

# DZynSource Mold Engineering Software Feature List

## Converter for Hours into Days or Weeks

## D.C. Electrical Calculations: 9 Different Ohm's Law Calculations

### Fluids Calculations:

- Bubbler sizing
- Continuity Eq.
- Equivalent Hydraulic Diameter - General Case
- Equivalent Hydraulic Diameter - Annular Channel
- Hydraulic Cylinder Calculations
- Pneumatic Cylinder Calculations
- Pressure Losses (Darcy's Equation)
- Pressure Loss or Flow Rate Through an Orifice
- Pressure Losses in Valves and Fittings
- Reynolds Number Calculations

## Galvanic Table

## Gate Sizing: Hot Tip, Edge Gate, & Sub-Gate

## Helix and Cam Angles

**Hot Runner Checklist** - set up as a word processor so you can add your own items.

### Machining Calculations:

- Effective Cutter Diameter
- Feed Rate / Feed Per Tooth
- Inches per minute <> Inches Per Revolution
- Surface Feet Per Minute
- Surface Roughness
- 3-Sided Cutter Angle Calculator

### Material Properties:

- 36 different molds making steels, aluminums, and high conductivity alloys.
- Can open up to 4 properties lists for easy comparison.

**Mold and Plate Weight Calculator:** steel or aluminum, based on solid block size

### Molding Calculations:

- Chiller Sizing, includes the number of BTU's of heat to be removed per hour, the gallons per minute of water required to remove the heat content of the plastic.
- Clamp force table, by material type

### Molding Calculations Continued:

- Cooling Time Estimator - Ballman Shusman method
- Colorant Let Down Weight Calculator
- Minimum Mold Open Time- time for the highest part to drop below the mold

Pounds or Kilograms of Material per hour  
Plastic Shrink Rate Table and Steel and Plastics Size Calculator  
Tie Bar Stretch

### **Production Calculations:**

Pounds or Kilograms of Material per hour (Second location, for convenience)  
Molding Capacity: single or multi-molds. Parts per minute, hour, day, week, 4 weeks, and year.  
Converter for Hours into Days or Weeks (Second location, for convenience)  
Number of cavities required, based on production needs.  
Number of plastic parts that can be molded in a given time.  
Time to mold a certain quantity of parts.

### **Runner Size Calculator**

### **Strength of Materials Calculations:**

Beam Deflections, 9 different loading and support scenarios  
Circular discs, fixed or supported circumference, uniform load or spot load  
Elastic Strain:  
    Uniform Cross-section, single material  
    Uniform Cross-section, two materials assembly  
    Tapered Cross-section, single material  
Hoop Stress  
Leader Pin Bend Calculator, with 1, 2, or 3 moving plates; with plate weight estimator  
Long Column with central loading, critical load calculator  
L/K Test to determine if the long column calculator is the appropriate method.  
Moment of Inertia Calculator, also calculates area, Radius of Gyration, Section Modulus, and distance to extreme fiber of 10 common geometric shapes.  
Mold Plate Expansion due to internal pressure. Designed especially for side action molds. Includes blind or through pocket comparison.

**Surface Finish Tables:** SPI/SPE comparison, RA vs. RMS inch and metric, grinding grit & VDI

### **Thermal Calculations:**

Thermal Expansion Coefficient calculator for 30 different mold making metals. Calculate expansion, initial size, or final size.  
Chiller Sizing, includes the number of BTU's of heat to be removed per hour, the gallons per minute of water required to remove the heat content of the plastic. (Second location, for convenience)

### **Thread Properties:**

Three wire size, also includes largest, smallest and best wire size. Inch and metric.  
Pipe Threads: Tap drills size for N.P.T. and B.S.P.T. threads, with & w/out pipe reamer.  
Properties of Threads: includes major, minor, and tap drill diameters. Also includes tensile stress area and a torque calculator.

## **Trigonometry**

Circular segment calculator

Decimal degrees to Degrees, Minute, Seconds Converter. Works for both directions.

Right Angle Trigonometry.

Roll Dimension Calculator, Obtuse and acute angles.

Sine plate gage block calculator.

Tooling ball dimension calculator.

## **Unscrewing Mold Calculations**

### **Vent Calculator**

Vent depth table, by material type.

Vent width calculator.