

## BRONZE FITTINGS



UL842, UL258, UL125, FM

**Class 125 (150) For steam, water, gas, oil and air service**  
Standard specifications

Materials - ASTM B62-93 (85,5,5,5) C83600

Dimensions - ANSI B 16.15

Threads - ANSI B2.1 or BA 21 and Fed. WW-P-460C, MSS-SP-106, ANSI/ASME B1.20.1

PRICING FILE AVAILABLE ONLINE

- UL/ FM Approved
- ISO 9001:2000
- Not Lead Free
- RoHS Compliant

Bronze threaded fittings are manufactured from smooth-cored castings, designed to provide full flow with minimum restriction. All threads are accurately machined and gauged to ensure a perfect fit with the pipe. All fittings are individually tested under water to ensure quality. Bronze provides a tighter seal and is easier to install than other metals. Can be used for water, plumbing, heating, pneumatic and marine applications, able to resist the harmful effects of corrosion when coming into contact with salt water or fresh water polluted with mineral acids or peaty soils.

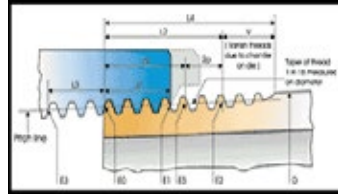
## LEAD FREE BRASS FITTINGS

LEAD  
FREE



- Approved to ANSI/NSF 61-4 California AB 1953
- Meets Federal State Drinking Water Act, Lead Free Requirement
- Brass fittings conform to AWWA C800
- Brass castings conform to ASTM B584, UNS Alloy C8933

- Brass fittings dimensions conform to ASME B16.15
- NPT threads on all fittings conform to ASME B1.20.1
- Brass unions conform to specification A-A-59617
- Manufacturing facilities are ISO 9001:2008



### Taper thread

$$L2=(0.8D+6.8) \quad 1/n=(0.80D+6.8)p$$

$$L_2 = (0.8D + 6.8) \quad 1/n = (0.80D + 6.8)p$$

| Nominal<br>Pipe<br>Size<br>(inches) | Length,L1 Plane<br>to L2 Plane<br>External Thread<br>(L2-L1) |        | Wrench Makeup Length<br>for Internal Thread <sup>7</sup> |        |               | Vanish Thread<br>(V) |        | Overall <sup>8</sup><br>Length<br>External<br>Thread<br>(L4) | Nominal Complete<br>External Thread <sup>5</sup> |         | Height of<br>Thread(h) | Increase in<br>Diam./<br>Thread<br>(0.0625/n) | Basic <sup>6</sup><br>Minor<br>Diam.At<br>Small<br>End of<br>Pipe(K0) |
|-------------------------------------|--------------------------------------------------------------|--------|----------------------------------------------------------|--------|---------------|----------------------|--------|--------------------------------------------------------------|--------------------------------------------------|---------|------------------------|-----------------------------------------------|-----------------------------------------------------------------------|
|                                     |                                                              |        | Length(L3)                                               |        | Diam.<br>(E3) |                      |        |                                                              |                                                  |         |                        |                                               |                                                                       |
|                                     | Inch                                                         | Thread | Inch                                                     | Thread |               | Inch                 | Thread |                                                              |                                                  |         |                        |                                               |                                                                       |
| 1/8                                 | 0.1024                                                       | 2.76   | 0.1111                                                   | 3      | 0.35656       | 0.1285               | 3.47   | 0.3924                                                       | 0.1898                                           | 0.37537 | 0.02963                | 0.00231                                       | 0.3339                                                                |
| 1/4                                 | 0.1740                                                       | 3.13   | 0.1667                                                   | 3      | 0.46697       | 0.1928               | 3.47   | 0.5946                                                       | 0.2907                                           | 0.49556 | 0.04444                | 0.00347                                       | 0.4329                                                                |
| 3/8                                 | 0.1678                                                       | 3.02   | 0.1667                                                   | 3      | 0.60160       | 0.1928               | 3.47   | 0.6006                                                       | 0.2967                                           | 0.63056 | 0.04444                | 0.00347                                       | 0.5676                                                                |
| 1/2                                 | 0.2137                                                       | 2.99   | 0.2143                                                   | 3      | 0.74504       | 0.2478               | 3.47   | 0.7815                                                       | 0.3909                                           | 0.78286 | 0.05714                | 0.00446                                       | 0.7013                                                                |
| 3/4                                 | 0.2067                                                       | 2.89   | 0.2143                                                   | 3      | 0.95429       | 0.2478               | 3.47   | 0.7935                                                       | 0.4029                                           | 0.99286 | 0.05714                | 0.00446                                       | 0.9105                                                                |
| 1                                   | 0.2828                                                       | 3.25   | 0.2609                                                   | 3      | 1.19733       | 0.3017               | 3.47   | 0.9845                                                       | 0.5089                                           | 1.24543 | 0.06957                | 0.00543                                       | 1.1441                                                                |
| 1 1/4                               | 0.2868                                                       | 3.30   | 0.2609                                                   | 3      | 1.54083       | 0.3017               | 3.47   | 1.0085                                                       | 0.5329                                           | 1.59043 | 0.06957                | 0.00543                                       | 1.4876                                                                |
| 1 1/2                               | 0.3035                                                       | 3.49   | 0.2609                                                   | 3      | 1.77978       | 0.3017               | 3.47   | 1.0252                                                       | 0.5496                                           | 1.83043 | 0.06957                | 0.00543                                       | 1.7265                                                                |
| 2                                   | 0.3205                                                       | 3.69   | 0.2609                                                   | 3      | 2.25272       | 0.3017               | 3.47   | 1.0582                                                       | 0.5826                                           | 2.30543 | 0.06957                | 0.00543                                       | 2.1995                                                                |
| 2 1/2                               | 0.4555                                                       | 3.64   | 0.2500                                                   | 2      | 2.70391       | 0.4337               | 3.47   | 1.5712                                                       | 0.8875                                           | 2.77500 | 0.10000                | 0.00781                                       | 2.6195                                                                |
| 3                                   | 0.4340                                                       | 3.47   | 0.2500                                                   | 2      | 3.32500       | 0.4337               | 3.47   | 1.6337                                                       | 0.9500                                           | 3.40000 | 0.10000                | 0.00781                                       | 3.2406                                                                |
| 3 1/2                               | 0.4290                                                       | 3.43   | 0.2500                                                   | 2      | 3.82188       | 0.4337               | 3.47   | 1.6837                                                       | 1.0000                                           | 3.90000 | 0.10000                | 0.00781                                       | 3.7375                                                                |
| 4                                   | 0.4560                                                       | 3.65   | 0.2500                                                   | 2      | 4.31875       | 0.4337               | 3.47   | 1.7337                                                       | 1.0500                                           | 4.40000 | 0.10000                | 0.00781                                       | 4.2344                                                                |
| 5                                   | 0.4693                                                       | 3.75   | 0.2500                                                   | 2      | 5.37511       | 0.4337               | 3.47   | 1.8400                                                       | 1.1563                                           | 5.46300 | 0.10000                | 0.00781                                       | 5.2907                                                                |
| 6                                   | 0.5545                                                       | 4.44   | 0.2500                                                   | 2      | 6.43047       | 0.4337               | 3.47   | 1.9462                                                       | 1.2625                                           | 6.52500 | 0.10000                | 0.00781                                       | 6.3461                                                                |

