



# Technical Information

## 1) Conversion Units, SI and Metric

Quantity	Conventional		SI Unit	Conversion Factors	
	Inch Unit	Metric Unit			
<b>Length</b>	Inch Inch	Meter m	Meter m	1 inch = 25.4 mm 1 mm = 0.03937 inch	1 m = 3.2808 ft 1 ft = 0.3048 m
<b>Area</b>	Square Inch Inch <sup>2</sup>	Square cm cm <sup>2</sup>	Square Meter m <sup>2</sup>	1 inch <sup>2</sup> = 6.4516 cm <sup>2</sup> 1 cm <sup>2</sup> = 0.155 inch <sup>2</sup>	1 m <sup>2</sup> = 10.764 ft <sup>2</sup> 1 ft <sup>2</sup> = 0.092903 m <sup>2</sup>
<b>Mass</b>	Pound Mass lb	Kilogram Mass kg	Kilogram Mass kg	1 lb = 0.45359237 kg 1 kg = 2.2046 lb	
<b>Force</b>	Pound Force lbf	Kilogram Force kgf	Newton N	1 lbf = 0.45359237 kgf 1 lbf = 4.44822 N 1 kgf = 2.2046 lbf	1 kgf = 9.80665 N 1 N = 0.1019716 kgf 1 N = 0.224809 lbf
<b>Stress Pressure</b>	Pounds Per Square Inch lbf / inch <sup>2</sup>	Kilograms Per Square cm kgf / cm <sup>2</sup>	Pascal N / m <sup>2</sup> Pa	1 MPa = 10 <sup>6</sup> N/m <sup>2</sup> = 1 N/mm <sup>2</sup> 1 kPa = 10 <sup>3</sup> N / m <sup>2</sup> 1 lbf/inch <sup>2</sup> = 0.070307 kgf/cm <sup>2</sup> 1 lbf/inch <sup>2</sup> = 7.0307·10 <sup>-4</sup> kgf/mm <sup>2</sup>	1 lbf/inch <sup>2</sup> = 6.8947·10 <sup>-3</sup> N/mm <sup>2</sup> 1 kgf/cm <sup>2</sup> = 14.2233 lbf/inch <sup>2</sup> 1 kgf/cm <sup>2</sup> = 9.80665·10 <sup>-2</sup> N/mm <sup>2</sup>
<b>Torque Work</b>	Inch·Pounds lbf·Inch	Kilogram–Meters kgf·m	Newton–Meters N·m	1 lbf·inch = 1.1521 kgf·cm 1 kgf·cm = 0.8679 lbf·inch 1 lbf·inch = 0.1129848 N·m 1 kgf·m = 9.80665 N·m	1 kgf·cm = 9.80665·10 <sup>-2</sup> N·m 1 N·m = 8.85 lbf·inch 1 N·m = 10.19716 kgf·cm
<b>Power</b>	lbf·ft / min	kgf·m/s	N·m / s	1 kW = 1000 N·m / s 1 kW = 60000 N·m / min 1 kW = 44220 lbf·ft / min 1 kW = 1.34 hp	1 hp = 75 kgf·m / s 1 hp = 44741 N·m / min 1 hp = 33000 lbf·ft / min 1 hp = 0.7457 kW
<b>Velocity</b>	Feet Per Second ft / sec	Meters Per Second m / sec	Meters Per Second m / sec	1 ft / sec = 0.3048 m/sec 1 inch / sec = 2.54 cm/sec 1 ft / min = 0.00508 m/sec	1 mile/hr = 0.44704 m/sec 1 km/hr = 0.27777 m/sec 1 mile/hr = 1.609344 km/hr
<b>Acceleration</b>	Feet Per Second Squared ft / sec <sup>2</sup>	Meters Per Second Squared m / sec <sup>2</sup>	Meters Per Second Squared m / sec <sup>2</sup>	1 ft / sec <sup>2</sup> = 0.3048 m / sec <sup>2</sup>	

### TORQUE

Multiply By							To Obtain
dy·cm	g·cm	N·m x 10 <sup>-4</sup>	N·m	oz·in	lb·in	lb·ft	
1	980.7	1000	10 <sup>7</sup>	7.062 x 10 <sup>4</sup>	1.130 x 10 <sup>8</sup>	1.356 x 10 <sup>7</sup>	dy·cm
1.020 x 10 <sup>-3</sup>	1	1.020	1.020 x 10 <sup>4</sup>	72.01	1.152 x 10 <sup>3</sup>	1.383 x 10 <sup>4</sup>	g·cm
10 <sup>-3</sup>	9.807 x 10 <sup>-1</sup>	1	10 <sup>4</sup>	70.62	1.130 x 10 <sup>3</sup>	1.356 x 10 <sup>4</sup>	N·m x 10 <sup>-4</sup>
10 <sup>-7</sup>	9.807 x 10 <sup>-5</sup>	10 <sup>-4</sup>	1	7.062 x 10 <sup>-3</sup>	0.1130	1.356	N·m
1.416 x 10 <sup>-5</sup>	1.389 x 10 <sup>-2</sup>	1.416 x 10 <sup>-2</sup>	141.6	1	16	192	oz·in
8.850 x 10 <sup>-7</sup>	8.681 x 10 <sup>-4</sup>	8.850 x 10 <sup>-4</sup>	8.850	6.250 x 10 <sup>-2</sup>	1	12	lb·in
7.375 x 10 <sup>-8</sup>	7.234 x 10 <sup>-5</sup>	7.375 x 10 <sup>-5</sup>	0.7375	5.208 x 10 <sup>-3</sup>	8.333 x 10 <sup>-2</sup>	1	lb·ft

### POWER

Multiply By			To Obtain
oz·in·rpm	W	hp	
1	1352	1.008 x 10 <sup>6</sup>	oz·in·rpm
7.345 x 10 <sup>-4</sup>	1	745.7	W
9.917 x 10 <sup>-7</sup>	1.341 x 10 <sup>-3</sup>	1	hp

### INERTIA

Multiply By				To Obtain
g·cm <sup>2</sup>	kg·m <sup>2</sup>	oz·in·s <sup>2</sup>	oz·in <sup>2</sup>	
1	10 <sup>7</sup>	7.062 x 10 <sup>4</sup>	182.9	g·cm <sup>2</sup>
10 <sup>-7</sup>	1	7.062 x 10 <sup>-3</sup>	1.829 x 10 <sup>-5</sup>	kg·m <sup>2</sup>
1.416 x 10 <sup>-5</sup>	141.6	1	2.590 x 10 <sup>-3</sup>	oz·in·s <sup>2</sup>
5.467 x 10 <sup>-3</sup>	5.467 x 10 <sup>4</sup>	386.09	1	oz·in <sup>2</sup>