Answer on Question #59434-Physics-Molecular Physics-Thermodynamics

State the steady flow energy equation and mention all the variables used and their corresponding standard SI unite.

Answer

The steady flow energy equation is

$$q + w_s = \frac{1}{2}(c_2^2 - c_1^2) + g(z_2 - z_1) + (h_2 - h_1),$$

where q is heating per unit mass $\left[\frac{J}{kg}\right]$, w_s is the shaft work per unit mass $\left[\frac{J}{kg}\right]$, g is the acceleration due to the gravity $\left[\frac{m}{s^2}\right]$, $h_2\ and\ h_1$ are the specific enthalpy at points 2 and 1 $\left[\frac{J}{kg}\right]$, $z_2\ and\ z_1$ are the height at points 2 and 1 $[m]$, $c_2\ and\ c_1$ are the velocity at points 2 and 1 $\left[\frac{m}{s}\right]$.