

Results of the Experiment: Investigating Gas Laws and Heat Engine Cycles with PhysLogger

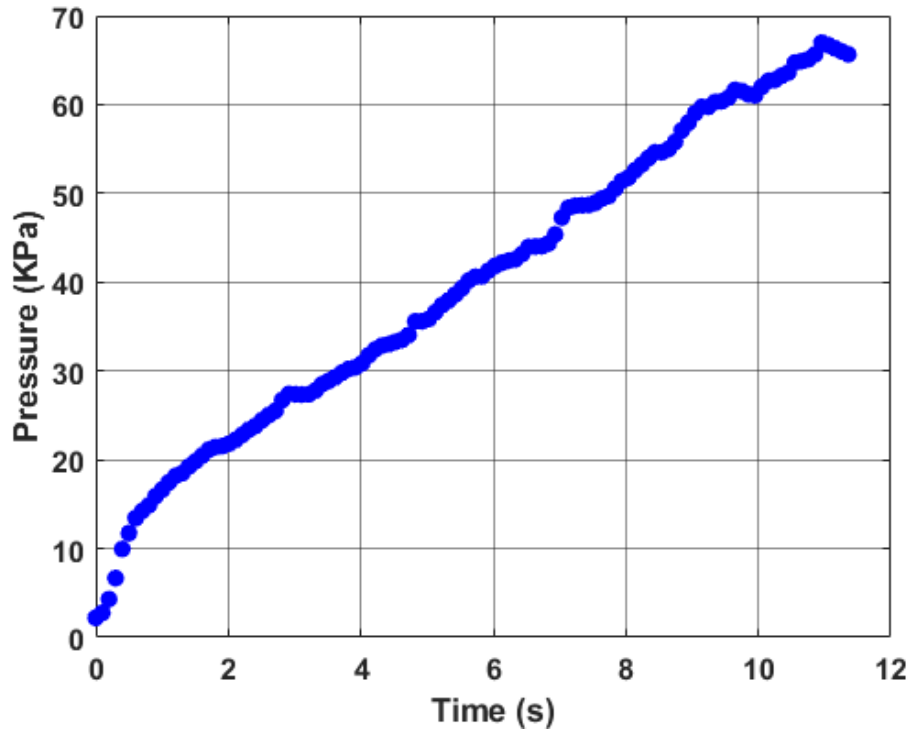


Figure 1: Boyle's states that pressure is inversely proportional to volume keeping the temperature constant. The volume has been observed visually and it decreases as pressure increases.

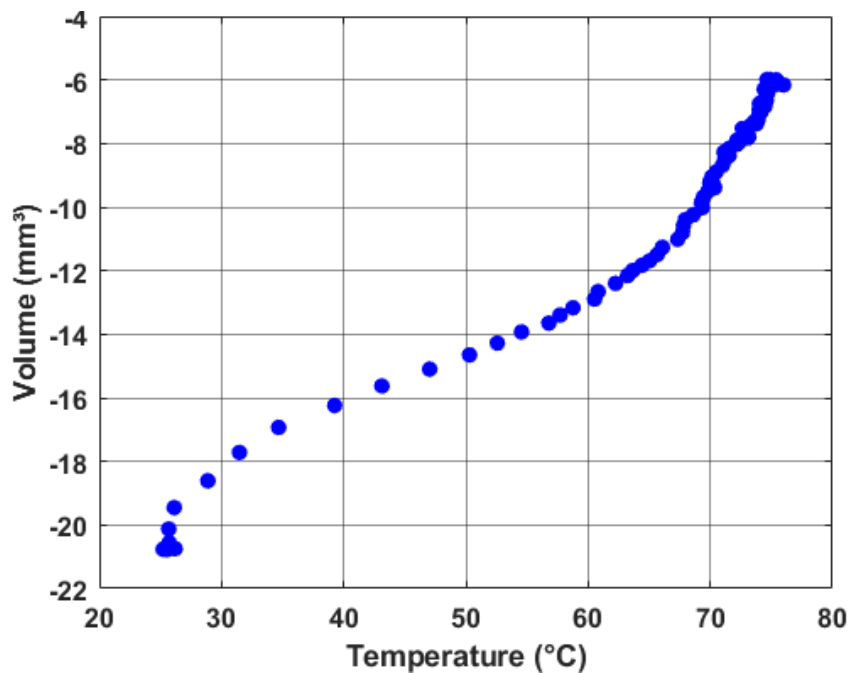


Figure 2: The volume is plotted using Physlogger binary Multiplier i.e., Volume = cross sectional area \times distance. The distance is measured using PhysDisp, a sensor which measure distance as syringe plunger moves upward or downward. The plot depicts the Charles's law which states that pressure is directly proportional to volume.

