

FLUID PRESSURE APPARATUS

PR-130 SPECIFIC GRAVITY BOTTLE

Spherical pattern not adjusted, light blown neutral glass, with flat bottom and perforated stopper. Available Capacities are 10ml, 25ml, 50ml



PR-131 HYDROMETERS

For specific gravity, shot loaded, sub-divided in 0.002mm. Overall length approx. 250mm. Range 0.80mm to 1.00mm adjusted for low surface tension, others adjusted for medium surface tension.



PR-132 BERNOULLI'S TUBE

To demonstrate the Bernoulli effect produced by water flow. Comprises a Bernoulli tube, with central constriction, a constant bore gradient tube, 6 length glass tubing, 2 swan-necked outlet tubes and 8 pre-cut lengths of rubber connecting tubing. The 2 flow tubes, each 500x13mm, length 25mmx150mm spacing, extended to form 500mm manometer with the lengths of glass tubing.



PR-133 U-TUBE MOUNTED

Mounted on a wooden stand and includes a scale 0-50 cm.



PR-134 BOYLE'S LAW APPARATUS

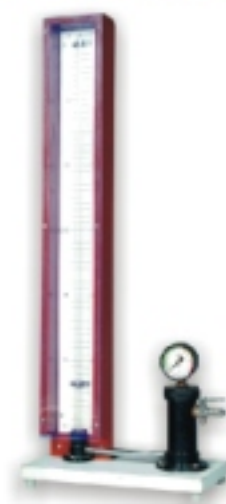
Precise instrument for demonstrating the relationship between pressure and volume of a given amount of gas. Two glass tubes, one closed at one end, and the other with both ends open are connected by a long rubber tube. Wooden meter rule permits measurement.

PR-135 MANOMETER

For use at moderate pressures, fabricated from glass tubing 6mm bore, 8mm outside diameter. Glass manometer with built-in stopcock mounted on back plate. The apparatus is open at both ends and is supplied unfilled, 250mm long, 32mm wide (75mm wide including the side arm)



PR-136 BOYLE'S LAW APPARATUS, DEMONSTRATION TYPE



Wide bore glass tube closed at top is mounted on a scale 0 to 600 mm, with zero corresponding to the inside of the top end. Air is trapped by coloured oil in a metal pressure chamber fitted with a Bourdon Gauge and a rifled inlet tube with stopcock. With a plastic safety screen over the tube.

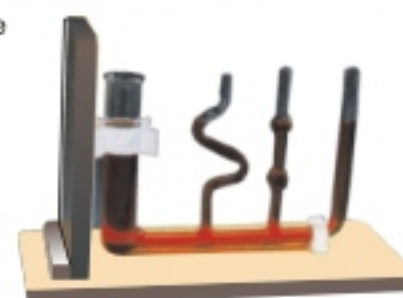
PR-137 SPOUTING CYLINDER

For demonstrating the principle that the pressure increases with depth. Comprising of a 60 mm. metal pipe with 3 orifices of the same size at different heights down one side. The cylinder is 400 mm. high.



PR-138 LIQUID LEVEL APPARATUS

To show that the level of liquid in communicating vessels is constant irrespective of the size or shape of the vessels. The apparatus comprises four glass tubes of different shapes and cross sectional area projecting vertically from a common horizontal tube. The tubes are mounted on a polished wooden base.



PR-139 KINETIC THEORY MODEL

For simulated molecular activity in gases. To understand and study motion and behavior of molecules in gases. An electric motor, running at 4 to 12 V DC vibrates a small platform inside a transparent tube so that a set of many small stainless steel balls is vibrated violently inside the tube. An increase in the violence of vibration simulates an increase in gas temperature and an increase in the weight of the 'float' simulates an increase in gas pressure. Supplied with balls and 2 'floats'.



BOYLE'S LAW - FLUID PRESSURE

PR-140 PASCAL'S LAW APPARATUS

To show that the pressure of liquids depend upon their height and the surface of bottom of the columns and not on the capacities of the vessels, with plastic/glass vessels of four different shapes mounted on leak proof metallic collars, all parts of brass and chrome plated.



