

MEMS 0051 - Introduction to Thermodynamics

Quiz #1

Name: _____

Problem #1

A pressure of 100 [MPa] is applied to an area of 0.01 [m²]. What is the force acting on the area?

Problem #2

A liquid has a specific volume of 0.00125 [m³/kg]. What is the density?

Problem #3

Determine if the following property is intensive or extensive:

1. Thermal diffusivity
2. Total energy
3. Mass

Problem #4

Answer the following questions about the air compressor shown below. Note that the control surface is denoted with a dashed line. 1-2 word answers are fine.

- Is the given control volume a closed or open system? -
- Is the air flowing through this compressor undergoing a process or cycle? -
- Assume we know the pressure of the air entering the compressor. Do we know the state if we know that property? -

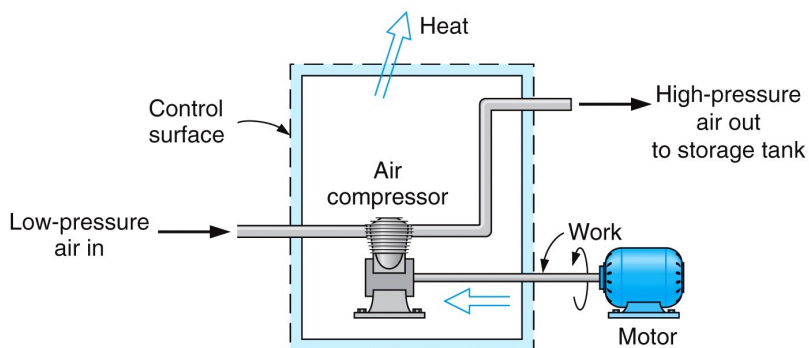


Figure 1.5
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