
ME 200: Thermodynamics I

Lecture 2: Units, Specific volume, V, and Pressure, p

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In this Lecture ...

- **Units** We have our natural roots in English history
- **Specific volume, V** \Rightarrow English developed "English" units
- **Pressure, p** foot, pound, oz, furlong, acre,

Adopted SI units kg, m, s, N, J, ...

$$F = m a = \text{kg m/s}^2 = \text{N}$$

Dimensions and Units

- Physical quantities, i.e. properties, are reported in terms of their dimensions.
 - **Primary dimensions**
 - Examples: mass (kg), length (m), time (s), temperature (K), current (A), etc.
 - **Secondary dimensions**
 - Derived from primary dimensions.
 - Examples: velocity (m/s), specific volume (kg/m³), force (N), energy (J), charge (C), etc.