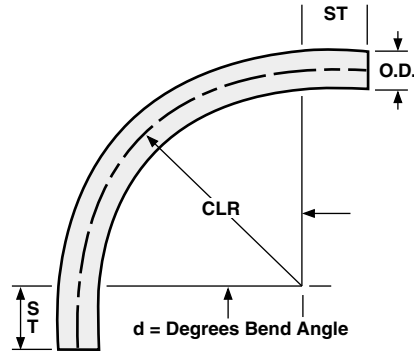


# Pipe and Tube Bends for pneumatic systems, short and long radius

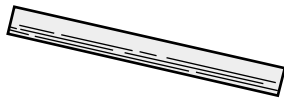
## Tube Bending Capabilities

Pipe and tube bends of up to 180° are readily available in aluminum, stainless, carbon steel and galvanized in the sizes listed. Other centerline radii are available but not shown. Special shapes, 'U' bends, offsets, and bifurcated bends available upon request.

Morris tube bends are manufactured in our Knoxville, Tennessee, Plant.



## Morris Pipe and Tubing Straights



Straight lengths of pipe and tubing are available in carbon steel, aluminum, and stainless – 1-1/2" O.D. thru 10" pipe in a variety of wall thicknesses.

**ORDER BENDS** by O.D., wall thickness, alloy, degree of bend, centerline radius and tangent.

**WALL THICKNESS:** 16 ga. (.063), 14 ga. (.083), and 11 ga. (.120) in tubing. Schedules 5, 10 and 40 pipe. Other wall thicknesses on request.

\*Carbon Steel, Schedule 40 Only.

**MATERIALS:** Aluminum is 6063-T1 extruded. Stainless is T304 ASTM A312 for Pipe and T304 ASTM A249 for tubing. Carbon steel ASTM A53 for pipe; A513 for tubing. Galvanized A53 for galvanized coated. Pipe and A513 for galvanized-coated tubing.

| Tube Size | Pipe Size | Outside Diameter |       | Common Centerline Radii (CLR) Inches                 | Std. Tangent (ST) |
|-----------|-----------|------------------|-------|--|-------------------|
|           |           | inches           | mm    |  |                   |
| 1"        |           | 1.0              | 25.4  | 3, 4, 6, 12  | 4"                |
|           | 1"        | 1.315            | 33.4  | 3, 5   | 4"                |
| 1-1/4"    |           | 1.25             | 31.8  | 3, 7.25  | 4"                |
|           | 1-1/4"    | 1.660            | 42.2  | 3.5, 4, 6.25   | 4"                |
| 1-1/2"    |           | 1.5              | 38.1  | 2.5, 6, 7.5, 9, 12, 15, 18, 24, 30, 36               | 4"                |
| 1-3/4"    |           | 1.75             | 44.5  | 2.5, 8, 9, 12, 15, 24, 30, 36, 48                    | 4"                |
|           | 1-1/2"    | 1.9              | 48.3  | 5, 6, 7.5, 9, 10, 12, 18, 24, 30, 36, 48             | 4"                |
| 2"        |           | 2.0              | 50.8  | 2.5, 5, 6, 8, 8.5, 9, 10, 12, 15, 18, 24, 30, 36, 48 | 4"                |
| 2-1/8"    |           | 2.125            | 54.0  | 5, 12, 24, 30, 36                                    | 4-1/4"            |
| 2-1/4"    |           | 2.25             | 57.2  | 3, 9, 12, 15, 17, 24, 30, 36                         | 4-1/2"            |
|           | 2"        | 2.375            | 60.2  | 6, 7.5, 9, 10, 12, 15, 17, 24, 30, 36, 48            | 4"                |
| 2-1/2"    |           | 2.5              | 63.5  | 4, 6, 9, 12, 15, 17, 24, 30, 36, 48                  | 5"                |
| 2-3/4"    |           | 2.75             | 69.9  | 17, 30, 36, 48                                       | 5-1/2"            |
|           | 2-1/2"    | 2.875            | 73.0  | 12, 12.5, 15, 17, 24, 30, 36, 60                     | 5"                |
| 3"        |           | 3.0              | 76.2  | 4.5, 7.5, 9, 10, 12, 15, 18, 24, 30, 36, 48, 60      | 6"                |
| 3-1/4"    |           | 3.25             | 82.6  | 17, 30, 36   | 6-1/2"            |
| 3-1/2"    | 3"        | 3.5              | 88.9  | 3.5, 6, 8.75, 12, 15, 16, 18, 24, 30, 36, 48         | 7" (6" - pipe)    |
| 3-3/4"    |           | 3.75             | 95.3  | 17, 24, 32, 36                                       | 7-1/2"            |
| 4"        | 3-1/2"    | 4.0              | 101.6 | 6, 10, 12, 16, 18, 20, 24, 30, 32, 36, 48, 60        | 8" (7" - pipe)    |
| 4-1/4"    |           | 4.25             | 107.9 | 16, 30, 36, 48, 60                                   | 8-1/2"            |
| 4-1/2"    | 4"        | 4.5              | 114.3 | 6, 9, 12, 16, 18, 20, 24, 30, 32, 36, 48, 60         | 9" (8" - pipe)    |
| 4-3/4"    |           | 4.75             | 120.7 | 36   | 9-1/2"            |
| 5"        |           | 5.0              | 127.0 | 7.5, 12.5, 17, 22, 24, 30, 36, 42, 48, 60            | 10"               |
|           | 5"        | 5.563            | 141.3 | 15, 20, 24, 30, 36, 42, 48, 60, 72                   | 10"               |
| 5-1/2"    |           | 5.5              | 139.7 | 30, 36   | 11"               |
| 6"        |           | 6.0              | 152.4 | 9, 15, 18, 24, 30, 36, 42, 48, 60, 72                | 12"               |
|           | 6"        | 6.625            | 168.2 | 18, 24, 30, 36, 42, 48, 60, 72                       | 12"               |
| 8"        |           | 8.0              | 203.2 | 12, 20, 32, 48, 60, 72                               | 16"               |
|           | 8"        | 8.625            | 219.1 | 24, 32, 40, 48, 60, 72                               | 16"               |
|           | 10"       | 10.75            | 273.1 | 40, 50   | 20"               |

