

# Conversion Factors

Power		
Multiply	By	To Get
Boiler hp	33472	Btu/hr lbs H <sub>2</sub> O evap. at 212° F
Boiler hp	34.5	Horsepower
Horsepower	2540	Btu/hr
Horsepower	550	ft-lbs/sec
Horsepower	33000	ft-lbs/min
Horsepower	42.42	Btu/min
Horsepower	0.7457	Kilowatts
Kilowatts	3,415	Btu/hr
Kilowatts	56.92	Btu/min
Watts	44.28	ft-lbs/min
Watts	0.7378	ft-lbs/sec
Watts	0.05692	Btu/min
Tons refriger.	12,000	Btu/hr
Tons refriger.	200	Btu/min
Btu/hr	0.00002986	Boiler hp lbs. H <sub>2</sub> O evap.   at 212° F
Btu/hr	0.000393	Horsepower
ft-lbs/sec	0.00182	Horsepower
ft-lbs/min	0.0000303	Horsepower
Btu/min	0.0236	Horsepower
Kilowatts	1.341	Horsepower
Btu/hr	0.000293	Kilowatts
Btu/min	0.01757	Kilowatts
ft-lbs/min	0.02259	Watts
ft-lbs/sec	1.355	Watts
Btu/min	1.757	Watts
Btu/hr	0.0000833	Tons Refrig.
Btu/min	0.005	Tons Refrig.

Energy		
Multiply	By	To Get
Btu	778	ft-lbs
Btu	0.000393	hp-hrs
Btu	0.000293	kw-hrs (lbs H <sub>2</sub> O evap.)
Btu	0.0010307	at 212° F
Btu	0.293	Watt-hrs
ft-lbs	0.3765	Watt-hrs
latent heat) of ice	143.33	Btu/lb H <sub>2</sub> O
lbs H <sub>2</sub> O evap.) at 212° F	0.284	kw-hrs
lbs H <sub>2</sub> O evap.) at 212° F	0.381	hp-hrs
ft-lbs	0.001287	Btu/lb
hp-hrs	2,540	Btu
kw-hrs	3,415	Btu
lbs H <sub>2</sub> O evap.) at 212° F	970.4	Btu
Watt-hrs	3,415	Btu
Watt-hrs	2,656	ft-lbs (Latent heat of ice)
Btu/lb H <sub>2</sub> O	0.006977	of ice (lbs H <sub>2</sub> O evap.)
kw-hrs	3.52	at 212° F (lbs H <sub>2</sub> O evap.)
hp-hrs	2.63	at 212° F

Pressure		
Multiply	By	To Get
atmospheres	29.92	(in Mercury (at 62°F))
atmospheres	406.8	(in H <sub>2</sub> O (at 62°F))
atmospheres	406.8	(ft. H <sub>2</sub> O (at 62°F))
atmospheres	33.9	(at 62°F)
atmospheres	14.7	lbs/in <sup>2</sup>
atmospheres	1.058	ton/ft <sup>3</sup>
in H <sub>2</sub> O (at 62°F)	0.0737	(in. Mercury (at 62°F))
ft H <sub>2</sub> O (at 62°F)	0.881	(in Mercury (at 62°F))
ft H <sub>2</sub> O (at 62°F)	0.4335	lbs/in <sup>2</sup>
ft H <sub>2</sub> O (at 62°F)	62.37	lbs/ft <sup>2</sup>
in. Mercury (at 62°F)	70.73	lbs/ft <sup>2</sup>
in. Mercury (at 62°F)	0.4912	lbs/in <sup>2</sup>
in. Mercury (at 62°F)	0.03342	atmospheres
in. H <sub>2</sub> O (at 62°F)	0.002458	atmospheres
ft. H <sub>2</sub> O (at 62°F)	0.0295	atmospheres
lbs/in <sup>2</sup>	0.068	atmospheres
ton/ft <sup>2</sup>	0.945	atmospheres
in. Mercury (at 62°F)	13.57	(in. H <sub>2</sub> O (at 62°F))
in. Mercury (at 62°F)	1.131	(ft H <sub>2</sub> O (at 62°F))
lbs/in <sup>2</sup>	2.309	(ft H <sub>2</sub> O (at 62°F))
lbs/ft <sup>2</sup>	0.01603	(ft H <sub>2</sub> O (in. Mercury))
lbs/ft <sup>2</sup>	0.014138	(at 62°F) (in Mercury)
lbs/in <sup>2</sup>	2.042	(at 62°F)
lbs/in <sup>2</sup>	0.0689	Bar
lbs/in <sup>2</sup>	0.0703	kg/cm <sup>2</sup>

Velocity of Flow		
Multiply	By	To Get
ft/min	0.01139	miles/hr
ft/min	0.01667	ft/sec
cu ft/min	0.1247	gal.sec
cu ft/sec	448.8	gal/min
miles/hr	88	ft/min
ft/sec	60	ft/min
gal/sec	8.02	cu ft/min
gal/min	0.002228	cu ft/sec

Temperature	
F	$(C \times 1.8) + 32$
C	$(F - 32) \div 1.8$

Weight		
Multiply	By	To Get
lbs	7,000	grains
lbs H <sub>2</sub> O (60° F)	0.01602	cu ft H <sub>2</sub> O
lbs H <sub>2</sub> O (60° F)	0.1198	gal H <sub>2</sub> O
tons (long)	2,240	lbs
tons (short)	2,000	lbs
grains	0.000143	lbs
cu ft H <sub>2</sub> O	62.37	lbs H <sub>2</sub> O (60° F)
gal H <sub>2</sub> O	8.3453	lbs H <sub>2</sub> O (60° F)
lbs	0.000446	tons (long)
lbs	0.0005	tons (short)

Circular Measure		
Multiply	By	To Get
Degrees	0.01745	Radians
Minutes	0.00029	Radians
Diameter	3.142	Circumference
Radians	57.3	Degrees
Radians	3,438	Minutes
Circumference	0.3183	Diameter

Volume		
Multiply	By	To Get
Barrels (oil)	42	gal (oil)
cu ft	1,728	cu in
cu ft	7.48	gal (oil)
cu in	0.00433	gal (oil)
gal (oil)	0.0238	barrels (oil)
cu in	0.000579	cu ft
gal (oil)	0.1337	cu ft
gal (oil)	231	cu in

Heat Transmission		
Multiply	By	To Get
Btu/in		(Btu/ft
/sq ft	0.0833	/sq ft
/hr/ F		/hr/ F
Btu/ft		(Btu/in
/sq st	12	/sq ft
/hr/ F		/hr/ F

Fractions and Decimals		
Multiply	By	To Get
Sixty-fourths	0.015625	Decimal
Thirty-seconds	0.03125	Decimal
Sixteenths	0.0625	Decimal
Eighths	0.125	Decimal
Fourths	0.25	Decimal
Halves	0.5	Decimal
Decimal	64	Sixty-fourths
Decimal	32	thirty-seconds
Decimal	16	Sixteenths
Decimal	8	Eighths
Decimal	4	Fourths
Decimal	2	Halves

Gallons shown are U. S. standard