Cast Bronze Fittings

Class 125 Leaded and Lead Free

Material: ASTM B584  
Dimensions: ASME B16.15  
Flange Dimensions: ASME16.24, MSS SP-106  
Union Dimensions: A-A-59617  
Threads: ASME B1.20.1, ISO 7-1  
Size Available: 1/8" - 6"



90  
Elbow, 90°



90R  
Reducing Elbow, 90°



92  
Street Elbow, 90°



120  
Elbow, 45°



121  
Street Elbow, 45°



130  
Tee



130R  
Reducing Tee



130R  
Reducing Tee



130R  
Reducing Tee



130R  
Reducing Tee



130R  
Reducing Tee



180  
Cross



180R  
Reducing Cross



220  
Coupling



240  
Reducing Coupling



241  
Outside Hex Bushing



241N  
Inside Hex Bushing



245  
Reducing Hexagon Nipple



280  
Hexagon Nipple



246  
Reducing Extension Piece



529A  
Extension Piece



291  
Cored Plug



291S  
Solid Plug



291N  
Countersunk Plug



292  
Hex Head Plug



300  
Cap



310  
Locknut



342  
Union



321H  
Companion Solder Flange



321J  
Floor Flange



321L  
Companion Threaded Flange



F130  
Adapter Tee



F130R  
Reducing Adapter Tee



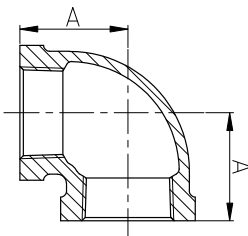
91  
Adapter 90° Elbow



91C  
Drop Ear 90° Elbow

90

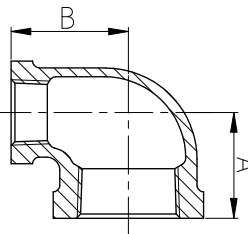
Elbow, 90°



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4 | 1   |
|-----------|------|-------|-------|-----|-------|-----|-----|
|           | mm   | 6     | 8     | 10  | 15    | 20  | 25  |
| Dim. (mm) | A    | 14    | 18    | 21  | 26    | 30  | 36  |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3   | 4   |
|           | mm   | 32    | 40    | 50  | 65    | 80  | 100 |
| Dim. (mm) | A    | 43    | 47    | 54  | 69    | 78  | 96  |

90R

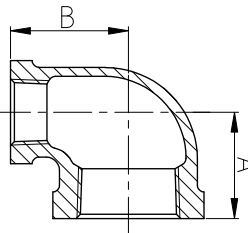
Reducing Elbow, 90°



| Size      | Inch | 1/4X1/8 | 3/8X1/8 | 3/8X1/4 | 1/2X1/4 | 1/2X3/8 |
|-----------|------|---------|---------|---------|---------|---------|
|           | mm   | 8X6     | 10X6    | 10X8    | 15X8    | 15X10   |
| Dim. (mm) | A    | 17      | 20.5    | 19      | 24.6    | 24      |
|           | B    | 15      | 21.6    | 20      | 24.9    | 23      |
| Size      | Inch | 3/4X1/8 | 3/4X1/4 | 3/4X3/8 | 3/4X1/2 | 1X1/4   |
|           | mm   | 20X6    | 20X8    | 20X10   | 20X15   | 25X8    |
| Dim. (mm) | A    | 26      | 26.7    | 28.5    | 27      | 25.5    |
|           | B    | 27      | 27.4    | 28.7    | 28      | 29.5    |

90R

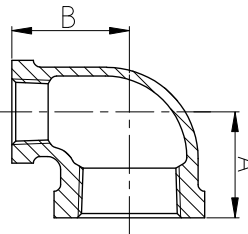
Reducing Elbow, 90°



| Size      | Inch | 1X3/8   | 1X1/2     | 1X3/4     | 1 1/4X1/2 | 1 1/4X3/4   |
|-----------|------|---------|-----------|-----------|-----------|-------------|
|           | mm   | 25X10   | 25X15     | 25X20     | 32X15     | 32X20       |
| Dim. (mm) | A    | 30      | 30        | 33        | 34        | 35          |
|           | B    | 32.3    | 31        | 33        | 38.9      | 38          |
| Size      | Inch | 1 1/4X1 | 1 1/2X1/2 | 1 1/2X3/4 | 1 1/2X1   | 1 1/2X1 1/4 |
|           | mm   | 32X25   | 40X15     | 40X20     | 40X25     | 40X32       |
| Dim. (mm) | A    | 39      | 32        | 38.6      | 39        | 44          |
|           | B    | 41      | 38        | 44.5      | 44        | 46          |

90R

Reducing Elbow, 90°

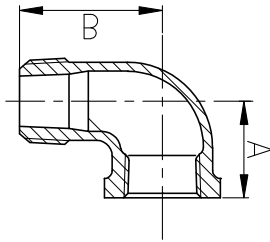


| Size      | Inch | 2X1/2   | 2X3/4 | 2X1     | 2X1 1/4 | 2X1 1/2 | 2 1/2X1 1/2 |
|-----------|------|---------|-------|---------|---------|---------|-------------|
|           | mm   | 50X15   | 50X20 | 50X25   | 50X32   | 50X40   | 65X40       |
| Dim. (mm) | A    | 37.5    | 40.5  | 43.9    | 48.3    | 48      | 54.9        |
|           | B    | 47.5    | 50    | 51.3    | 53.3    | 53      | 63.8        |
| Size      | Inch | 2 1/2X2 | 3X2   | 3X2 1/2 | 4X2     | 4X2 1/2 | 4X3         |
|           | mm   | 65X50   | 80X50 | 80X65   | 100X50  | 100X65  | 100X80      |
| Dim. (mm) | A    | 61      | 64    | 72      | 66.5    | 75.5    | 84          |
|           | B    | 66      | 73.4  | 76      | 84.5    | 87.5    | 91          |



