

COMMON CONVERSION FORMULAS

SI* CONVERSION FORMULAS

APPROXIMATE CONVERSION					APPROXIMATE CONVERSION				
MULTIPLY	BY	TO GET OR MULTIPLY NON-SI UNIT	BY	TO GET	MULTIPLY	BY	TO GET OR MULTIPLY NON-SI UNIT	BY	TO GET
SI* UNIT	CONV FACTOR		CONV FACTOR	SI* UNIT	SI* UNIT	CONV FACTOR		CONV FACTOR	SI* UNIT
LENGTH					FORCE (N = kg • ms/2)				
millimetre (mm)	x 0.03937	= inch	x 25.4	= mm	newton (N)	x 0.225	= pound	x 4.45	= N
(1 inch = 25.4mm exactly)					kilonewton (kN)	x 225	= pound	x 0.00445	= kN
TORQUE									
centimetre (cm) 10mm	x 0.3937	= inch	x 2.54	= cm	newton metre (N•m)	x 8.9	= lb. in.	x 0.113	= N•m
metre (m) 1000mm	x 3.28	= foot	x 0.305	= m	newton metre (N•m)	x 0.74	= ob. ft.	x 1.36	= N•m
metre (m)	x 1.09	= yard	x 0.914	= m					
kilometre (km) 1000m	x 0.62	= mile	x 1.61	= km	PRESSURE				
AREA									
millimetre ² (mm ²)	x 0.00155	= inch ²	x 645	= mm ²	kilopascal (kPa)	x 4.0	= in. H2O	x 0.249	= kPa
centimetre ² (cm ²)	x 0.155	= inch ²	x 6.45	= cm ²	kilopascal (kPa)	x 0.30	= in. Hg	x 3.38	= kPa
metre ² (m ²)	x 10.8	= foot ²	x 0.0929	= m ²	kilopascal (kPa)	x 0.145	= p.s.i.	x 6.89	= kPa
metre ² (m ²)	x 1.2	= yard ²	x 0.836	= m ²	megapascal (MPa)	x 145	= p.s.i.	x 0.00689	= MPa
hectare (ha) 10,000m ²	x 2.47	= acre	x 0.405	= ha	Bar	x 14.5	= p.s.i.	x 0.689	= Bar
kilometre ² (km ²)	x 0.39	= mile ²	x 2.59	= km ²	POWER				
VOLUME									
centimetre ³ (cm ³)	x 0.061	= inch ³	x 16.4	= cm ³	kilowatt (kw)	x 1.34	= hp	x 0.746	= kw
liter (l)	x 61	= inch ³	x 0.016	= l	kilowatt (kw)	x 0.948	= Btu/s	x 1.055	= kw
millilitre (ml)	x 0.034	= oz-liq	x 29.6	= ml (1ml = 1cm ³)	watt (w)	x 0.74	= ft. lb/s	x 1.36	= w
					TEMPERATURE				
litre (l) 1000ml	x 1.06	= quart	x 0.946	= l	°C = (°F - 32) ÷ 1.8	°F = (°C x 1.8) + 32			
litre (l)	x 0.26	= gallon	x 3.79	= l	FLOW				
metre ³ (m ³) 1000 l	x 1.3	= yard ³	x 0.76	= m ³	cu. cm./min.	x 0.61	= cu. in./min. x 16.4	= cu. cm./min.	
MASS					liters/min.	x .2642	= GPM x 3.785	= liters/min.	
gram (g)	x 0.035	= ounce	x 28.3	= g	* System International (Modern Metric System)				
kilogram (kg) 1000g	x 2.2	= pound	x 0.454	= kg					
metric ton (t) 1000kg	x 1.1	= ton (short)	x 0.907	= t					

* System International (Modern Metric System)

DECIMAL & MILLIMETRE EQUIVALENTS

DECIMALS	MILLIMETRES	DECIMALS	MILLIMETRES	DECIMALS	MILLIMETRES
1/64	.015625	23/64	.359375	45/64	.703125
1/32	.03125	3/8	.3750	23/32	.71875
3/64	.046875	25/64	.390625	47/64	.734375
1/16	.0625	13/32	.40625	3/4	.7500
5/64	.078125	27/64	.421875	49/64	.765625
3/32	.09375	7/16	.4375	25/32	.78125
7/64	.109375	29/64	.453125	51/64	.796875
1/8	.1250	15/32	.46875	13/16	.8125
9/64	.140625	31/64	.484375	53/64	.828125
5/32	.15625	1/2	.5000	27/32	.84375
11/64	.171875	33/64	.515625	55/64	.859375
3/16	.1875	17/32	.53125	7/8	.8750
13/64	.203125	35/64	.546875	57/64	.890625
7/32	.21875	9/16	.5625	29/32	.90625
15/64	.234375	37/64	.578125	59/64	.921875
1/4	.2500	19/32	.59375	15/16	.9375
17/64	.265625	39/64	.609375	61/64	.953125
9/32	.28125	5/8	.6250	31/32	.96875
19/64	.296875	41/64	.640625	63/64	.984375
5/16	.3125	21/32	.65625	1	1.000
21/64	.328125	43/64	.671875		
11/32	.34375	11/16	.6875		

1mm = 0.3937"
.001" = .0254mm

PRESSURE & FORCE CALCULATIONS

CALCULATING FORCE FROM PRESSURE

The following calculation calculates the amount of force being applied to a load. In order to complete the equation, the cylinder effective area (CEA) for the cylinder being used must be known. Each cylinder has its own specific value for the C.E.A.

TO CALCULATE KILO NEWTONS USING A GAUGE READING IN kgf/cm²

$$\frac{\text{APPLIED PRESSURE (kgf/cm}^2\text{)} \times \text{CYLINDER EFFECTIVE AREA} \times 9.81}{1000}$$

= KILONEWTONS

TO CALCULATE KILO NEWTONS USING A GAUGE READING IN PSI

$$\frac{(\text{APPLIED PRESSURE (PSI)} \div 14.233) \times \text{CYLINDER EFFECTIVE AREA} \times 9.81}{1000}$$

= KILONEWTONS

TO CONVERT KILO NEWTONS TO TONNES, DIVIDE BY 9.81

Effective Area for Cylinder Used: cm²

CALCULATING GAUGE PRESSURE REQUIRED TO ACHIEVE A DESIRED FORCE

$$\frac{\text{TONNES OF FORCE REQUIRED} \times 1000}{\text{CYLINDER EFFECTIVE AREA (cm}^2\text{)}}$$

= Kg/cm² (gauge pressure)

(Multiply by 14.233 for PSI gauge)

Effective Area for Cylinder Used: cm²





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CALCULATING FORCE FROM PRESSURE

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TO CALCULATE KILO NEWTONS USING A GAUGE READING IN kgf/cm2

APPLIED PRESSURE (kgf/cm2) X CYLINDER EFFECTIVE AREA X 9.81

1000

= KILONEWTONS

TO CALCULATE KILO NEWTONS USING A GAUGE READING IN PSI

(APPLIED PRESSURE (PSI) DIVIDED BY 14.233 X CYLINDER EFFECTIVE AREA X 9.81

1000

= KILONEWTONS

TO CONVERT KILO NEWTONS TO TONNES, DIVIDE BY 9.81

Effective Area for Cylinder Usedcm2