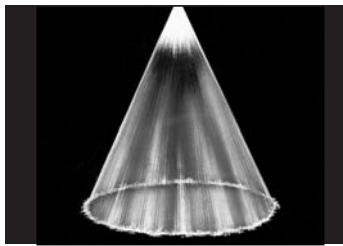
### SPRAY CHARACTERISTICS

- Patented geometry designed to give the most uniform liquid distribution around the periphery of the spray

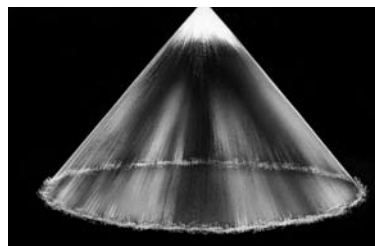
**Spray pattern:** Hollow Cone

**Spray angles:** Narrow to Medium

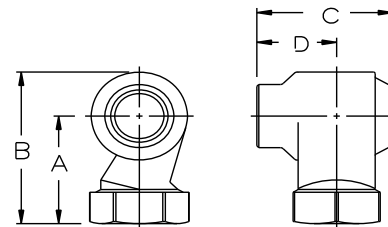
**Flow rates:** 4.11 to 564 gpm



Hollow Cone - Narrow Angle



Hollow Cone - Medium Angle



Dimensions are approximate. Check with BETE for critical dimension applications.

### TH Flow Rates and Dimensions

Hollow Cone, Narrow to Medium Spray Angles, 1" to 3" Pipe Sizes

| Female Pipe Size | Nozzle Number | Spray Ang. |        |        | K Factor | GALLONS PER MINUTE @ PSI |       |       |        |        |        |        | Approx. Orifice Dia. (in.) | Free Pass. Dia. (in.) | Dimensions (in.) (MAX) |      |      |      | Wt. (lbs.) |      |
|------------------|---------------|------------|--------|--------|----------|--------------------------|-------|-------|--------|--------|--------|--------|----------------------------|-----------------------|------------------------|------|------|------|------------|------|
|                  |               | 5 PSI      | 15 PSI | 40 PSI |          | 3 PSI                    | 5 PSI | 7 PSI | 10 PSI | 15 PSI | 20 PSI | 30 PSI |                            |                       | 40 PSI                 | A    | B    | C    |            | D    |
| 1                | THF1508       | 54°        | 54°    | 54°    | 2.37     | 4.11                     | 5.30  | 6.27  | 7.50   | 9.19   | 10.6   | 13.0   | 15.0                       | 0.34                  | 0.34                   | 2.31 | 3.13 | 2.33 | 1.40       | 1.04 |
|                  | THF1808       | 56°        | 56°    | 56°    | 2.85     | 4.93                     | 6.36  | 7.53  | 9.00   | 11.0   | 12.7   | 15.6   | 18.0                       | 0.38                  | 0.38                   |      |      |      |            |      |
|                  | THF2308       | 63°        | 66°    | 66°    | 3.64     | 6.30                     | 8.13  | 9.62  | 11.5   | 14.1   | 16.3   | 19.9   | 23.0                       | 0.44                  | 0.44                   |      |      |      |            |      |
|                  | THF2708       | 66°        | 70°    | 70°    | 4.27     | 7.39                     | 9.55  | 11.3  | 13.5   | 16.5   | 19.1   | 23.4   | 27.0                       | 0.47                  | 0.47                   |      |      |      |            |      |
|                  | THF3208       | 68°        | 72°    | 71°    | 5.06     | 8.76                     | 11.3  | 13.4  | 16.0   | 19.6   | 22.6   | 27.7   | 32.0                       | 0.44                  | 0.44                   |      |      |      |            |      |
|                  | THF3808       | 68°        | 72°    | 71°    | 6.01     | 10.4                     | 13.4  | 15.9  | 19.0   | 23.3   | 26.9   | 32.9   | 38.0                       | 0.60                  | 0.60                   |      |      |      |            |      |
| 1 1/4            | THF3210       | 66°        | 66°    | 66°    | 5.06     | 8.76                     | 11.3  | 13.4  | 16.0   | 19.6   | 22.6   | 27.7   | 32.0                       | 0.55                  | 0.55                   | 2.81 | 3.79 | 2.86 | 1.74       | 1.65 |
|                  | THF3810       | 68°        | 70°    | 70°    | 6.01     | 10.4                     | 13.4  | 15.9  | 19.0   | 23.3   | 26.9   | 32.9   | 38.0                       | 0.63                  | 0.63                   |      |      |      |            |      |
|                  | THF4110       | 73°        | 74°    | 74°    | 6.48     | 11.2                     | 14.5  | 17.2  | 20.5   | 25.1   | 29.0   | 35.5   | 41.0                       | 0.66                  | 0.66                   |      |      |      |            |      |
|                  | THF5210       | 90°        | 90°    | 90°    | 8.22     | 14.2                     | 18.4  | 21.8  | 26.0   | 31.8   | 36.8   | 45.0   | 52.0                       | 0.78                  | 0.78                   |      |      |      |            |      |
|                  | THF7010       | 83°        | 85°    | 85°    | 11.1     | 19.2                     | 24.7  | 29.3  | 35.0   | 42.9   | 49.5   | 60.6   | 70.0                       | 1.03                  | 0.89                   |      |      |      |            |      |
| 1 1/2            | THF6112       | 58°        | 60°    | 60°    | 9.65     | 16.7                     | 21.6  | 25.5  | 30.5   | 37.4   | 43.1   | 52.8   | 61.0                       | 0.77                  | 0.77                   | 2.96 | 4.12 | 3.43 | 2.09       | 1.88 |
|                  | THF7012       | 63°        | 65°    | 65°    | 11.1     | 19.2                     | 24.7  | 29.3  | 35.0   | 42.9   | 49.5   | 60.6   | 70.0                       | 0.84                  | 0.84                   |      |      |      |            |      |
|                  | THF7712       | 63°        | 66°    | 66°    | 12.2     | 21.1                     | 27.2  | 32.2  | 38.5   | 47.2   | 54.4   | 66.7   | 77.0                       | 0.92                  | 0.92                   |      |      |      |            |      |
|                  | THF9012       | 67°        | 70°    | 70°    | 14.2     | 24.6                     | 31.8  | 37.6  | 45.0   | 55.1   | 63.6   | 77.9   | 90.0                       | 1.03                  | 1.03                   |      |      |      |            |      |
|                  | THF12712      | 75°        | 80°    | 80°    | 20.1     | 34.8                     | 44.9  | 53.1  | 63.5   | 77.8   | 89.8   | 110    | 127                        | 1.30                  | 1.06                   |      |      |      |            |      |
|                  | THF14512      | 80°        | 80°    | 83°    | 22.9     | 39.7                     | 51.3  | 60.7  | 72.5   | 88.8   | 103    | 126    | 145                        | 1.42                  | 1.06                   |      |      |      |            |      |