92

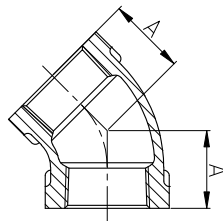
Street Elbow, 90°



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4  | 1     |
|-----------|------|-------|-------|-----|-------|------|-------|
|           | mm   | 6     | 8     | 10  | 15    | 20   | 25    |
| Dim. (mm) | A    | 14    | 18    | 21  | 26    | 30   | 36    |
|           | B    | 23    | 28    | 31  | 38    | 42   | 50    |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3    | 4     |
|           | mm   | 32    | 40    | 50  | 65    | 80   | 100   |
| Dim. (mm) | A    | 43    | 47    | 54  | 68.6  | 78.2 | 96.3  |
|           | B    | 57    | 62    | 73  | 98    | 113  | 144.5 |

120

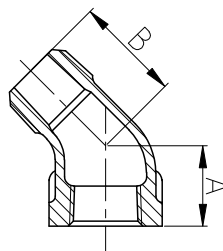
Elbow, 45°



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4 | 1     |
|-----------|------|-------|-------|-----|-------|-----|-------|
|           | mm   | 6     | 8     | 10  | 15    | 20  | 25    |
| Dim. (mm) | A    | 11    | 14    | 16  | 20    | 23  | 27    |
|           | B    | 23    | 28    | 31  | 38    | 42  | 50    |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3   | 4     |
|           | mm   | 32    | 40    | 50  | 65    | 80  | 100   |
| Dim. (mm) | A    | 31    | 33    | 37  | 50    | 55  | 66    |
|           | B    | 57    | 62    | 73  | 98    | 113 | 144.5 |

121

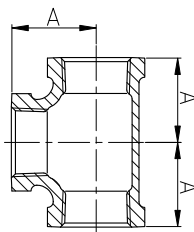
Street Elbow, 45°



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4  | 1    |
|-----------|------|-------|-------|-----|-------|------|------|
|           | mm   | 6     | 8     | 10  | 15    | 20   | 25   |
| Dim. (mm) | A    | 11    | 14    | 16  | 20    | 23   | 27   |
|           | B    | 23    | 28    | 31  | 38    | 42   | 50   |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3    | 4    |
|           | mm   | 32    | 40    | 50  | 65    | 80   | 100  |
| Dim. (mm) | A    | 31    | 33    | 37  | 50    | 55   | 66   |
|           | B    | 42    | 46    | 54  | 68.6  | 78.2 | 96.3 |

130

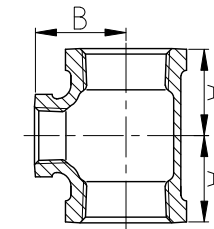
Tee



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4 | 1     |
|-----------|------|-------|-------|-----|-------|-----|-------|
|           | mm   | 6     | 8     | 10  | 15    | 20  | 25    |
| Dim. (mm) | A    | 14    | 18    | 21  | 26    | 30  | 36    |
|           | B    | 23    | 28    | 31  | 38    | 42  | 50    |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3   | 4     |
|           | mm   | 32    | 40    | 50  | 65    | 80  | 100   |
| Dim. (mm) | A    | 43    | 47    | 54  | 69    | 78  | 96    |
|           | B    | 57    | 62    | 73  | 98    | 113 | 144.5 |

130R

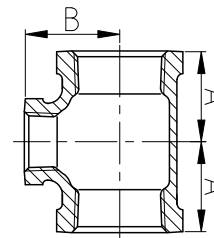
Reducing Tee



| Size      | Inch | 1/4X1/8 | 3/8X1/8 | 3/8X1/4 | 1/2X1/4 | 1/2X3/8 | 3/4X1/4 |
|-----------|------|---------|---------|---------|---------|---------|---------|
|           | mm   | 8X6     | 10X6    | 10X8    | 15X8    | 15X10   | 20X8    |
| Dim. (mm) | A    | 17      | 20.6    | 19      | 22      | 24      | 26.7    |
|           | B    | 15      | 21.6    | 20      | 22      | 23      | 27.4    |
| Size      | Inch | 3/4X3/8 | 3/4X1/2 | 1X1/4   | 1X3/8   | 1X1/2   | 1X3/4   |
|           | mm   | 20X10   | 20X15   | 25X8    | 25X10   | 25X15   | 25X20   |
| Dim. (mm) | A    | 25      | 27      | 28.2    | 28      | 30      | 33      |
|           | B    | 25      | 28      | 31.0    | 29      | 31      | 33      |

130R

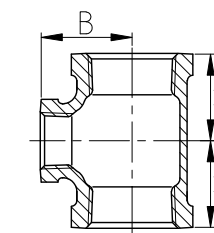
Reducing Tee



| Size      | Inch | 1 1/4X1/2   | 1 1/4X3/4 | 1 1/4X1 | 1 1/2X1/2 | 1 1/2X3/4 | 1 1/2X1 |
|-----------|------|-------------|-----------|---------|-----------|-----------|---------|
|           | mm   | 32X15       | 32X20     | 32X25   | 40X15     | 40X20     | 40X25   |
| Dim. (mm) | A    | 33          | 35        | 39      | 34        | 36        | 39      |
|           | B    | 36          | 38        | 41      | 39        | 41        | 44      |
| Size      | Inch | 1 1/2X1 1/4 | 2X1/2     | 2X3/4   | 2X1       | 2X1 1/4   | 2X1 1/2 |
|           | mm   | 40X32       | 50X15     | 50X20   | 50X25     | 50X32     | 50X40   |
| Dim. (mm) | A    | 44          | 37.9      | 37      | 40        | 45        | 48      |
|           | B    | 46          | 47.8      | 47      | 50        | 52        | 53      |

130R

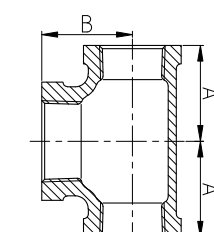
Reducing Tee



| Size      | Inch | 2 1/2X1 | 2 1/2X1 1/4 | 2 1/2X1 1/2 | 2 1/2X2 | 3X3/4  | 3X1    |
|-----------|------|---------|-------------|-------------|---------|--------|--------|
|           | mm   | 65X25   | 65X32       | 65X40       | 65X50   | 80X20  | 80X25  |
| Dim. (mm) | A    | 47.5    | 51.8        | 54.9        | 61      | 47.5   | 50.8   |
|           | B    | 60.2    | 62.2        | 63.8        | 66      | 66.3   | 67.6   |
| Size      | Inch | 3X1 1/4 | 3X1 1/2     | 3X2         | 3X2 1/2 | 4X2    | 4X3    |
|           | mm   | 80X32   | 80X40       | 80X50       | 80X65   | 100X50 | 100X80 |
| Dim. (mm) | A    | 55.1    | 58.2        | 64          | 72      | 70     | 84     |
|           | B    | 69.6    | 71.1        | 73          | 76      | 87     | 91     |