PR-141 PASCAL'S LAW DEMONSTRATION

Pascal's apparatus ; To demonstrate pressure transmission unit, Two graduated glass syringes, pistons having capacities of 100cc and 50cc approx. with a cross sectional area ratio more than 3 to 1, mounted on suitable base.



PR-142 PASCAL'S LAW DEMONSTRATION

Same as above but with Plastic syringes of 10ml. and 50ml.



PR-143 BOYLE'S LAW SIMPLE FORM

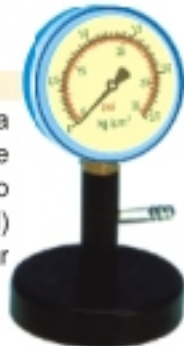
Simple apparatus for demonstration of Boyle's Law, graduated, plastic syringe mounted on wooden block and; lubricated piston of the syringe mounted on another platform. Different weights can be stacked on the top and measurement of pressure volume made.



ATMOSPHERIC PRESSURE

PR-144 BOURDON GAUGE

A circular gauge having overall dia of 100 mm and depth of 40 mm. The dial reads 0 to 50 Lbs / In² x 1 & 0 to 3.5 kg / cm² x 0.1 actual (total) pressure and the case has clear Perspex.



PR-145 PUMP PLATE

Made of aluminium metal, with tube for connection to pump and stopcock for air regulation on central pillar. Mounted on heavy painted tripod base. Diameter of plate 175mm., 200mm., 250mm.



PR-146 VACUUM PUMP

Oil Free Vacuum Pump, Exclusive oil-less construction of piston or diaphragm does not require lubrication, practically maintenance free, portable light weight die-cast aluminium components. Balanced eccentrics provide smooth, low vibration operation. Built in micro air filter, fitted with metal round plate.

Specification

Max. Pressure	40 PSI
Vacuum	23" of Hg
Free Air Delivery	40 Ltrs/min (1.4 CFM)
Motor H.P.	1/3
Watts	250
Phase	Single
Current	1.8 Amps max.
Dimensions	7½"x4½"x9½"
Weight	7.3 kg.



PR-147 FORCE PUMP ON STAND

Approx. overall height x weight (400x150mm). Made of coming glass.



PR-148 LIFT PUMP

Height 355mm approx. Made of coming Glass



PR-149 MAGDEBURG HEMISPHERES

To demonstrate pressure of atmosphere fitted with stopcock and handle. Made of steel.



PR-150 MAGDEBURG HEMISPHERES, LARGE

Magdeburg nickel plated, 100 mm. dia with non returnable valve and nozzle to connect to vacuum pump.



PR-151 BELL IN BELLJAR

For use on pump plate not less than 15 cm. dia. Electric Bell operating 4-6 volts AC/DC, suspended on rubber cord in bell jar. Fine coiled wire connections to terminals mounted in rubber bung sealing the jar. Sizes : 9"x6" and 8"x4"



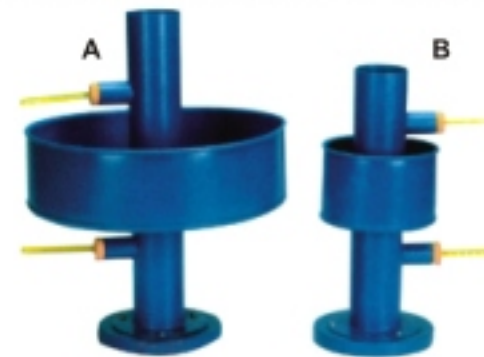
PR-152 HOPE'S APPARATUS

To show the maximum density of water. Sheet iron cylinder 203x50mm (height x dia.), mounted on a base and encircled midway along its length by a gallery 63x100 mm (height x dia.) Fitted with tubular's to carry thermometers and rubber stoppers.

