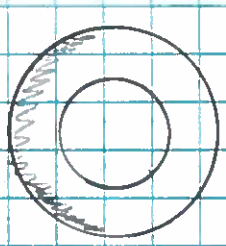
Initial

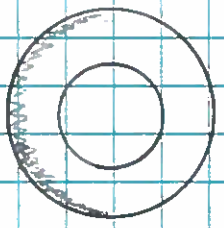


$T_i = 15°C = 288K$

$P_{i\,gauge} = 30$ psi

V_i

final



$T_f = 45°C = 318K$

$V_f = V_i$

Now, the pressure is given as a "gauge pressure", so

$$P_i = P_{i\,gauge} + P_{atm} = 44.7 \text{ psi}$$

where $P_{atm} = 14.7$ psi

for $i \to f$, V = constant

So, $PV = nRT \Rightarrow \frac{nR}{V} = \frac{P}{T} = \text{const}$

So, $\frac{P_i}{T_i} = \frac{P_f}{T_f} \Rightarrow P_f = \frac{T_f}{T_i} P_i = 49.4$ psi

Now, the final gauge pressure is:

$$\boxed{P_{f\,gauge} = P_f - P_{atm} = 34.6 \text{ psi}}$$