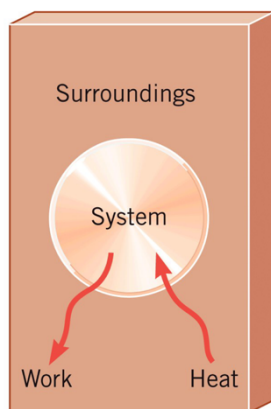


Welcome to AP Physics-2! The summer work includes the following. Edpuzzles and WebAssigns are due on Monday 8/31 at 11:59 pm. **Items 3-5 are to be delivered or mailed to the BHS main office by Friday 8/28/2026.**

_____ 1. Chapter 12/1-6 Edpuzzle and WebAssign -Due on Monday 8/31 11:59 pm

_____ 2. Chapter 13/1-3 Edpuzzle and WebAssign -Due on Monday 8/31 11:59 pm

_____ 3. Use the diagram and illustration below to summarize the energy transfer methods for a gas system.

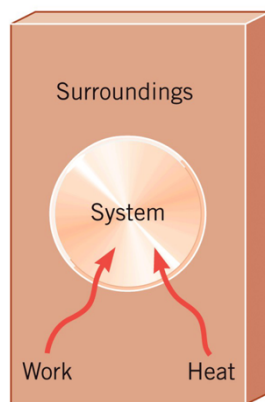


(a)

(a) The gas system on the left side indicates that energy is transferred in or out of the system by working and heating. When energy is transferred into the system, the work or heat is positive, when energy is transferred out of the system, the work or heat is negative. Indicate +/- for working (W) and heating (Q).

Working W : _____ (+/-)

Heating Q : _____ (+/-)



(b)

(b) The gas system on the left side indicates that energy is transferred in or out of the system by working and heating. When energy is transferred into the system, the work or heat is positive, when energy is transferred out of the system, the work or heat is negative. Indicate +/- for working (W) and heating (Q).

Working W : _____ (+/-)

Heating Q : _____ (+/-)

4. Energy transfer by working.

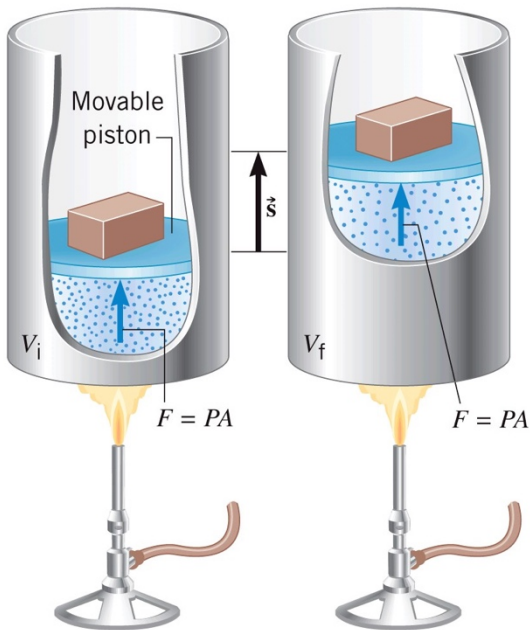


Figure 15.4
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● P

The diagrams above indicate that as heat is added to a gas system, the gas system undergoes the expansion. Presume the piston and the block are moving upward with a constant speed.

- (a) On the point P on the right side of the diagram, sketch a FBD on the block and piston.
- (b) Indicate the force from the gas as $P_{gas} \cdot A$, the force from the atmosphere as $P_{atm} \cdot A$, the force from the Earth as mg . Indicate the direction of displacement next to the FBD as d .
- (c) Use the concept of work $W = F_{\parallel} \cdot d$, fill in the blank space below:

- Work done *on* the block and piston *by* gas is _____ (positive/negative).
- Work done *on* the gas system *by* the block and piston is _____ (positive/negative).

(d) If the area of the piston is A , the mass of piston and the block is m , write the expression of the gas pressure in terms of P_{atm} , A , m , and g .

_____5. Energy transfer by heating. Fill in the blank space as indicated.

(a) Heat always flows from _____ (high/low) temperature to _____ (high/low) temperature.

(b) List three different methods to add heat to the gas system and give example for each method (Revisit Chapter 13.1-3).