Shop Tech Talk February 2010

Q. **Explanation of SI Units for Torque, Pressure and Power**

In the world the most widely used system of measurement is the SI system (the International System of Units).Three principal exceptions to using this system are Burma,Liberia and the United States and to some extent the United Kingdom,which has adopted the SI system but not with the intention of replacing customary measures entirely.

When we receive equipment/motors from Europe or Asia we will find that nameplates on this equipment will be using SI units. Following is information on Torque ,Pressure and Power units.

SI Unit	Unit of	Multiply By	OR Multiply by approximately	To Obtain
Newton-meter (N-m)	torque	0.7376	0.75	foot-pounds
Newton-meter (N-m)	torque	8.8508	9	Inch- pounds
Newton-meter (N-m)	torque	0.1020	0.1	kilogram-meters
foot-pounds	torque	1.3558	1.4	Newton-meter
foot pounds	torque	0.1383	0.14	kilogram-meters
foot pounds	torque	12	12	Inch- pounds
1 newton	mass	0.25	0.2248	pounds
1 atmosphere	pressure	14.696		psi (pounds per sq in)
1 atmosphere	pressure	760		mmHg
1 atmosphere	pressure	29.92	30	inHg
1 atmosphere	pressure	101.325	100	kPa *
1 atmosphere	pressure	33.9	34	feet of water
1 kPa *	pressure	0.145038	0.15	psi
1 psi	pressure	6.894733	7	kPa *
1 psi	pressure	51.71475	50	mmHg
1 mmHg	pressure	1		1 torr
1 kw	power	1.341	1.33	hp (horsepower)
1 hp	power	0.745699	0.746	kw

760 torr is 0% vacuum or 14.696 psi or 0 inHg
380 torr is 50% vacuum or 7.348 psi or 14.961 inHg
0 torr is 100% vacuum or 0 psi or 29.92 inHg

***mmHg = millimeters of Mercury = torr, so 760 mmHg = 760 torr**
inHg = inches of Mercury
1 bar is approx. equal to 1 atmosphere
1 kPa = 1,000 pascals

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