130R

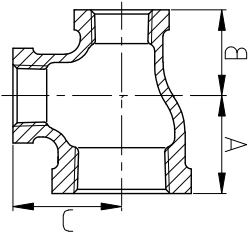
Reducing Tee



| Size      | Inch | 3/8X3/8X1/2 | 1/2X1/2X3/4       | 3/4X3/4X1     | 1X1X1 1/4 |
|-----------|------|-------------|-------------------|---------------|-----------|
|           | mm   | 10X10X15    | 15X15X20          | 20X20X25      | 25X25X32  |
| Dim. (mm) | A    | 23          | 28                | 33            | 41        |
|           | B    | 24          | 27                | 33            | 39        |
| Size      | Inch | 1X1X1 1/2   | 1 1/4X1 1/4X1 1/2 | 1 1/2X1 1/2X2 | 2X2X2 1/2 |
|           | mm   | 25X25X40    | 32X32X40          | 40X40X50      | 50X50X65  |
| Dim. (mm) | A    | 44          | 46                | 53            | 66        |
|           | B    | 39          | 44                | 48            | 61        |

130R

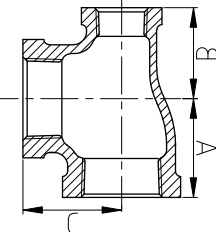
Reducing Tee



| Size      | Inch | 3/8X1/4X1/4 | 1/2X3/8X3/8    | 3/4X1/2X1/2 | 1X3/4X3/4 |
|-----------|------|-------------|----------------|-------------|-----------|
|           | mm   | 10X8X8      | 15X10X10       | 20X15X15    | 25X20X20  |
| Dim. (mm) | A    | 19          | 24             | 27          | 33        |
|           | B    | 18          | 21             | 26          | 30        |
|           | C    | 20          | 23             | 28          | 33        |
| Size      | Inch | 11/4X1X1    | 11/2X11/4X11/4 | 2X11/2X11/2 | 21/2X2X2  |
|           | mm   | 32X25X25    | 40X32X32       | 50X40X40    | 65X50X50  |
| Dim. (mm) | A    | 39          | 44             | 48          | 61        |
|           | B    | 36          | 43             | 47          | 57        |
|           | C    | 41          | 46             | 53          | 66        |

130R

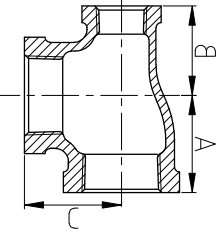
Reducing Tee



| Size      | Inch | 3/8X1/4X3/8 | 1/2X3/8X1/2   | 3/4X1/2X3/4   | 1X1/2X1     |
|-----------|------|-------------|---------------|---------------|-------------|
|           | mm   | 10X8X10     | 15X10X15      | 20X15X20      | 25X15X25    |
| Dim. (mm) | A    | 21          | 26            | 30            | 36          |
|           | B    | 20          | 23            | 28            | 31          |
|           | C    | 21          | 26            | 30            | 36          |
| Size      | Inch | 1X3/4X1     | 11/4X1/2X11/4 | 11/4X3/4X11/4 | 11/4X1X11/4 |
|           | mm   | 25X20X25    | 32X15X32      | 32X20X32      | 32X25X32    |
| Dim. (mm) | A    | 36          | 43            | 43            | 43          |
|           | B    | 33          | 36            | 38            | 41          |
|           | C    | 36          | 43            | 43            | 43          |

130R

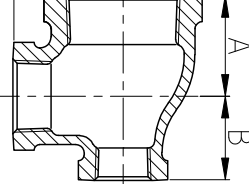
Reducing Tee



| Size      | Inch | 11/2X3/4X11/2 | 11/2X11/4X11/2 | 2X11/2X2 |  |
|-----------|------|---------------|----------------|----------|--|
|           | mm   | 40X20X40      | 40X32X40       | 50X40X50 |  |
| Dim. (mm) | A    | 47            | 47             | 54       |  |
|           | B    | 41            | 46             | 53       |  |
|           | C    | 47            | 47             | 54       |  |
| Size      | Inch |               |                |          |  |
|           | mm   |               |                |          |  |
| Dim. (mm) | A    |               |                |          |  |
|           | B    |               |                |          |  |
|           | C    |               |                |          |  |

130R

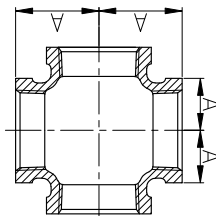
Reducing Tee



| Size      | Inch | 1X3/4X1/2   | 1X1/2X3/4 | 11/4X1X3/4 | 11/4X3/4X1 |
|-----------|------|-------------|-----------|------------|------------|
|           | mm   | 25X20X15    | 25X15X20  | 32X25X20   | 32X20X25   |
| Dim. (mm) | A    | 30          | 33        | 35         | 38.5       |
|           | B    | 27          | 28        | 33         | 35         |
|           | C    | 31          | 33        | 38         | 40         |
| Size      | Inch | 11/2X11/4X1 |           |            |            |
|           | mm   | 40X32X25    |           |            |            |
| Dim. (mm) | A    | 39          |           |            |            |
|           | B    | 39          |           |            |            |
|           | C    | 44          |           |            |            |

180

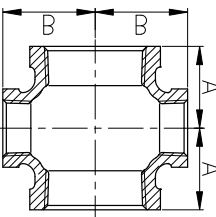
Cross



| Size      | Inch | 1/8  | 1/4  | 3/8  | 1/2 | 3/4  | 1  |
|-----------|------|------|------|------|-----|------|----|
|           | mm   | 6    | 8    | 10   | 15  | 20   | 25 |
| Dim. (mm) | A    | 14   | 18   | 21   | 26  | 30   | 36 |
|           | Size | Inch | 11/4 | 11/2 | 2   | 21/2 |    |
|           | mm   | 32   | 40   | 50   | 65  |      |    |
| Dim. (mm) | A    | 43   | 47   | 54   | 69  |      |    |

