

**Single stage rotary pump****1415**

The rotary vane vacuum pump is designed to create vacuum in a sealed container.  
Single-stage; recycled lubrication, tank, fan, silencer.  
Voltage: 220V 50Hz  
Flow rate: 2.55 m<sup>3</sup>/h  
Ultimate pressure: 0.05 mbar  
Power: 1/4 hp  
Oil tank capacity: 170 ml  
Dimensions: 243x114x207 mm  
Weight: 6.5 kg



1415

**Kit for vacuum pump faucet****1413**

1413

**High vacuum silicone grease 6147**

Tube pack 50 g.



6147

**Oil refill for pumps****0069**

500 ml.



0069

**Rubber tube for vacuum pumps****0090**

Dimensions: 7x17x1000 mm.



0090

**Bell jar****1069**

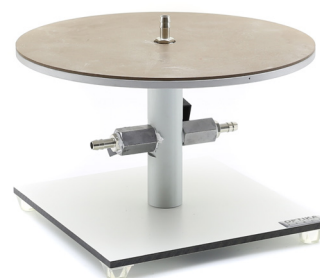
It is made of very thick cast glass.  
Dimensions:  $\varnothing$  external 220 mm / internal 190 mm; h = 230 mm. The lower rim is frosted to have a perfect seal. Rubber cap with hook for electric bell.  
To use with plate code 1068.



1069

**Plate for bell jar****1068**

This plate is made of metal with a perfect sealing.  
 $\varnothing$  250 mm.



1068

**Vacuum bell with buzzer 1410**

To show that acoustic waves do not propagate in a vacuum. For use with the pump code 1415 or code AV-12.



1410

**Vacuum bell with plate 1402**

Plate diameter: 20,5 cm.

Bell height: 19 cm.

To be used with a pump. It comes with a 1m vacuum hose. Resistance up to 1 bar.



1402

**Electric bell****1074**

For bell jar.

Powered by batteries.



1074

**Pressure tear device****1072**

The pressure tear device is made of PVC, with perfect seal.  
It is supplied with its paper.



1072

### Newton's tube (to be emptied)

1070

The tube is provided with stoppers and a tap and contains two objects of different masses and shapes. It has to be connected to a vacuum pump. 1 meter long, made of glass.



1070

### Magdeburg's hemispheres

1242

They are made of metal, with ground rims, supplied with rubber-holder so that they can be fitted to a vacuum pump through a rubber tube. Diameter: 80 mm.



1242

### Baroscope

1071

The baroscope demonstrates the Archimedes push. In the air, the beam reaches the equilibrium, while in the vacuum it tilts on the balloon side, because the Archimedes push stops working. It can be used with bell jar corde 1069.



1071

### Torricelli's experiment apparatus

1043

It enables you to perform the classic Torricelli's experiment, thanks to the tube (length 85 cm, diameter 6 mm) with chemically carved millimetric division on the glass all along the interested part. It is supplied with base, basin, stands and funnel. Mercury is not provided.



1043

**Boyle Mariotte's Law apparatus****1414**

A graduated cylinder made of transparent material is linked, at its bottom, to a manometer. Acting on the piston through a screw with hand-wheel, it is possible to reduce the volume of the air inside the cylinder and, at the same time, to read its pressure value on the manometer. The item is supplied with digital thermometer.

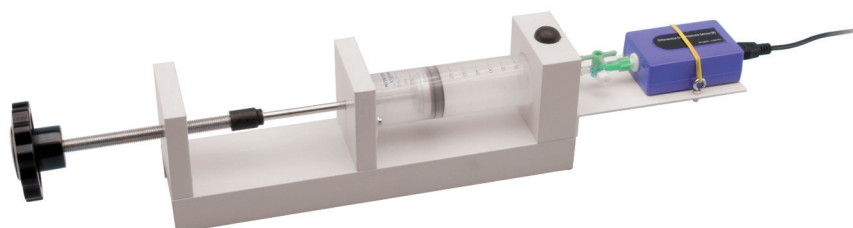
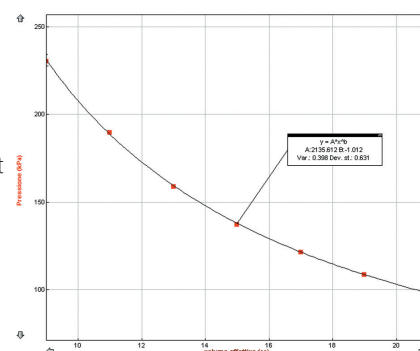
**1414****Device to study Boyle's Law****8216**

Thanks to this item it is possible to study quantitatively the isothermal conversions of gases. A transparent graduated cylinder is linked to a pressure sensor through a dual tap. Acting on the control knob the piston moves varying the volume of the air contained in the cylinder. Connecting the sensor to a real time data acquisition system it is possible to obtain the pressure Vs volume chart at a constant temperature.

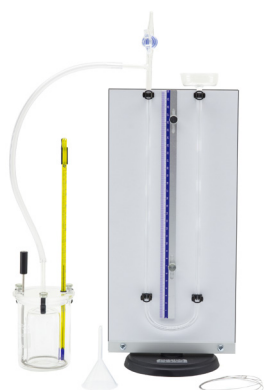
**Equipment for online use - not supplied**

1 Interface code 9001  
1 Pressure sensor code 9034  
or  
1 USB pressure sensor code 9069

Pressure graph according to volume, obtained point by point thanks to data acquisition system based on a PC. The interpolating curve approximates with precision the equation  $pV = \text{cost}$ .

**8216****Gay-Lussac's Law apparatus****1122**

The Gay-Lussac's Law Apparatus allows us to verify the physics law that rules the pressure variation of a gas (at constant volume), as its temperature varies. The burner, the tripod and the wire gauze are sold separately. Mercury is not provided.

**1122****Charles' Law apparatus****1137**

The Charles Law Apparatus allows us to verify the physics law that rules the volume variations of a gas (at constant pressure) as its temperature varies. Therefore we can measure the dilatation coefficient (at constant pressure). The burner, the tripod and the wire gauze are sold separately.

**1137****Equipment for the verification of the laws of gases****1217**

The kit for the verification of the laws of gases contains two devices - Charles' Law apparatus (code 1137) and Gay-Lussac's Law apparatus (code 1122). Saving on the items which are common to both devices, the price is more attractive than the sum of the two prices.

**1217****Free air manometers**

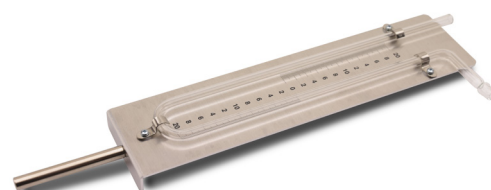
Height 20 cm, without stopcock.

**1047**

Height 20 cm, with stopcock.

**1050**

Height 30 cm, with stopcock.

**1051****1047 - 1050 - 1051**