

# HEAT ENGINE/GAS LAW APPARATUS

Reference : TD-8572



Versatile apparatus for performing quantitative experiments on the ideal gas law and the cycles of a heat engine.

It has a piston / cylinder system with negligible friction: the graphite piston ( $\varnothing$  32.5 mm) fits perfectly in a Pyrex® cylinder so that the system moves 10 cm with minimal leakage.

Technical characteristics:

Piston diameter: 32.5 mm

Maximum displacement:  $\approx$  10 cm

Experiments:

- Heat Engine  
When the air cap is moved from the cold water receptacle into the hot water container, the piston moves upward and lifts the mass by 200 g. The mass is then removed, and the capsule is returned to the cold water container, creating an isobaric / isothermal cycle.  
The pressure changes are measured with a low pressure sensor, the piston height is measured by the angular sensor, the volume is then determined by multiplying this height by the section of the piston.
- Ideal gas law  
Position the unit on the side so that the weight of the piston is negligible. Immerse the air capsule in a container of cold water and allow the equilibrium to take place. Then place the capsule quickly in a container of hot water and watch the piston move up the cylinder.