180R

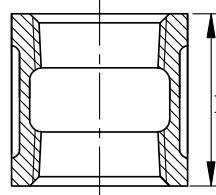
Reducing Cross



| Size      | Inch | 3/4X1/2 |  |  |  |  |
|-----------|------|---------|--|--|--|--|
|           | mm   | 20X15   |  |  |  |  |
| Dim. (mm) | A    | 30.5    |  |  |  |  |
|           | B    | 31      |  |  |  |  |
| Size      | Inch |         |  |  |  |  |
|           | mm   |         |  |  |  |  |
| Dim. (mm) | A    |         |  |  |  |  |
|           | B    |         |  |  |  |  |

220

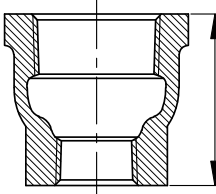
Coupling



| Size      | Inch | 1/8  | 1/4  | 3/8  | 1/2 | 3/4  | 1   |
|-----------|------|------|------|------|-----|------|-----|
|           | mm   | 6    | 8    | 10   | 15  | 20   | 25  |
| Dim. (mm) | A    | 20   | 25   | 27   | 33  | 36   | 43  |
|           | Size | Inch | 11/4 | 11/2 | 2   | 21/2 | 3   |
|           | mm   | 32   | 40   | 50   | 65  | 80   | 100 |
| Dim. (mm) | A    | 47   | 49   | 56   | 73  | 81   | 94  |

240

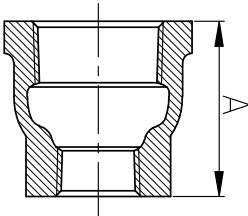
Reducing Coupling



| Size      | Inch | 1/4X1/8 | 3/8X1/8 | 3/8X1/4 | 1/2X1/8 | 1/2X1/4 |
|-----------|------|---------|---------|---------|---------|---------|
|           | mm   | 8X6     | 10X6    | 10X8    | 15X6    | 15X8    |
| Dim. (mm) | A    | 22      | 23      | 26      | 29      | 29      |
|           | Size | Inch    | 1/2X3/8 | 3/4X1/4 | 3/4X3/8 | 3/4X1/2 |
|           | mm   | 15X10   | 20X8    | 20X10   | 20X15   | 25X8    |
| Dim. (mm) | A    | 30      | 31      | 31      | 35      | 38      |

240

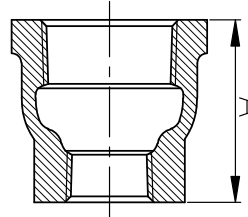
Reducing Coupling



| Size      | Inch | 1X3/8    | 1X1/2    | 1X3/4  | 11/4X1/2  | 11/4X3/4 | 11/4X1 |
|-----------|------|----------|----------|--------|-----------|----------|--------|
|           | mm   | 25X10    | 25X15    | 25X20  | 32X15     | 32X20    | 32X25  |
| Dim. (mm) | A    | 38       | 38       | 40     | 42        | 42       | 45     |
|           | B    | 8        | 8        | 9      | 9         | 9        | 9      |
| Size      | Inch | 11/2X1/2 | 11/2X3/4 | 11/2X1 | 11/2X11/4 | 2X1/2    | 2X3/4  |
|           | mm   | 40X15    | 40X20    | 40X25  | 40X32     | 50X15    | 50X20  |
| Dim. (mm) | A    | 45       | 45       | 45     | 48        | 52       | 52     |
|           | B    | 9        | 9        | 9      | 10        | 10       | 10     |

240

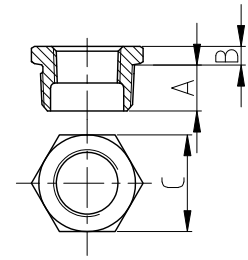
Reducing Coupling



| Size      | Inch | 2X1    | 2X11/4 | 2X11/2 | 21/2X11/4 | 21/2X11/2 | 21/2X2 |
|-----------|------|--------|--------|--------|-----------|-----------|--------|
|           | mm   | 50X25  | 50X32  | 50X40  | 65X32     | 65X40     | 65X50  |
| Dim. (mm) | A    | 52     | 52     | 52     | 83        | 83        | 83     |
|           | B    | 11     | 11     | 12     | 12        | 12        | 12     |
| Size      | Inch | 3X11/2 | 3X2    | 3X21/2 | 4X2       | 4X21/2    | 4X3    |
|           | mm   | 80X40  | 80X50  | 80X65  | 100X50    | 100X65    | 100X80 |
| Dim. (mm) | A    | 94     | 94     | 94     | 111       | 111       | 111    |
|           | B    | 12     | 12     | 12     | 15        | 15        | 15     |

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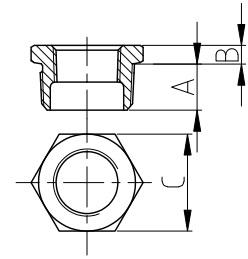
Outside Hex Bushing



| Size      | Inch | 1/4X1/8 | 3/8X1/8 | 3/8X1/4 | 1/2X1/8 | 1/2X1/4 | 1/2X3/8 |
|-----------|------|---------|---------|---------|---------|---------|---------|
|           | mm   | 8X6     | 10X6    | 10X8    | 15X6    | 15X8    | 15X10   |
| Dim. (mm) | A    | 11      | 12      | 12      | 14      | 14      | 14      |
|           | B    | 4       | 4       | 4       | 5       | 5       | 5       |
| Size      | Inch | 3/4X1/8 | 3/4X1/4 | 3/4X3/8 | 3/4X1/2 | 1X1/2   | 1X3/4   |
|           | mm   | 20X6    | 20X8    | 20X10   | 20X15   | 25X15   | 25X20   |
| Dim. (mm) | A    | 16      | 16      | 16      | 16      | 19      | 19      |
|           | B    | 6       | 6       | 6       | 6       | 6       | 6       |
| Dim. (mm) | C    | 29      | 29      | 29      | 29      | 36      | 36      |
|           | D    | 16      | 16      | 16      | 16      | 19      | 19      |

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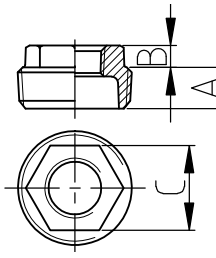
Outside Hex Bushing



| Size      | Inch | 11/4X3/4 | 11/4X1    | 11/2X1 | 11/2X11/4 | 2X11/4 |
|-----------|------|----------|-----------|--------|-----------|--------|
|           | mm   | 32X20    | 32X25     | 40X25  | 40X32     | 50X32  |
| Dim. (mm) | A    | 20       | 20        | 21     | 21        | 22     |
|           | B    | 7        | 7         | 8      | 8         | 9      |
| Size      | Inch | 2X11/2   | 21/2X11/2 | 21/2X2 | 3X2       | 3X21/2 |
|           | mm   | 50X40    | 65X40     | 65X50  | 80X50     | 80X65  |
| Dim. (mm) | A    | 22       | 27        | 27     | 29        | 29     |
|           | B    | 9        | 11        | 9      | 12        | 10     |
| Dim. (mm) | C    | 63       | 68        | 76     | 83        | 98     |
|           | D    | 22       | 27        | 27     | 29        | 29     |

