

THE GAS LAWS

Boyle`s law ($T - \text{const.}$)

Pressure law ($V - \text{const}$)

Charles`s law ($p - \text{const}$)

Comparison of liquids and gases

	liquids	gases
properties	<ul style="list-style-type: none">•Horizontal surface•We can't compress – they are incompressible	<ul style="list-style-type: none">•We can compress– they are compressible
structure	<ul style="list-style-type: none">•Molecules•They attract mutually (each other)•Motion is limited	<ul style="list-style-type: none">•Molecules•They do not attract nearly•Greater distances•Motion is free
applications	<ul style="list-style-type: none">•Hydraulic machine•Ship transport•Measuring pressure	<ul style="list-style-type: none">•Steam engine (J. Watt)•Generators in el. power stations (thermal and nuclear)•jet engine

Boyle`s law (T-const)

- gas in closed container
- we can describe state of gas by p , T , V
- a mass is constant

For a fixed mass of gas at constant temperature, the pressure is inversely proportional to the volume.

$$p V = \text{const.}$$

$$p_1 V_1 = p_2 V_2$$

Isotherm

