

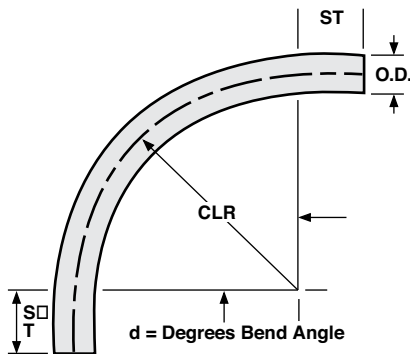
# Pipe and Tube Bends for pneumatic systems, *short and long radius*



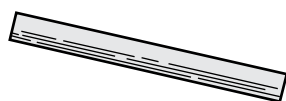
## Tube Bending Capabilities

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 RADI (CLR) INCHES	STD. TANGENT (ST)
		INCHES	MILLIMETERS		
1"		1.0	25.4	3, 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	6.25	4"
1-1/2"		1.5	38.1	2.5, 6, 7.5, 9, 12, 18, 24, 30, 36	4"
	1-1/2"	1.75	44.5	2.5, 8, 9, 15, 24, 30, 36, 48	4"
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, 3, 3.5, 4, 5, 6, 8.5, 9, 10, 12, 18, 24, 30, 36, 48	4"
2-1/8"		2.125	54.0	3, 5, 12, 24, 30, 36	4-1/4"
	2-1/8"	2.25	57.2	3, 9, 12, 15, 17, 24, 30, 36	4-1/2"
2-1/4"		2.375	60.2	6, 7.5, 10, 12, 17, 24, 30, 36, 48	4"
	2-1/4"	2.5	63.5	4, 6, 9, 12, 15, 17, 24, 30, 36, 48	5"
2-3/4"		2.75	69.9	2.75, 4, 17, 30, 36, 48	5-1/2"
	2-3/4"	2.875	73.0	12.5, 17, 24, 30, 36, 60*	5" *18"
3"		3.0	76.2	4, 4.5, 7.5, 9, 10, 12, 15, 18, 24, 30, 36, 48, 60*	6" *18"
3-1/4"		3.25	82.6	17, 30, 36	6-1/2"
3-1/2"	3"	3.5	88.9	3.5, 4.5, 6, 8.75, 12, 15, 16, 18, 24, 30, 36, 48	7"
3-3/4"		3.75	95.3	17, 24, 32, 36	7-1/2"
4"	3-1/2"	4.0	101.6	4, 5, 6, 7.75, 10, 12, 18, 20, 24, 30, 36, 48, 60	8"
4-1/4"		4.25	107.9	16, 30, 36	8-1/2"
4-1/2"	4"	4.5	114.3	6, 9, 12, 16, 18, 20, 24, 30, 36, 48, 60	9"
4-3/4"		4.75	120.7	36	9-1/2"
5"		5.0	127.0	5.5, 7.5, 12.5, 24, 30, 36, 42, 48, 60	10"
	5"	5.563	141.3	20, 30, 36, 42, 48, 60, 72*	10" *18"
5-1/2"		5.5	139.7	30, 36	11"
6"		6.0	152.4	9, 15, 24, 30, 36, 42, 48, 60, 72	12"
	6"	6.625	168.2	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, 42, 48, 60, 72	16"
	10"	10.75	273.1	40, 48, 50	20"
	12"	12.75	323.9	48, 60	24"

Capabilities subject to change without notice. For bends not shown on the list, please contact your sales representative.

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.

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

ODs not listed, available on request.

# Morris Coupling Company

## PIPE AND TUBE MATERIAL SPECIFICATIONS

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- **ALUMINUM PIPE AND TUBING**

Alloy 6063 ASTM B-221

6063 T-6	Straights
6063 T-1	Bends

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- **CARBON STEEL PIPE AND TUBING**

Pipe: ASTM A-53 This specification covers seamless and welded black and galvanized steel pipe.

Tube: ASTM A 513 This specification covers electric resistance welded carbon and alloy steel tubing for use as mechanical tubing.

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- **STAINLESS STEEL PIPE AND TUBING**

Pipe: 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.

Tube: ASTM A-249 This specification covers stainless steel tubing for general corrosion resisting and low or high temperature service.