241N

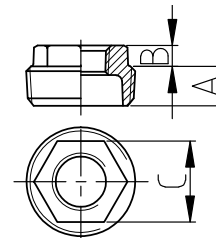
Inside Hex Bushing



| Size      | Inch | 1X1/4    | 1X3/8    | 11/4X1/4 | 11/4X3/8 | 11/4X1/2 | 11/2X1/4 |
|-----------|------|----------|----------|----------|----------|----------|----------|
|           | mm   | 25X8     | 25X10    | 32X8     | 32X10    | 32X15    | 40X8     |
| Dim. (mm) | A    | 19       | 19       | 20       | 20       | 20       | 21       |
|           | B    | 8        | 8        | 9        | 9        | 9        | 9        |
| Size      | Inch | 11/2X3/8 | 11/2X1/2 | 11/2X3/4 | 2X1/2    | 2X3/4    | 2X1      |
|           | mm   | 40X10    | 40X15    | 40X20    | 50X15    | 50X20    | 50X25    |
| Dim. (mm) | A    | 21       | 21       | 21       | 22       | 22       | 22       |
|           | B    | 9        | 9        | 9        | 10       | 10       | 10       |
| Dim. (mm) | C    | 28       | 34       | 41       | 34       | 41       | 50       |
|           | D    | 28       | 34       | 41       | 34       | 41       | 50       |

241N

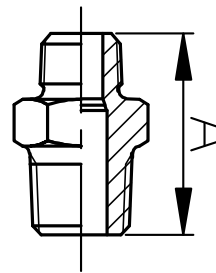
Inside Hex Bushing



| Size      | Inch | 21/2X1 | 21/2X11/4 | 3X1/2  | 3X3/4  | 3X1    |
|-----------|------|--------|-----------|--------|--------|--------|
|           | mm   | 65X25  | 65X32     | 80X15  | 80X20  | 80X25  |
| Dim. (mm) | A    | 27     | 27        | 29     | 29     | 29     |
|           | B    | 11     | 11        | 12     | 12     | 12     |
| Size      | Inch | 3X11/4 | 3X11/2    | 4X11/2 | 4X2    | 4X21/2 |
|           | mm   | 80X32  | 80X40     | 100X40 | 100X50 | 100X65 |
| Dim. (mm) | A    | 29     | 29        | 31     | 31     | 31     |
|           | B    | 12     | 12        | 15     | 15     | 15     |
| Dim. (mm) | C    | 61     | 68        | 68     | 83     | 98     |
|           | D    | 61     | 68        | 68     | 83     | 98     |

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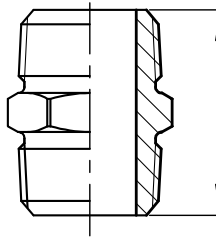
Reducing Hexagon Nipple



| Size      | Inch | 1/4X1/8 | 3/8X1/4 | 1/2X3/8 |  |  |
|-----------|------|---------|---------|---------|--|--|
|           | mm   | 8X6     | 10X8    | 15X10   |  |  |
| Dim. (mm) | A    | 26      | 31      | 39      |  |  |
|           | B    |         |         |         |  |  |
| Size      | Inch |         |         |         |  |  |
|           | mm   |         |         |         |  |  |
| Dim. (mm) | A    |         |         |         |  |  |
|           | B    |         |         |         |  |  |

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Hexagon Nipple

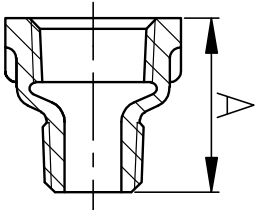


| Size      | Inch | 1/8  | 1/4  | 3/8  | 1/2  | 3/4 | 1  |
|-----------|------|------|------|------|------|-----|----|
|           | mm   | 6    | 8    | 10   | 15   | 20  | 25 |
| Dim. (mm) | A    | 25   | 30   | 31.5 | 39   | 41  | 50 |
|           | B    |      |      |      |      |     |    |
| Size      | Inch | 11/4 | 11/2 | 2    | 21/2 | 3   |    |
|           | mm   | 32   | 40   | 50   | 65   | 80  |    |
| Dim. (mm) | A    | 55   | 57   | 66   | 73   | 81  |    |
|           | B    |      |      |      |      |     |    |



246

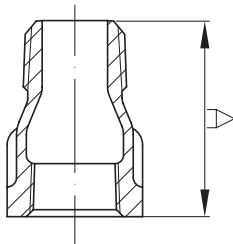
Reducing Extension Piece



| Size      | Inch | 1/4X1/8 | 3/8X1/4 | 1/2X3/8 | 1/2X1/2 | 3/4X1/2 |
|-----------|------|---------|---------|---------|---------|---------|
|           | mm   | 8X6     | 10X8    | 15X10   | 15X15   | 20X15   |
| Dim. (mm) | A    | 22.5    | 27.5    | 30      | 33      | 35      |
| Size      | Inch |         |         |         |         |         |
|           | mm   |         |         |         |         |         |
| Dim. (mm) | A    |         |         |         |         |         |

529A

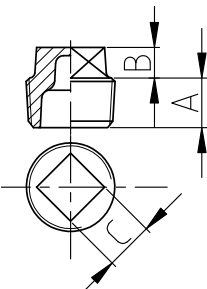
Extension Piece



| Size      | Inch | 1/2 | 3/4 |  |  |  |  |
|-----------|------|-----|-----|--|--|--|--|
|           | mm   | 15  | 20  |  |  |  |  |
| Dim. (mm) | A    | 42  | 47  |  |  |  |  |
| Size      | Inch |     |     |  |  |  |  |
|           | mm   |     |     |  |  |  |  |
| Dim. (mm) | A    |     |     |  |  |  |  |