Flow Rate (GPM) = K √PSI

Standard Materials: Brass, Carbon Steel, and 316 Stainless Steel.

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

TO ORDER: specify pipe size, connection type, nozzle number, spray angle, and material.



Silicon Carbide, Flanged



HOLLOW CONE

Dimensions are approximate. Check with BETE for critical dimension applications.

**TH Flow Rates and Dimensions**

*Hollow Cone, Narrow to Medium Spray Angles, 1" to 3" Pipe Sizes*

| Female Pipe Size | Nozzle Number | Spray Ang. |        |        | K Factor | GALLONS PER MINUTE @ PSI |       |       |        |        |        |        |        | Approx. Orifice Dia. (in.) | Free Pass. Dia. (in.) | Dimensions (in.) (MAX) |      |      |      | Wt. (lbs.) |
|------------------|---------------|------------|--------|--------|----------|--------------------------|-------|-------|--------|--------|--------|--------|--------|----------------------------|-----------------------|------------------------|------|------|------|------------|
|                  |               | 5 PSI      | 15 PSI | 40 PSI |          | 3 PSI                    | 5 PSI | 7 PSI | 10 PSI | 15 PSI | 20 PSI | 30 PSI | 40 PSI |                            |                       | A                      | B    | C    | D    |            |
| 2                | THF8516       | 63°        | 65°    | 65°    | 13.4     | 23.3                     | 30.1  | 35.6  | 42.5   | 52.1   | 60.1   | 73.6   | 85.0   | 0.86                       | 0.86                  | 3.64                   | 5.12 | 4.20 | 2.44 | 3.16       |
|                  | THF10516      | 65°        | 67°    | 67°    | 16.6     | 28.8                     | 37.1  | 43.9  | 52.5   | 64.3   | 74.2   | 90.9   | 105    | 1.00                       | 1.00                  |                        |      |      |      |            |
|                  | THF12516      | 68°        | 70°    | 70°    | 19.8     | 34.2                     | 44.2  | 52.3  | 62.5   | 76.5   | 88.4   | 108    | 125    | 1.14                       | 1.14                  |                        |      |      |      |            |
|                  | THF14516      | 74°        | 79°    | 79°    | 22.9     | 39.7                     | 51.3  | 60.7  | 72.5   | 88.8   | 103    | 126    | 145    | 1.27                       | 1.27                  |                        |      |      |      |            |
|                  | THF17016      | 77°        | 80°    | 80°    | 26.9     | 46.6                     | 60.1  | 71.1  | 85.0   | 104    | 120    | 147    | 170    | 1.39                       | 1.39                  |                        |      |      |      |            |
|                  | THF19216      | 77°        | 80°    | 80°    | 30.4     | 52.6                     | 67.9  | 80.3  | 96.0   | 118    | 136    | 166    | 192    | 1.52                       | 1.44                  |                        |      |      |      |            |
|                  | THF20516      | 77°        | 83°    | 83°    | 32.4     | 56.1                     | 72.5  | 85.8  | 103    | 126    | 145    | 178    | 205    | 1.63                       | 1.44                  |                        |      |      |      |            |
|                  | THF23016      | 76°        | 83°    | 83°    | 36.4     | 63.0                     | 81.3  | 96.2  | 115    | 141    | 163    | 199    | 230    | 1.75                       | 1.44                  |                        |      |      |      |            |
| 2 1/2            | THF17020      | 85°        | 85°    | 85°    | 26.9     | 46.6                     | 60.1  | 71.1  | 85.0   | 104    | 120    | 147    | 170    | 1.33                       | 1.33                  | 4.94                   | 6.79 | 5.19 | 3.03 | 6.48       |
|                  | THF19020      | 70°        | 73°    | 73°    | 30.0     | 52.0                     | 67.2  | 79.5  | 95.0   | 116    | 134    | 165    | 190    | 1.42                       | 1.42                  |                        |      |      |      |            |
|                  | THF20520      | 72°        | 75°    | 73°    | 32.4     | 56.1                     | 72.5  | 85.8  | 103    | 126    | 145    | 178    | 205    | 1.47                       | 1.47                  |                        |      |      |      |            |
