

Chapter 7 – 11: New Units

	MKS	CGS	US Customary
Energy (work, U, K)	J (= Joule)	erg	ft·lb
Power $\left(= \frac{W}{t} \right)$	W (= Watt)	$\frac{\text{erg}}{\text{s}}$	hp (=horsepower = $550 \frac{\text{ft}\cdot\text{lb}}{\text{s}}$)
Momentum (same units as impulse)	$\frac{\text{kg}\cdot\text{m}}{\text{s}}$ (= N·s)	$\frac{\text{g}\cdot\text{cm}}{\text{s}}$ (= dyne·s)	$\frac{\text{slug}\cdot\text{ft}}{\text{s}}$ (= lb·s)
Angular displacement	rad (= radian)	rad	rad
Angular speed	$\frac{\text{rad}}{\text{s}}$	$\frac{\text{rad}}{\text{s}}$	$\frac{\text{rad}}{\text{s}}$
Angular acceleration	$\frac{\text{rad}}{\text{s}^2}$	$\frac{\text{rad}}{\text{s}^2}$	$\frac{\text{rad}}{\text{s}^2}$
Torque	N·m	dyne·cm	ft·lb
Moment of Inertia	kg·m ²	g·cm ²	slug·ft ²
Angular momentum	$\frac{\text{kg}\cdot\text{m}^2}{\text{s}}$ (= torque × time = N·m·sec = J·sec)	$\frac{\text{g}\cdot\text{cm}^2}{\text{s}}$ (= dyne·cm·sec = erg·sec)	$\frac{\text{slug}\cdot\text{ft}^2}{\text{s}}$ (= ft·lb·sec)