

Answer on Question #68315-Physics- Molecular Physics | Thermodynamics

A cylinder containing some gas A is fitted with an idealized piston. Gas A is at 1.2 atm, 10.0 L and at 432K. What external pressure is required to compress this gas irreversibly to a final volume of 3.20L?

Solution

$$p_1 V_1 = p_2 V_2$$

The external pressure is

$$p_2 = p_1 \frac{V_1}{V_2} = 1.2 \frac{10.0}{3.20} = 3.75 \text{ atm.}$$

Answer: 3.75 atm.

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