Capabilities subject to change without notice.

| TEES   |     |     | WYES   |       |       |       |       |       | LATERALS |        |       |       |       |       |       |       |
|--------|-----|-----|--------|-------|-------|-------|-------|-------|----------|--------|-------|-------|-------|-------|-------|-------|
|        |     |     |        |       |       |       |       |       |          |        |       |       |       |       |       |       |
| OD     | A   | B   | OD     | 30° C | 30° D | 45° C | 45° D | 60° C | 60° D    | OD     | 30° E | 30° F | 45° E | 45° F | 60° E | 60° F |
| 2"     | 16" | 8"  | 2"     | 8"    | 8"    | 8"    | 8"    | 8"    | 8"       | 2"     | 8"    | 16"   | 8"    | 16"   | 8"    | 16"   |
| 3"     | 16" | 8"  | 3"     | 8"    | 8"    | 8"    | 8"    | 8"    | 8"       | 3"     | 10"   | 20"   | 8"    | 16"   | 8"    | 16"   |
| 4"     | 16" | 8"  | 4"     | 8"    | 8"    | 8"    | 8"    | 8"    | 8"       | 4"     | 12"   | 24"   | 10"   | 20"   | 10"   | 20"   |
| 4-1/2" | 18" | 9"  | 4-1/2" | 10"   | 10"   | 10"   | 10"   | 10"   | 10"      | 4-1/2" | 12"   | 24"   | 10"   | 20"   | 10"   | 20"   |
| 5"     | 18" | 9"  | 5"     | 11"   | 11"   | 11"   | 11"   | 11"   | 11"      | 5"     | 15"   | 30"   | 12"   | 24"   | 12"   | 24"   |
| 6"     | 20" | 10" | 6"     | 12"   | 12"   | 12"   | 12"   | 12"   | 12"      | 6"     | 18"   | 36"   | 15"   | 30"   | 15"   | 30"   |
| 8"     | 24" | 12" | 8"     | 14"   | 14"   | 14"   | 14"   | 14"   | 14"      | 8"     | 22"   | 40"   | 18"   | 36"   | 18"   | 36"   |

ORDER TEES by tube or pipe size, wall thickness, and metal.

O.D.s not listed, available on request.

ORDER LATERALS and WYES by tube or pipe size, wall thickness, metal and degree of angle.

For Prices and Delivery

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Phone: 814-459-1741

# Morris Pipe and Tube Material Specifications

## ■ Aluminum Pipe and Tubing

|            |            |           |
|------------|------------|-----------|
| Alloy 6063 | ASTM B-221 |           |
| 6063 T-6   |            | Straights |
| 6063 T-1   |            | Bends     |

## ■ Carbon-Steel Pipe and Tubing

|             |           |   |
|-------------|-----------|---|
| <i>Pipe</i> | ASTM A-53 | This specification covers seamless and welded black and galvanized steel pipe |
|-------------|-----------|---|

|             |            |  |
|-------------|------------|--|
| <i>Tube</i> | ASTM A-513 | This specification covers electric-resistance welded-carbon and alloy steel tubing for use as mechanical tubing. |
|-------------|------------|--|

## ■ Stainless-Steel Pipe and Tubing

|             |            |  |
|-------------|------------|--|
| <i>Pipe</i> | ASTM A-312 | This specification covers seamless and welded stainless-steel pipe intended for high-temperature and general corrosive service. Twenty-four grades are covered, the most common of which are 304, 316, 304L and 316L |
|-------------|------------|--|

|             |            |  |
|-------------|------------|--|
| <i>Tube</i> | ASTM A-249 | This specification covers stainless-steel tubing for general corrosion resisting and low- or high-temperature service. |
|-------------|------------|--|

## ■ Galvanized Pipe and Tubing

|             |           |                        |
|-------------|-----------|------------------------|
| <i>Pipe</i> | ASTM A-53 | Galvanized coated pipe |
|-------------|-----------|------------------------|

|             |            |                        |
|-------------|------------|------------------------|
| <i>Tube</i> | ASTM A-513 | Galvanized coated tube |
|-------------|------------|------------------------|

|  |      |                 |
|--|------|-----------------|
|  | ASTM | Galvanized tube |
|--|------|-----------------|

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