

MECH 230 Dynamics - Section 2

A Note on Units

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Quantity	Dimensional Symbol	SI Units		U.S. Customary Units	
		Unit	Symbol	Unit	Symbol
Mass	M	Base units	kilogram	kg	slug
Length	L		meter*	m	foot
Time	T		second	s	second
Force	F		newton	N	pound

*Also spelled *metre*.

Figure 1: Source: MKB

In this class, we will use both SI and US customary units.

In the U.S. customary units, the pound is used both as a unit of force (lbf) and as a unit of mass (lbm). The lbm is the amount of mass which weighs 1 lbf under the standard conditions (at a latitude 45° and at sea level). In MKB, they use almost exclusively the unit of slug for mass. In addition, they use the symbol lb to mean pound force.

Notice that seconds is abbreviated as s in SI units and sec in US customary units.

Regarding the gravitational acceleration, use the values $g = 9.81 \text{ m s}^{-2}$ in SI units and $g = 32.2 \text{ ft sec}^{-2}$ in US customary units.

When solving a problem, keep all variables in the unit system they are given.