17 A cylinder is heated, causing the air inside to expand at a constant pressure of 2.2×10^5 Pa.
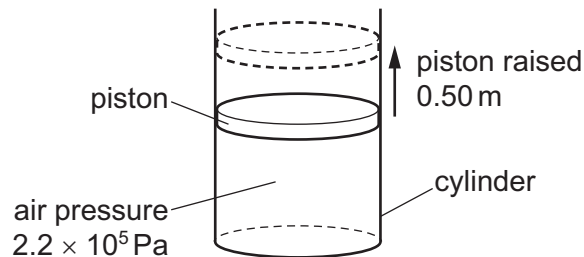

The expansion of the air causes the piston to rise through a vertical distance of 0.50 m, doing 11 kJ of work. Frictional forces are negligible.

What is the cross-sectional area of the piston?

A 1.0×10^{-4} m^2

B 2.5×10^{-2} m^2

C 5.0×10^{-2} m^2

D 1.0×10^{-1} m^2