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- **GALVANIZED PIPE AND TUBING**

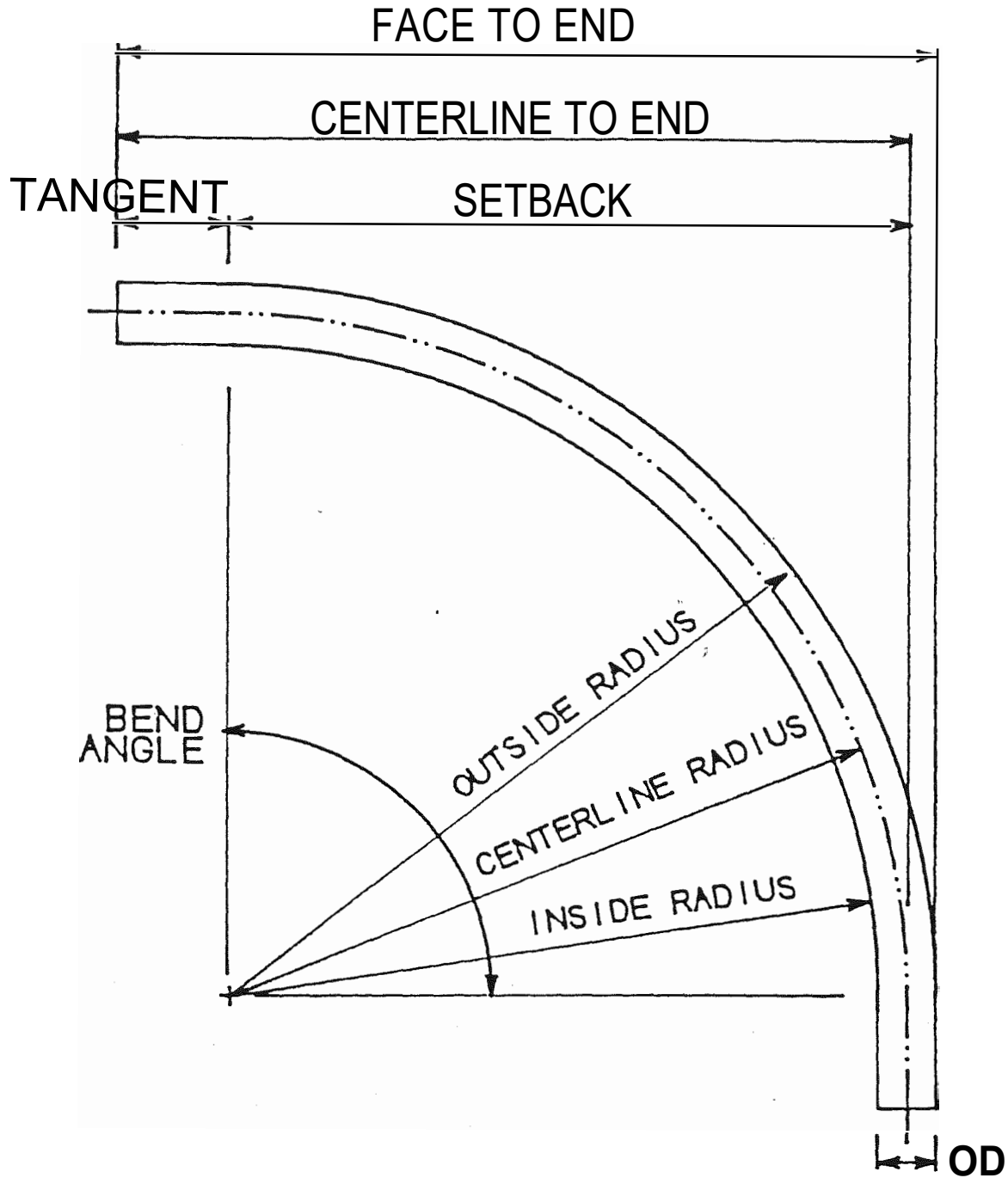
Pipe: ASTM A-53 Galvanized coated pipe

Tube: ASTM A-513 Galvanized coated tube

ASTM Galvanized tube

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# Morris Bend Nomenclature



## For 90 Degree Bends (as shown)

Face to End • CLR  $\uparrow$  Tangent  $\uparrow$  (1/2) OD  
 Centerline to End • CLR  $\uparrow$  Tangent  
 Setback • Centerline Radius (CLR)

## For Bends other than 90 Degrees

Setback • CLR X Tangent 1/2 Angle of Bend  
 Centerline to End • Setback  $\uparrow$  Tangent