|                  | THF23020      | 76°        | 78°    | 78°    | 36.4     | 63.0                     | 81.3  | 96.2  | 115    | 141    | 163    | 199    | 230    | 1.58                       | 1.58                  |                        |      |      |      |            |
|                  | THF28020      | 79°        | 80°    | 80°    | 44.3     | 76.7                     | 99.0  | 117   | 140    | 171    | 198    | 242    | 280    | 1.81                       | 1.75                  |                        |      |      |      |            |
|                  | THF32020      | 83°        | 85°    | 85°    | 50.6     | 87.6                     | 113   | 134   | 160    | 196    | 226    | 277    | 320    | 2.02                       | 1.75                  |                        |      |      |      |            |
|                  | THF34020      | 87°        | 90°    | 90°    | 53.8     | 93.1                     | 120   | 142   | 170    | 208    | 240    | 294    | 340    | 2.09                       | 1.75                  |                        |      |      |      |            |
|                  | THF43520      | 92°        | 95°    | 95°    | 68.8     | 119                      | 154   | 182   | 218    | 266    | 308    | 377    | 435    | 2.44                       | 1.75                  |                        |      |      |      |            |
| 3                | THF18524      | 58°        | 58°    | 58°    | 29.3     | 50.7                     | 65.4  | 77.4  | 92.5   | 113    | 131    | 160    | 185    | 1.28                       | 1.28                  | 5.74                   | 7.90 | 6.18 | 3.66 | 8.88       |
|                  | THF23024      | 65°        | 65°    | 65°    | 36.4     | 63.0                     | 81.3  | 96.2  | 115    | 141    | 163    | 199    | 230    | 1.44                       | 1.44                  |                        |      |      |      |            |
|                  | THF28024      | 70°        | 70°    | 70°    | 44.3     | 76.7                     | 99.0  | 117   | 140    | 171    | 198    | 242    | 280    | 1.63                       | 1.63                  |                        |      |      |      |            |
|                  | THF32024      | 65°        | 70°    | 70°    | 50.6     | 87.6                     | 113   | 134   | 160    | 196    | 226    | 277    | 320    | 1.78                       | 1.78                  |                        |      |      |      |            |
|                  | THF34024      | 68°        | 70°    | 70°    | 53.8     | 93.1                     | 120   | 142   | 170    | 208    | 240    | 294    | 340    | 1.84                       | 1.84                  |                        |      |      |      |            |
|                  | THF41224      | 75°        | 78°    | 78°    | 65.1     | 113                      | 146   | 172   | 206    | 252    | 291    | 357    | 412    | 2.11                       | 2.11                  |                        |      |      |      |            |
|                  | THF46924      | 75°        | 80°    | 80°    | 74.2     | 128                      | 166   | 196   | 235    | 287    | 332    | 406    | 469    | 2.28                       | 2.13                  |                        |      |      |      |            |
|                  | THF52624      | 78°        | 80°    | 80°    | 83.2     | 144                      | 186   | 220   | 263    | 322    | 372    | 456    | 526    | 2.48                       | 2.13                  |                        |      |      |      |            |
| THF56424         | 78°           | 80°        | 80°    | 89.2   | 154      | 199                      | 236   | 282   | 345    | 399    | 488    | 564    | 2.59   | 2.13                       |                       |                        |      |      |      |            |

$Flow\ Rate\ (GPM) = K \sqrt{PSI}$

**Standard Materials: Brass, Carbon Steel and 316 Stainless Steel.**

Spray angle performance varies with pressure. Contact BETE for specific data on critical applications.

Call for the name of your nearest BETE representative.  
**CALL 413-772-0846**