

## CONVERSION FACTOR TABLES

To convert		Into		Multiply by
Into		To convert		Divide by
Unit	Symbol	Unit	Symbol	Factor
Atmospheres	Atm	bar	bar	1.01325
Atmospheres	Atm	inches of mercury	in Hg	29.92
Atmospheres	Atm	mm of mercury	mm Hg	760
Atmospheres	Atm	pounds/square inch	psi	14.7
bar	bar	pounds/square inch	psi	14.5
British thermal unit	Btu	calorie	cal	252
British thermal unit	Btu	joule	J	1054.35
British thermal unit	Btu	foot pounds	ft-lbs	777.65
British thermal unit/hr	Btu/hr	kilowatts	kW	0.000293071
centimetres	cm	inches	in	0.3937
centimetres per sec	cm/sec	feet per minute	ft/min	1.969
centimetres per sec	cm/sec	feet per second	ft/sec	0.03281
Celsius	°C	Fahrenheit	°F	(F-32) ÷ 1.8
centiStokes	cSt	Saybolt	SUS	4.635 (>52 cSt)
cubic centimetres	cm <sup>3</sup>	cubic inches	in <sup>3</sup>	0.06102
cubic feet	cu ft	gallons US	US gal	7.481
cubic feet	cu ft	cubic metres	m <sup>3</sup>	0.0283168
cubic inches	in <sup>3</sup>	cubic centimetres	cm <sup>3</sup>	16.3871
cubic inches	in <sup>3</sup>	gallons US	US gal	0.004329
cubic yards	yd <sup>3</sup>	cubic metres	m <sup>3</sup>	0.7646
degrees (angle)	°	radians	rad	0.0174533
Fahrenheit	°F	Celsius	°C	(C × 1.8) + 32
feet	ft	metres	m	0.3048
feet of water	ft H <sub>2</sub> O	bar	bar	0.0298907
feet of water	ft H <sub>2</sub> O	pounds/square inch	psi	0.4335
feet of water	ft H <sub>2</sub> O	inches of mercury	in Hg	0.8826
feet of oil (sg = 0.87)		pounds/square inch	psi	0.377
feet of oil (sg = 0.87)		inches of mercury	in Hg	0.768
feet per minute	ft/min	centimetres per sec	cm/sec	0.5080
feet per second	ft/sec	centimetres per sec	cm/sec	30.48
feet per minute	ft/min	miles per hour	mph	0.01136
feet per second	ft/sec	miles per hour	mph	0.6818

To convert		Into		Multiply by
Into		To convert		Divide by
Unit	Symbol	Unit	Symbol	Factor
fluid ounces UK	UK fl oz	cubic centimetres	cm <sup>3</sup>	28.413
fluid ounces US	US fl oz	cubic centimetres	cm <sup>3</sup>	29.5735
foot pounds per min	ft-Ibs/min	horsepower	hp	0.00003030
foot pounds per sec	ft-Ibs/sec	horsepower	hp	0.001818
foot pounds per min	ft-Ibs/min	watts	W	81.3492
foot pound	ft-Ib	kilogram metre	kgm	0.1383
foot pound	ft-Ib	Newton metre	Nm	1.356
foot pound	ft-Ib	joule	J	1.35582
gallons US	US gal	cubic inches	in <sup>3</sup>	231
gallons US	US gal	gallons UK	UK gal	0.8327
gallons US	US gal	litres	l	3.78531
gallons US	US gal	cubic feet	cu ft	0.1337
gallons UK	UK gal	litres	l	4.54596
gallons UK	UK gal	gallons US	US gal	1.201
horsepower	hp	British thermal unit/min	Btu/min	42.44
horsepower	hp	foot pounds per min	ft-Ibs/min	33000
horsepower	hp	foot pounds per sec	ft-Ibs/sec	550
horsepower	hp	kilowatts	kW	0.7457
horsepower	hp	Pferde Starke	PS	1.014
horsepower	hp	poncelet		0.7604
inches	in	centimetres	cm	2.54
inches	in	millimetres	mm	25.4
inch pounds	in-Ibs	kilogram/metre	kgm	0.01152

To convert		Into		Multiply by
Into		To convert		Divide by
Unit	Symbol	Unit	Symbol	Factor
inch pounds	in-Ibs	Newton metre	Nm	0.1130
inches of mercury	in Hg	Pascal	Pa	3386 (32°F)
inches of mercury	in Hg	pounds/square inch	psi	0.4912
inches of mercury	in Hg	millibar	mbar	33.8639
kilogram	kg	pound	lb	2.205
kilogram	kg	Newton	N	9.80665
kilogram metre	kgm	Newton metre	Nm	9.80665
kilogram metre	kgm	inch pounds	in-Ibs	86.80
kilogram metre	kgm	foot pound	ft-Ib	7.233
kilogram per square centimetre	kg/cm <sup>2</sup>	bar	bar	0.980665
kilopascals	kPa	bar	bar	0.01
kilometres	km	miles		0.6214
kilometres	km	feet	ft	3281
litres	l	gallons UK	UK gal	0.2199
litres	l	gallons US	US gal	0.2642
metric horse power		kilowatts	kW	0.735499
micrometres	µm	microns	µm	0.0254
miles		kilometres	km	1.609
millimetres mercury	mm Hg	millibar	mbar	1.33322
Newton	N	pound	lb	0.2248
Newton metre	Nm	foot pound	ft-Ib	0.7376
Newton metre	Nm	inch pounds	in-Ibs	8.851
Newtons per square centimetre	N/cm <sup>2</sup>	bar	bar	0.1
Newtons per square metre	N/m <sup>2</sup>	bar	bar	0.00001
Pascals	Pa	bar	bar	0.00001
pint UK	UK pt	litres	l	0.568245

To convert		Into		Multiply by
Into		To convert		Divide by
Unit	Symbol	Unit	Symbol	Factor
pint US	US pt	litres	l	0.473163
pounds	lb	grams	g	453.6
pounds	lb	Newton	N	4.448
pounds/square inch	psi	Atmospheres	Atm	0.06804
pounds/square inch	psi	bar	bar	0.06895
pounds/square inch	psi	inches of mercury	in Hg	2.036
pounds/square inch	psi	feet of water	ft H <sub>2</sub> O	2.307
pounds/square inch	psi	feet of oil (sg=0.87)		2.65
pounds/cubic foot	lb-ft <sup>3</sup>	Kilograms/cubic metre	kg-m <sup>3</sup>	16.02
square inches	in <sup>2</sup>	square centimetres	cm <sup>2</sup>	6.5416
square feet	ft <sup>2</sup>	square metres	m <sup>2</sup>	0.09290304
Saybolt	SUS	centiStokes	cSt	See below
32 – 99 SUS	cSt = 0.2253 × SUS – (194.4 ÷ SUS)			
100 – 240 SUS	cSt = 0.2193 × SUS – (134.6 ÷ SUS)			
> 240 SUS	cSt = SUS ÷ 4.635			

Hydraulic Secrets Revealed! [www.InsiderSecretsToHydraulics.com](http://www.InsiderSecretsToHydraulics.com)