



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	Examples 16ga (.060) mild steel
	Vee Shape Bottoming	Bottom Bending with Stock Thickness Radius on punch nose. Note: Bending with less than stock thickness radii increases tonnage DRASTICALLY	150 x stock thickness	150 x .060 = 9 9 tons per foot
	Vee Shape Air Form	Air Bending over vee 8 times stock thickness minimum	60 x stock thickness	60 x .060 = 3.6 4 tons per foot
	Wiping Shape	Holding material with spring pad on forming anvil and wiping with properly fit forming blade	250 x stock thickness	250 x .060 = 15 15 tons per foot
	Offset Shape Bottoming	Bending (2) 90° angles with a certain in to out dimension. stock thickness radii Note: Bending with less than stock thickness radii increases tonnage DRASTICALLY	300 x stock thickness <small>8 times stock thickness in to out dimension minimum</small> 450 x stock thickness <small>6 times stock thickness in to out dimension minimum</small> 600 x stock thickness <small>4 times stock thickness in to out dimension minimum</small>	300 x .060 = 18 18 tons per foot 450 x .060 = 27 27 tons per foot 600 x .060 = 36 36 tons per foot
	Offset Shape Air Form	Air Bending Offsets Bending a certain in to out dimensions. radii grow & angles aren't always 90° You give up some accuracy for less tonnage.	150 x stock thickness <small>8 times stock thickness in to out dimension minimum</small>	150 x .060 = 9 9 tons per foot
	Material Thickness Offset Shape	Pushing material down approx a stock thickness. Usually for a lap joint angles are open	600 x stock thickness	600 x .060 = 36 36 tons per foot
	Channel Shape	Wiping 2 legs up approx 12 stock thickness. between legs stock thickness radii	300 x stock thickness	300 x .060 = 18 18 tons per foot