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 (in³) DIVIDED BY Specific Volume of Material (in³/lb) = lbs.
EX.: 5.62 in³ ÷ 23.0 in³/lb. = 0.244 lbs.

METRIC: (Part Volume (mm³) DIVIDED BY 1000 mm³/g) MULTIPLIED BY Specific Gravity of Material = grams
EX.: (145.38 mm³ ÷ 1000 mm³/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 (in²) MULTIPLIED BY Number of Cavities) MULTIPLIED BY Tons per Inch² Value for Material
EX.: (2.50 in. long X 1.38 in. wide X 4 cavities) X 2.5 (PP) tons/in² = 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