





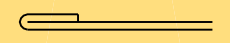



# POWER BRAKE DIES, INC.

## Tonnage Calculations "RULE OF THUMB" Chart

There are numerous factors that determine the tonnage that a tool will perform at. They include the tools design and condition, the presses design and condition, the material being formed and the parts characteristics are just a few to consider. This guide can be used as a "Rule Of Thumb" when making your calculations.

All results are an approximation and your results may vary.

Operation	Description	Bending Formula per foot tonnage	Examples 16ga (.060) mild steel
	<b>Vee Rib Shape Bottoming</b> Bottom Bending with Stock Thickness Radius on punch nose. <b>Note:</b> Bending with less than stock thickness radii increases tonnage DRASTICALLY	<b>450 x stock thickness</b> <small>vee is greater than 10 x's stock thickness</small>  <b>600 x stock thickness</b> <small>vee is less than 10 x's stock thickness</small>	<b>450 x .060 = 27</b> <b>27 tons per foot</b>  <b>600 x .060 = 36</b> <b>36 tons per foot</b>
	<b>Vee Rib Shape Air Bending</b> Air Bending Vee Rib shape All radii on part get larger	<b>200 x stock thickness</b> <small>vee is greater than 10 x's stock thickness</small>	<b>200 x .060 = 12</b> <b>12 tons per foot</b>
	<b>"W" Die Shape</b> (3) 90° bends with 1 stroke tonnage depends on part configuration <b>Note:</b> Bending with less than stock thickness radii increases tonnage DRASTICALLY	<b>450 x stock thickness</b> to <b>600 x stock thickness</b>	<b>450 x .060 = 27</b> <b>27 tons per foot</b>  <b>600 x .060 = 36</b> <b>36 tons per foot</b>
	<b>Open Hat Channel Bottoming</b> Bending (4) open angle bends with 1 stroke. stock thickness radii	<b>450 x stock thickness</b>	<b>450 x .060 = 27</b> <b>27 tons per foot</b>
	<b>Open Hat Channel Bottoming</b> Bending (4)90° angle bends with 1 stroke. stock thickness radii recommended	<b>600 x stock thickness</b>	<b>600 x .060 = 36</b> <b>36 tons per foot</b>
	<b>Hemming Closing Operation</b> Secondary or closing operation after acute bend has been put on.	<b>420 x stock thickness</b> completely flat hem  <b>300 x stock thickness</b> tear drop hem	<b>420 x .060 = 26</b> <b>26 tons per foot</b>  <b>300 x .060 = 18</b> <b>18 tons per foot</b>
	<b>Radius Shape</b> Form fitted radius set	<b>180 x stock thickness</b>  <b>300 x stock thickness</b> less than stock thickness	<b>180 x .060 = 11</b> <b>11 tons per foot</b> <b>300 x .060 = 18</b> <b>18 tons per foot</b>
<b>All of the examples shown here are 16ga (.060) mild steel.</b> Stainless Steel factor 1.55      example: 16ga mild steel = 9 tons per foot x 1.55 for stainless equals 14 tons per foot Aluminum (5052-H34) factor .65      example: 16ga mild steel = 9 tons per foot x .65 for aluminum equals 6 tons per foot			