Basic Conversions and Calculations

(1) Ounce	= 28.35 Grams	EX.: 12.35 oz. MULTIPLIED BY **28.35** = 350 g
(1) Gram	= 0.035 Ounces	EX.: 6.23 g MULTIPLIED BY **0.035** = .218 oz.
(1) Millimeter	= 0.039 Inches	EX.: 27.38 mm MULTIPLIED BY **0.039** = 1.068 in.
(1) Inch	= 25.40 Millimeter	EX.: .25 in. MULTIPLIED BY **25.40** = 6.350 mm

TO CALCULATE PART WEIGHT:

ENGLISH: Part Volume (in^3) DIVIDED BY Specific Volume of Material (in^3/lb) = lbs.
EX.: 5.62 in^3 ÷ 23.0 in^3/lb. = 0.244 lbs.

METRIC: **(**Part Volume (mm3) DIVIDED BY 1000 mm^3/g**)** MULTIPLIED BY Specific Gravity of Material = grams
EX.: **(**145.38 mm3 ÷ 1000 mm^3/g**)** X 1.20 = 0.174 g

TO CALCULATE SHOT WEIGHT:

(Part Weight MULTIPLIED BY Number of Cavities**)** PLUS Runner Weight = Shot Size
EX.: **(**0.006 oz. part X 16 Cavities**)** + 1.23 oz. runner = 1.33 oz. shot

TO CALCULATE SHOT SIZE FOR BARREL SHOT SIZE:

Shot Weight (ounces) DIVIDED BY Specific Gravity of Material = Shot Size**
** Typically the shot size should be 1/3 to 3/4 of the barrel shot size – depending on cycle
EX.: 1.33 oz. shot weight ÷ 0.9 (PP) = 1.48 oz.

TO CALCULATE PRESS TONNAGE:

(Projected Area of Molded Part (in^2) MULTIPLIED BY Number of Cavities**)** MULTIPLIED BY Tons per $Inch^2$ Value for Material
EX.: **(**2.50 in. long X 1.38 in. wide X 4 cavities**)** X 2.5 (PP) tons/in^2 = 34.5 tons clamp

TO ADD SHRINKAGE TO A PART DIMENSION:

Part dimension MULTIPLIED BY **(**1 + shrinkage value**)**
Ex.: 1.293 X **(**1 + 0.006**)** = 1.301

TO REMOVE SHRINK FROM A STEEL DIMENSION:

Steel dimension DIVIDED BY **(**1 + shrinkage value**)**
Ex.: 2.492 ÷ **(**1 + 0.006**)** = 2.477