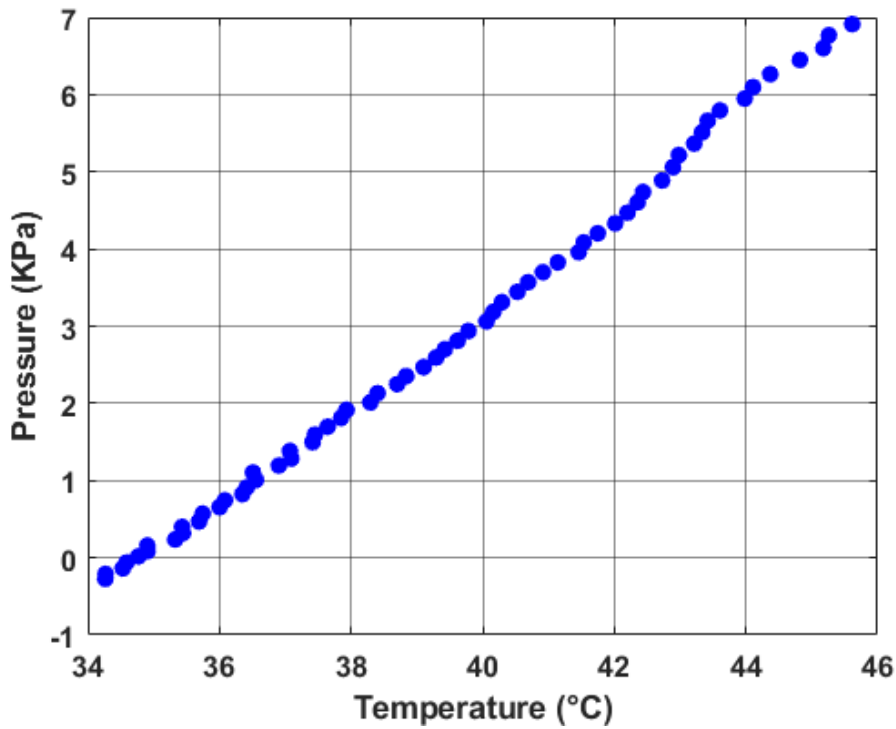


Figure 3: The pressure and temperature are plotted against time. Amonton's law which states that pressure is directly proportional to temperature.

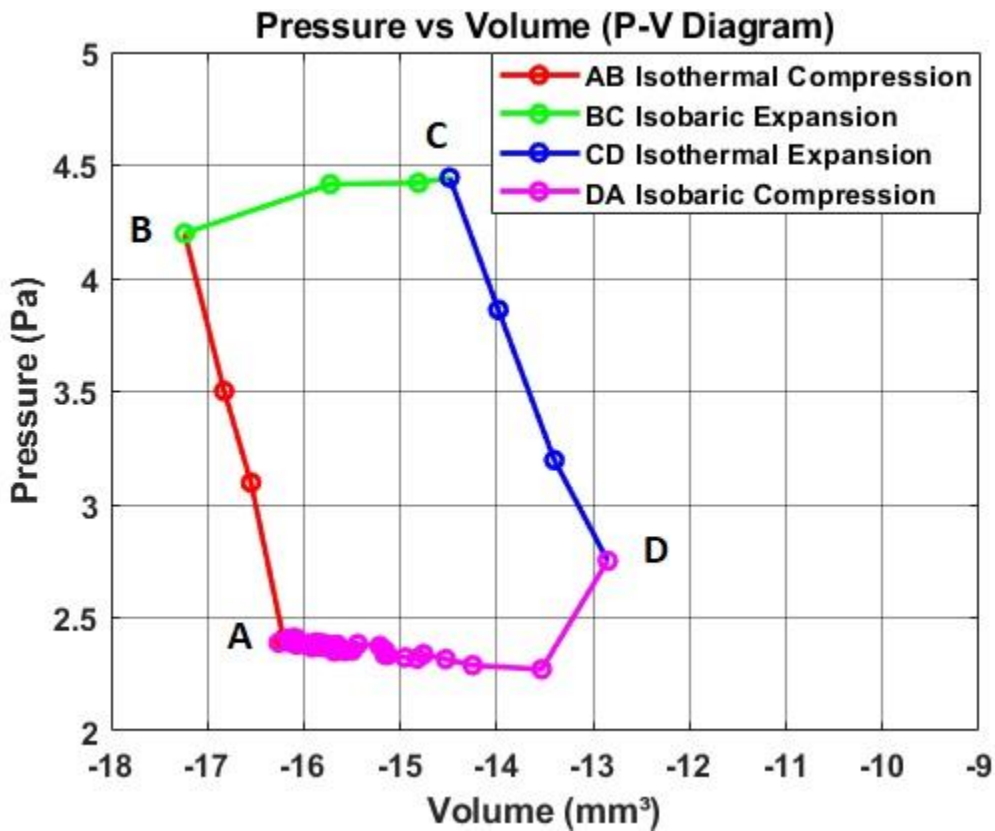


Figure 4: P-V diagram of heat engine. A-B curve shows isothermal compression, B-C Isobaric expansion, C-D isothermal compression and D-A isobaric compression.