

Chapter 6 Question #2

In an adiabatic steady flow compressor, the magnitude of the shaft work done by the system (neglecting changes in kinetic and potential energy), is equal to:

- 1) the change in enthalpy
- 2) the change in internal energy
- 3) none of the above
- 4) I don't know

Chapter 6 Question 2 Answer:

(1) the change in enthalpy

For an adiabatic steady flow compressor (neglecting changes in kinetic and potential energy) the shaft work is equal to the change in enthalpy as seen from crossing off the appropriate terms in this equation:

$$q_{1-2} - w_{s1-2} = h_2 - h_1 + \frac{c_2^2}{2} - \frac{c_1^2}{2}$$