A Hope's Apparatus, Superior

B Hope's Apparatus, Economy

Thermometers for above in set of 2, Range 0-50°C



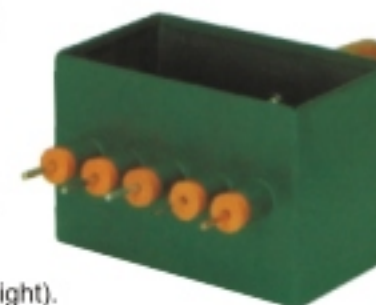
PR-153 EXPANSION OF LIQUIDS APPARATUS

For demonstrating the different thermal expansions of various liquids. Comprising five bulb tubes mounted in a frame and supported in a water trough. The frame has a special sliding arrangement with clips to hold glass bulbs with tubes. The bulbs can be easily removed and fixed, and have a funnel formation on top for easy filling.



PR-154 CONDUCTIVITY APPARATUS

Metal rods 150x3 mm. (length x dia.), one each of aluminium, brass, copper, glass and iron, embedded along one side of a metal tank size 150x90x100 mm. (length x width x height).



PR-155 THERMAL CONDUCTIVITY OF METAL APPARATUS

Comprising strips of copper, iron, aluminium and brass fixed on wooden ring meeting in the centre, outer ends of the strips formed with small cups.



Thermal Conductivity of Metal Apparatus is available in square & round shape.



PR-156 CONDUCTOMETER

To demonstrate relative thermal conductivity of brass, copper, nickel, aluminium and iron. A rod of each metal is radially spaced equally on a brass hub. Each of the rod has a cavity at the outer end for holding paraffin. Using the wooden handle, hold the brass hub over a flame, the wax will melt at different times.



PR-157 THERMAL CONDUCTIVITY OF COPPER, SEARLE'S APPARATUS

Cylindrical copper rod about 300mm. length 25mm. diameter, one end containing a steam chamber connected to inlet and outlet tubes, other end of copper rod has cavity connected via thermometer pockets to water inlet and outlet tubes. Through two thermometers support tubes 75mm. apart are inserted in the rod for finding the temperature at two points. Fitted in teakwood polished case packed with felt with removable front, without thermometers.



HEAT CONVECTION & RADIATION

PR-158 LATENT HEAT OF STEAM APPARATUS

The apparatus comprises a thick brass calorimeter approximately 90x65 mm. diameter, a bung with steam inlet and outlet tubes, a felt cover, and a 1100 cm³ tinplate boiler with bung to take the steam tube which connects to the calorimeter.



PR-159 CONVECTION TUBE

To show the convection of heat in a liquid. Glass tube 20mm outer diameter bent into rectangle approx. 380x300mm, fitted with funnel. Made from corning glass.



PR-160 VENTILATION APPARATUS

Comprising metal box, 220x100x165mm. length x width x height, with sliding front, two glass chimney, standing over tubulure at top of box, candle holder fixed top the base of box beneath the left hand chimney. Without candle.



PR-161 THERMOPILE

It consists of 12 pairs of Bismuth and Antimony bars joined together in series with insulation between them. The couples thus arranged are enclosed in a brass frame having two terminals connected to the Bismuth and Antimony poles. Complete with nickel-plated brass cone and mounted on an adjustable stand.



PR-162 CHARLE'S LAW APPARATUS

Comprising glass U-shape 15mm dia., with one plain limb 220mm long one graduated limb, overall length 120mm. Limb graduated 25 to 35 x 0.2ml terminating in a bulb 37mm dia. with third limb 185x6mm (length x bore), jointed at right angles to the plain of the other two. Short length of the rubber tubing with two pinch clips of on short length of glass tubing mounted in end of wide-bo plain limb with rubber bung. With tall form beaker 1000ml capacity and stirrer. All glass parts made from corning glass.



PR-163 CALORIMETER COPPER & ALUMINIUM

With parallel sides and rolled rim, without stirrer.



Dimensions are in mm.

75x50 diameter 100x75 diameter

PR-164 CALORIMETER SET

A complete set in copper comprising : 1 inner vessel carried on cork supports; 1 outer vessel diameter 1 lid for out vessel with central tubule for thermometer and slit for 1-stirrer.



