AIR BENDING FORCE CHART

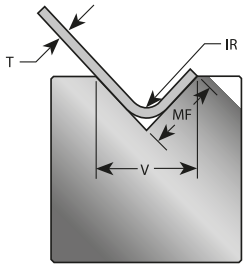
IMPERIAL TONNAGE • METRIC V-OPENINGS

NOTE: Formulas and chart are for reference only.

T = Material Thickness; V = V-Opening; MF = Minimum Flange Length; IR = Inside Radius

STANDARD FORMULAS FOR SELECTING A V-OPENING
Material Thickness:

8.0 mm or Less = T x 8
9.00mm – 13.00mm = T x 10
14.00mm & Thicker = T x 12



GAUGE	DEC. inch [mm]	V (mm)	4	6	7	8	10	12	14	16	20	22	25	32	40	50	63	80	100	125	160	200	250	305
		V (in.)	0.157	0.236	0.276	0.315	0.394	0.472	0.551	0.630	0.787	0.866	0.984	1.260	1.575	1.969	2.480	3.150	3.937	4.921	6.299	7.874	9.843	12
		MF	**0.110**	**0.165**	0.193	0.220	0.276	0.331	0.397	0.454	0.567	0.67	0.709	0.945	1.181	1.476	1.860	2.362	2.953	3.789	4.850	6.063	7.579	8.04
		IR	0.026	0.039	0.046	0.052	0.066	0.079	0.092	0.105	0.131	0.155	0.164	0.210	0.262	0.328	0.413	0.525	0.656	0.820	1.05	1.312	1.640	1.80
20	0.036 [.9]	TONS PER FOOT	5.7	3.0	2.4	2.1	1.6	1.2																
18	0.048 [1.2]			7.7	4.9	4.1	3.0	2.4	2.0	1.8														
16	0.060 [1.5]					7.0	5.2	4.1	3.4	3.0	2.2	2.1												
14	0.075 [1.9]						8.9	6.9	5.8	5.0	3.7	3.4	2.8											
13	0.090 [2.3]							10.8	8.9	7.6	5.6	5.1	4.3											
12	0.105 [2.7]							15.9	13.0	11.0	8.0	7.3	6.1	4.9										
11	0.120 [3]									15.3	10.9	10.0	8.2	6.6	5.0									
10	0.135 [3.4]											13.2	10.9	8.6	6.5	4.7								
9	0.150 [3.8]												14.0	11.0	8.2	5.9								
3/16"	0.188 [4.8]												24.1	18.7	13.9	9.8	7.2							
1/4"	0.250 [6.35]														27.2	19.0	13.8	10.2						
5/16"	0.313 [8]															32.4	23.2	17.0	12.7					
3/8"	0.375 [9.5]																35.6	25.8	19.1	15.6				
1/2"	0.500 [12.7]																		37.1	30.0	21.8			
5/8"	0.625 [16]																		63.1	50.1	36.2	27.3	20.3	16.4
3/4"	0.750 [19]																				55.2	41.2	30.4	24.4
1"	1.000 [25.4]																					80.2	58.3	46.4

Larger v-openings generate less tonnage.

Smaller v-openings gene rate increased tonnage and are NOT recommended.

NOTE:
The chart above is based on mild steel (tensile strength of 65,000 PSI) formed to an included angle of 88° until V80mm, 80° until V160mm and 70° V200mm and above. See chart to the right for other materials. Forming to other angles will change the Minimum Flange (MF), Inside Radius (IR) and tonnage.

Soft Brass =	Tons x 50%
Soft Aluminum =	Tons x 50%
Heat Treated Aluminum Alloys =	Tons x 100%
Stainless Steel =	Tons x 135%
High Strength Steel (100) =	Tons x 225%

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