

## METRIC CONVERSION GUIDE

### CONVERSION OF METRIC UNITS OF MEASUREMENTS INTO CUSTOMARY EQUIVALENTS

To convert from	To	Multiply by
Millimeters (mm)	Inches (in.)	$3.937 \times 10^{-2}$
Meters (m)	Inches (in.)	$3.937 \times 10$
Square Millimeters (mm <sup>2</sup> )	Square Inches (in. <sup>2</sup> )	$1.55 \times 10^{-3}$
Square Meters (m <sup>2</sup> )	Square Inches (in. <sup>2</sup> )	$1.55 \times 10^3$
Cubic Millimeters (mm <sup>3</sup> )	Cubic Inches (in. <sup>3</sup> )	$6.10234 \times 10^{-5}$
Cubic Meters (m <sup>3</sup> )	Cubic Inches (in. <sup>3</sup> )	$6.10234 \times 10^4$
Grams (g)	Ounces (avdp) (oz)	$3.5274 \times 10^{-2}$
Kilograms (kg)	Pounds (avdp) (lb)	2.20462
Newtons (N)	Pound Force (lbf)	$2.248 \times 10^{-1}$
Kilogram Force Per Square Millimeter (kgf/mm <sup>2</sup> )	Pounds Per Square Inch (psi)	$1.4223 \times 10^3$
Newton Per Square Millimeter (N/mm <sup>2</sup> )	Pounds Per Square Inch (psi)	$1.45038 \times 10^2$
Newton Per Square Meter (N/m <sup>2</sup> )	Pounds Per Square Inch (psi)	$1.45038 \times 10^{-4}$
Newton-Meter (N.m)	Ounce-Inch (oz-in.)	$1.41612 \times 10^2$
Newton-Meter (N.m)	Pound-Inch (lb-in.)	8.85073
Newton-Meter (N.m)	Pound-Foot (lb-ft)	$7.3756 \times 10^{-1}$
Degree Fahrenheit	Degree Celsius	$t_c = (t_f - 32)/1.8$
Kelvin (K)	Degree Celsius	$t_c = t_k - 273.15$

### CONVERSION OF CUSTOMARY UNITS OF MEASURE INTO METRIC EQUIVALENTS

Inches (in.)	Millimeters (mm)	$2.54 \times 10$
Inches (in.)	Meters (m)	$2.54 \times 10^{-2}$
Square Inches (in. <sup>2</sup> )	Square Millimeters (mm <sup>2</sup> )	$6.4516 \times 10^2$
Square Inches (in. <sup>2</sup> )	Square Meters (m <sup>2</sup> )	$6.4516 \times 10^{-4}$
Cubic Inches (in. <sup>3</sup> )	Cubic Millimeters (mm <sup>3</sup> )	$1.638706 \times 10^4$
Cubic Inches (in. <sup>3</sup> )	Cubic Meters (m <sup>3</sup> )	$1.638706 \times 10^{-5}$
Ounces (avdp) (oz)	Kilograms (kg)	$2.83495 \times 10^{-2}$
Pounds (avdp) (lb)	Kilograms (kg)	$4.53592 \times 10^{-1}$
Pound Force (lbf)	Newtons (N)	4.448
Pounds Per Square Inch (psi)	Kilograms Force Per Square Millimeter (kgf/mm <sup>2</sup> )	$7.0307 \times 10^{-4}$
Pounds Per Square Inch (psi)	Newton Per Square Meter (N/m <sup>2</sup> )	$6.894757 \times 10^3$
Pounds Per Square Inch (psi)	Mega Newton Per Square Meter (MN/m <sup>2</sup> )	$6.894757 \times 10^{-3}$
Ounce-Inch (oz-in.)	Newton-Meter (N.m)	$7.061552 \times 10^{-3}$
Pound-Inch (lb-in.)	Newton-Meter (N.m)	$1.129848 \times 10^{-1}$
Pound-Foot (lb-ft)	Newton-Meter (N.m)	1.355818
Degree Celsius	Kelvin (K)	$t_k = t_c + 273.15$
Degree Fahrenheit	Kelvin (K)	$t_k = (t_f + 459.67)/1.8$
Degree Rankine	Kelvin (K)	$t_k = t_r/1.8$

### ISO METRIC AND UNIFIED SCREW THREAD DESIGNATIONS

ISO metric screw threads are designated by basic diameter and thread pitch. As an example, M8 × 1 is a standard ISO Metric screw thread having a basic diameter of 8 millimeters and a thread pitch of 1 millimeter. To convert an ISO Metric screw thread designation to a Unified (American) designation divide the basic diameter by 25.4 and multiply the reciprocal of the pitch by 25.4 to determine nominal size in inches and threads per inch. By so doing, M8 × 1 becomes 0.315-25.4 UNS.

Unified screw threads are designated by nominal size and number of threads per inch. As an example, 3/4-10 UNC is a standard Unified screw thread having a nominal size of 3/4 inches and 10 threads per inch. To convert a Unified screw thread designation to an ISO Metric screw thread designation multiply nominal size by 25.4 and multiply the reciprocal of threads per inch by 25.4 to determine basic diameter in millimeters and pitch in millimeters. By so doing, 3/4-10 UNC converted to ISO Metric become M19.05 × 2.54.