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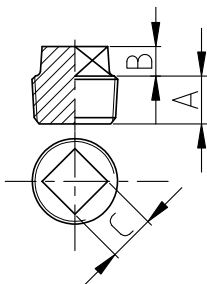
Cored Plug



| Size      | Inch | 1/2  | 3/4   | 1    | 1 1/4 | 1 1/2 |
|-----------|------|------|-------|------|-------|-------|
|           | mm   | 15   | 20    | 25   | 32    | 40    |
| Dim. (mm) | A    | 14   | 14    | 18   | 18    | 19    |
|           | B    | 10   | 11    | 13   | 14    | 16    |
|           | C    | 14.3 | 15.8  | 20.6 | 23.8  | 28.5  |
| Size      | Inch | 2    | 2 1/2 | 3    | 4     |       |
|           | mm   | 50   | 65    | 80   | 100   |       |
| Dim. (mm) | A    | 19   | 27    | 29   | 31    |       |
|           | B    | 17   | 19    | 20   | 23    |       |
|           | C    | 33.3 | 38.1  | 42.8 | 57.1  |       |

291S

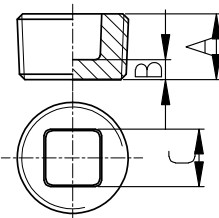
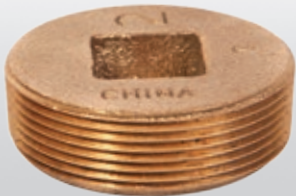
Solid Plug



| Size      | Inch | 1/8   | 1/4   | 3/8  | 1/2   | 3/4  | 1    |
|-----------|------|-------|-------|------|-------|------|------|
|           | mm   | 6     | 8     | 10   | 15    | 20   | 25   |
| Dim. (mm) | A    | 7     | 10    | 10   | 14    | 14   | 18   |
|           | B    | 6     | 7     | 8    | 10    | 11   | 13   |
|           | C    | 7.1   | 9.5   | 11.1 | 14.3  | 15.8 | 20.6 |
| Size      | Inch | 1 1/4 | 1 1/2 | 2    | 2 1/2 | 3    | 4    |
|           | mm   | 32    | 40    | 50   | 65    | 80   | 100  |
| Dim. (mm) | A    | 18    | 19    | 19   | 27    | 29   | 31   |
|           | B    | 14    | 16    | 17   | 19    | 20   | 23   |
|           | C    | 23.8  | 28.5  | 33.3 | 38.1  | 42.8 | 57.1 |

291N

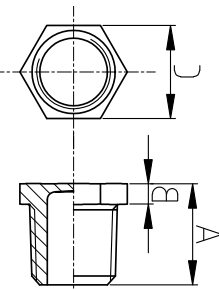
Countersunk Plug



| Size      | Inch | 1/2  | 3/4   | 1    | 1 1/4 | 1 1/2 |
|-----------|------|------|-------|------|-------|-------|
|           | mm   | 15   | 20    | 25   | 32    | 40    |
| Dim. (mm) | A    | 14   | 14    | 18   | 18    | 19    |
|           | B    | 2.3  | 2.5   | 2.8  | 3.0   | 3.3   |
|           | C    | 9.5  | 12.7  | 12.7 | 19.1  | 19.1  |
| Size      | Inch | 2    | 2 1/2 | 3    | 4     |       |
|           | mm   | 50   | 65    | 80   | 100   |       |
| Dim. (mm) | A    | 19   | 27    | 29   | 31    |       |
|           | B    | 3.8  | 4.3   | 4.8  | 5.6   |       |
|           | C    | 22.2 | 28.6  | 34.9 | 50.8  |       |

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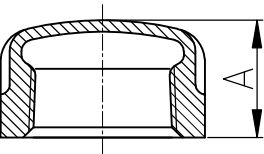
Hex Head Plug



| Size      | Inch | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 |
|-----------|------|-----|-----|-----|-----|-----|
|           | mm   | 6   | 8   | 10  | 15  | 20  |
| Dim. (mm) | A    | 14  | 18  | 19  | 25  | 26  |
|           | B    | 4.3 | 4.3 | 4.3 | 5   | 6   |
|           | C    | 12  | 15  | 18  | 23  | 28  |
| Size      | Inch |     |     |     |     |     |
|           | mm   |     |     |     |     |     |
| Dim. (mm) | A    |     |     |     |     |     |
|           | B    |     |     |     |     |     |
|           | C    |     |     |     |     |     |

300

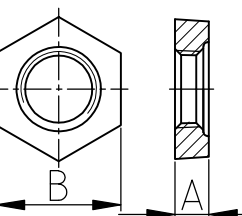
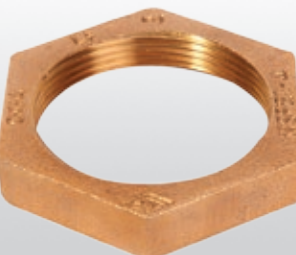
Cap



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4 | 1   |
|-----------|------|-------|-------|-----|-------|-----|-----|
|           | mm   | 6     | 8     | 10  | 15    | 20  | 25  |
| Dim. (mm) | A    | 12    | 15    | 16  | 19    | 21  | 25  |
|           | B    |       |       |     |       |     |     |
|           | C    |       |       |     |       |     |     |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3   | 4   |
|           | mm   | 32    | 40    | 50  | 65    | 80  | 100 |
| Dim. (mm) | A    | 28    | 29    | 34  | 43    | 46  | 53  |
|           | B    |       |       |     |       |     |     |
|           | C    |       |       |     |       |     |     |

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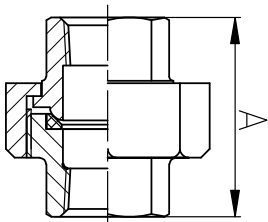
Locknut



| Size      | Inch | 1/8   | 1/4   | 3/8  | 1/2 | 3/4  | 1    |
|-----------|------|-------|-------|------|-----|------|------|
|           | mm   | 6     | 8     | 10   | 15  | 20   | 25   |
| Dim. (mm) | A    | 4.8   | 6.4   | 7.1  | 7.9 | 8.6  | 9.7  |
|           | B    | 17.5  | 21.3  | 25.4 | 30  | 36.3 | 44.5 |
|           | C    |       |       |      |     |      |      |
| Size      | Inch | 1 1/4 | 1 1/2 | 2    |     |      |      |
|           | mm   | 32    | 40    | 50   |     |      |      |
| Dim. (mm) | A    | 10.7  | 11.9  | 13.5 |     |      |      |
|           | B    | 53.3  | 59.7  | 73.2 |     |      |      |
|           | C    |       |       |      |     |      |      |

