



Stainless Steel Fabrication

Carbon Steel Fabrication

Flare / Flange / Braze Capabilities

Dimensions (in)		Material	
Diameter	Wall Thickness	304 Seamless	316 Seamless
0.25	0.028	x	x
	0.035	x	x
	0.049	x	x
	0.065	x	x
	0.083	x	x
0.375	0.035	x	x
	0.049	x	x
	0.065	x	x
	0.083	x	x
	0.095	x	x
0.5	0.049	x	x
	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.120	x	x
0.625	0.049	x	x
	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
0.75	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
	0.120	x	x
1	0.049	x	x
	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
1.25	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
	0.120	x	x
1.5	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
	0.120	x	x
2	0.065	x	x
	0.083	x	x
	0.095	x	x
	0.109	x	x
	0.120	x	x

This table shows all MultiFlow stainless steel tube bending options. Includes two types of stainless steel tubing, 304 and 316 Seamless.

Dimensions (in)		Material				
Diameter	Wall Thickness	A513 TYPE1	A513 TYPE5	A513 TYPE5, 1026	SAE J524	SAE J525
0.25	0.035				x	x
	0.049				x	
	0.065				x	
0.375	0.035		x		x	x
	0.049		x		x	x
	0.065		x		x	x
	0.083		x		x	x
	0.095		x		x	x
0.5	0.049		x		x	x
	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.120	x	x		x	x
0.625	0.049	x	x		x	x
	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
0.75	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
	0.120	x	x		x	x
1	0.049	x	x		x	x
	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
1.25	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
	0.120	x	x		x	x
1.5	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
	0.120	x	x		x	x
2	0.065	x	x		x	x
	0.083	x	x		x	x
	0.095	x	x		x	x
	0.109	x	x		x	x
	0.120	x	x		x	x

This table shows all MultiFlow carbon steel tube Bending options. Includes 5 types of carbon steel tubing, A513 Type 1 and 5, A513 Type 5 1026, SAE J524/J525

Dimensions (in)					Flare / Flange / Braze			
Diameter	Grip length	Min Straight Due to Bending	Min Straight For Flaring	Bend Radius	Wall Thickness	Can Flare (J533 / ISO8483-2)	Can Flange (J1453 / ISO8483-3)	Can Braze (Standard)
0.25	0.5	0.625	2	0.5	0.035	x		x
					0.049	x		x
					0.065	x		x
					0.035	x		x
					0.049	x		x
	3	0.065	x		x			
		0.035	x		x			
		0.049	x		x			
		0.065	x		x			
		0.035	x		x			
0.375	1	1.125	1.3	1	0.049	x	x	x
					0.065	x	x	x
					0.083	x	x	x
					0.095	x	x	x
					0.120	x	x	x
	1.125	0.035	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
		0.095	x	x	x			
0.5	1	1.125	1.6	1	0.049	x	x	x
					0.065	x	x	x
					0.083	x	x	x
					0.095	x	x	x
					0.120	x	x	x
	1.5	0.035	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
		0.095	x	x	x			
0.625	1	1.125	1.9	1.25	0.049	x	x	x
					0.065	x	x	x
					0.083	x	x	x
					0.095	x	x	x
					0.109	x	x	x
	1.5	0.120	x	x	x			
		0.188	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
0.75	1.5	1.625	1.5	2	0.065	x	x	x
					0.083	x	x	x
					0.095	x	x	x
					0.109	x	x	x
					0.120	x	x	x
	3	0.156	x	x	x			
		0.188	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
1	2	2.125	2	3	0.095	x	x	x
					0.109	x	x	x
					0.120	x	x	x
					0.156	x	x	x
					0.188	x	x	x
	4.5	0.25	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
		0.095	x	x	x			
1.25	3	3.125	2.2	3	0.109	x	x	x
					0.120	x	x	x
					0.156	x	x	x
					0.188	x	x	x
					0.25	x	x	x
	3.75	0.375	x	x	x			
		0.049	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
		0.095	x	x	x			
1.5	3	3.125	2.7	3	0.109	x	x	x
					0.120	x	x	x
					0.134	x	x	x
					0.156	x	x	x
					0.188	x	x	x
	3	0.25	x	x	x			
		0.375	x	x	x			
		0.065	x	x	x			
		0.083	x	x	x			
		0.095	x	x	x			
2	3.5	3.625	n/a	3	0.109	x	x	x
					0.065	x	x	x

This table shows all MultiFlow tube fabrication abilities including Flaring, Flanging, Brazing, and the specifications along with them.

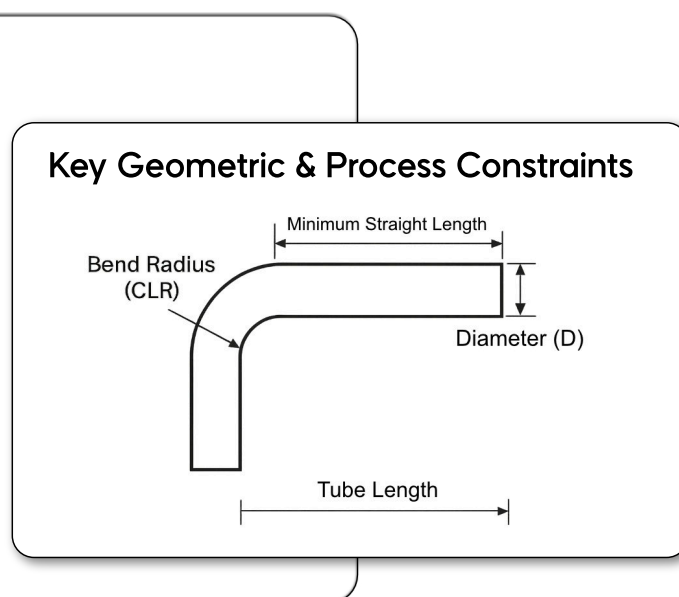
How to Read This Capability Chart:

- All dimensions are shown in inches, unless otherwise noted.
- An "X" indicates a proven production capability for the listed operation, material, diameter, and wall thickness.
- Blank cells indicate combinations that are not currently supported or have not been validated.
- Minimum straight lengths are required before and after bends to allow for flaring, flanging, or brazing operations.
- Capabilities shown represent repeatable manufacturing ranges, not theoretical material limits.

Parts approaching capability boundaries should be reviewed by MultiFlow Solutions engineering.

Applicable Standards & Technical Basis:

- Bend Radius (CLR):**
Tighter bend radii increase forming stress and minimum straight-length requirements.
- Diameter-to-Thickness Ratio (D/t):**
Higher D/t ratios allow simplified stress modelling; lower D/t ratios require thick-wall analysis.
- Post-Bend Operations:**
Flaring, flanging, and brazing require sufficient straight length to ensure concentricity, sealing integrity, and joint strength.
- Material Effect:**
Stainless steels require more conservative forming limits than carbon steels due to higher work-hardening rates.



Referenced Standards

- Carbon Steel Tubing:**
ASTM A513 (Type 1, Type 5, Type 5 / 1026), SAE J524, SAE J525
- Stainless Steel Tubing:**
ASTM A312 / A312M (304 & 316 Seamless)
- Flaring & Flanging Standards:**
SAE J533 / ISO 8434-2 (Flares)
SAE J1453 / ISO 8434-3 (Flanges)

All calculations and limits are based on recognized industry standards and validated production experience.