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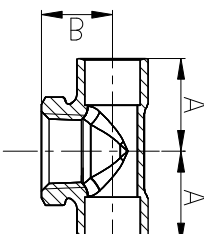
Union



| Size      | Inch | 1/8   | 1/4   | 3/8 | 1/2   | 3/4  | 1    |
|-----------|------|-------|-------|-----|-------|------|------|
|           | mm   | 6     | 8     | 10  | 15    | 20   | 25   |
| Dim. (mm) | A    | 32    | 37    | 41  | 44    | 49.5 | 52.5 |
|           | B    | 32    | 40    | 50  | 65    | 80   | 100  |
| Size      | Inch | 1 1/4 | 1 1/2 | 2   | 2 1/2 | 3    | 4    |
|           | mm   | 32    | 40    | 50  | 65    | 80   | 100  |
| Dim. (mm) | A    | 57.5  | 61.5  | 70  | 82    | 89   | 98   |
|           | B    | 57.5  | 61.5  | 70  | 82    | 89   | 98   |

F130

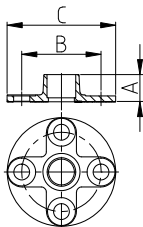
Adapter Tee



| Size      | Inch | 1/2  |  |  |  |  |
|-----------|------|------|--|--|--|--|
|           | mm   | 15   |  |  |  |  |
| Dim. (mm) | A    | 27   |  |  |  |  |
|           | B    | 21.5 |  |  |  |  |
| Size      | Inch |      |  |  |  |  |
|           | mm   |      |  |  |  |  |
| Dim. (mm) | A    |      |  |  |  |  |
|           | B    |      |  |  |  |  |

321H

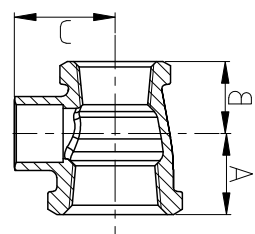
Companion Solder Flange



| Size      | Inch | 1     | 1 1/4 | 1 1/2 | 2     | 2 1/2 |
|-----------|------|-------|-------|-------|-------|-------|
|           | mm   | 25    | 32    | 40    | 50    | 65    |
| Dim. (mm) | A    | 25    | 27.4  | 30.4  | 36.7  | 40.8  |
|           | B    | 79.5  | 90    | 98.5  | 120.5 | 140   |
|           | C    | 108   | 117.5 | 127   | 152.4 | 177.8 |
| Size      | Inch | 3     | 4     |       |       |       |
|           | mm   | 80    | 100   |       |       |       |
| Dim. (mm) | A    | 45.5  | 58    |       |       |       |
|           | B    | 152.5 | 190.5 |       |       |       |
|           | C    | 190.5 | 228.6 |       |       |       |

F130R

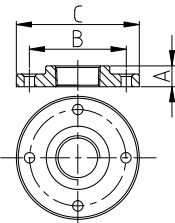
Reducing Adapter Tee



| Size      | Inch | 3/4X1/2 |  |  |  |  |
|-----------|------|---------|--|--|--|--|
|           | mm   | 20X15   |  |  |  |  |
| Dim. (mm) | A    | 22      |  |  |  |  |
|           | B    | 20      |  |  |  |  |
|           | C    | 27.5    |  |  |  |  |
| Size      | Inch |         |  |  |  |  |
|           | mm   |         |  |  |  |  |
| Dim. (mm) | A    |         |  |  |  |  |
|           | B    |         |  |  |  |  |
|           | C    |         |  |  |  |  |

321J

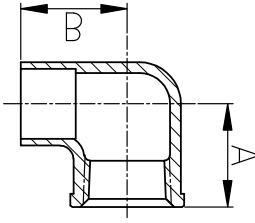
Floor Flange



| Size      | Inch | 1/2   | 3/4  | 1   | 1 1/4 | 1 1/2 |
|-----------|------|-------|------|-----|-------|-------|
|           | mm   | 15    | 20   | 25  | 32    | 40    |
| Dim. (mm) | A    | 13.5  | 15.3 | 18  | 19    | 22    |
|           | B    | 62    | 62   | 75  | 75    | 86.5  |
|           | C    | 88    | 88   | 102 | 102   | 114   |
| Size      | Inch | 2     |      |     |       |       |
|           | mm   | 50    |      |     |       |       |
| Dim. (mm) | A    | 25    |      |     |       |       |
|           | B    | 120.7 |      |     |       |       |
|           | C    | 150   |      |     |       |       |

91

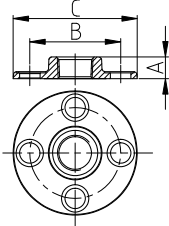
Adapter 90° Elbow



| Size      | Inch | 1/2  | 3/4  |  |  |  |
|-----------|------|------|------|--|--|--|
|           | mm   | 15   | 20   |  |  |  |
| Dim. (mm) | A    | 23.5 | 29   |  |  |  |
|           | B    | 24.5 | 32.5 |  |  |  |
| Size      | Inch |      |      |  |  |  |
|           | mm   |      |      |  |  |  |
| Dim. (mm) | A    |      |      |  |  |  |
|           | B    |      |      |  |  |  |

321L

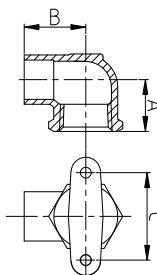
Companion Threaded Flange



| Size      | Inch | 1/2   | 3/4   | 1     | 1 1/4 | 1 1/2 |
|-----------|------|-------|-------|-------|-------|-------|
|           | mm   | 15    | 20    | 25    | 32    | 40    |
| Dim. (mm) | A    | 15    | 15.8  | 17.6  | 20.6  | 22.4  |
|           | B    | 60.5  | 70    | 79.5  | 90    | 98.5  |
|           | C    | 89    | 98.5  | 108   | 117.5 | 128   |
| Size      | Inch | 2     | 2 1/2 | 3     | 4     | 6     |
|           | mm   | 50    | 65    | 80    | 100   | 150   |
| Dim. (mm) | A    | 25.4  | 28.5  | 30.3  | 33.3  | 40    |
|           | B    | 120.5 | 140   | 152.5 | 190.5 | 241.3 |
|           | C    | 151   | 179.5 | 192   | 231   | 280   |

91C

Drop Ear 90° Elbow



| Size      | Inch | 1/2  |  |  |  |  |
|-----------|------|------|--|--|--|--|
|           | mm   | 15   |  |  |  |  |
| Dim. (mm) | A    | 21   |  |  |  |  |
|           | B    | 25   |  |  |  |  |
|           | C    | 35.5 |  |  |  |  |
| Size      | Inch |      |  |  |  |  |
|           | mm   |      |  |  |  |  |
| Dim. (mm) | A    |      |  |  |  |  |
|           | B    |      |  |  |  |  |
|           | C    |      |  |  |  |  |