PR-165 HEATER IMMERSION

12 volts, 50 watts heater specially designed for use with metal block calorimeter. Electrical connection is via 30 cm. leads with heat resisting insulation, terminating in 4 mm. sockets.



PR-166 HEATER IMMERSION

Heater Immersion with lid as shown in the picture. Two different colour coded sockets are mounted on a lid. This is an improved model.



PR-167 CALORIMETER, JOULE'S

For determination of the specific heat capacity of a liquid by the electrical method. The apparatus comprises a nickel-plated copper calorimeter 75x50 mm, fitted with a cork and a heating coil of thin Constantan wire. The resistance of the coil is 6 ohms and the recommended working current is 0.5 A with a maximum of 1A. Electrical connection is by means of a pair of barrel connectors.

Supplied without thermometer.



PR-168 CALORIMETER

Polished Copper, 75x50 mm. diameter resting on felt pad inside an outer vessel, 100x75 mm. diameter. Outer vessel fitted with detachable clip-type thermometer support. Complete with stirrer.



CALORIMETERS

PR-169 CALORIMETER WITH WOODEN BOX

Copper, 75x50 mm., height x diameter, resting on felt pad inside wooden polished box, which is provided with a brass nickel plated thermometer holder, with copper stirrer.



PR-170 CALORIMETER JOULE'S

For determination of the specific heat capacity of as liquid by the electrical method. Comprises a nickel-plated copper calorimeter 75x50 mm. lagged and enclosed within an outer vessel 100x75 mm. A close fitting ebonite lid is provided with a wire stirrer, and a pair of 4 mm. socket terminals connected to a constantan wire heating coil. The resistance of the coil is approximately 6 ohms and should be used with a current of 0.5A with a maximum of 1A. supplied WITHOUT thermometer.

Calorimeter Joule's Thermometer 50x0.1°C, extra for above



PR-171 STEAM GENERATOR

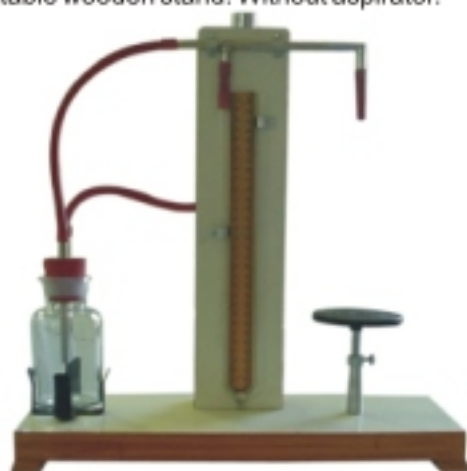
Cylindrical copper vessel 180x115 mm (height x dia.), with filling tube, steam vent and vertical tube terminating the chute passing through side of vessel. Brass tube, a sliding fit in the central tube, to carry thermometer. Lower end cut at an angle to seal the chute.



SURFACE TENSION & VISCOMETER

PR-172 JAEGER'S SURFACE TENSION

Having a wide mouth reagent bottle fitted with a cork having two holes, in one hole a dropping funnel is fitted. Complete with manometer, capillary tube. All mounted on suitable wooden stand. Without aspirator.



PR-173 RISING TABLE WITH CAPILLARY TUBE

The apparatus comprise metal frame, on which four capillary tubes of 10cm. long and of different internal diameters are clamped with the help of small metal brackets. The 9 mm. rod is also attached to metal plate, so that complete clamp can be held in any stand for determining the surface tension of liquid by capillary rise method. Its having a cast aluminium 4" dia table with adjustable stand. Maximum height capacity 12".



PR-174 RISING TABLE

Having a cast aluminium 4" dia table with adjustable stand. Maximum height capacity 12". All metal having brass table of 10 cm. dia with three leveling screws. Coarse and fine height adjustment are provided, very superior and an ideal apparatus.



PR-175 EXPANSION APPARATUS

Comprising two cast-iron uprights, height 18 cm. linked by two nickel plated rods supporting on expansion bar, length 38 cm. fixed to one upright and resting on a friction pointer placed at the other. With scale reading 0 to 90 deg. With one each aluminium, brass and iron expansion bars.

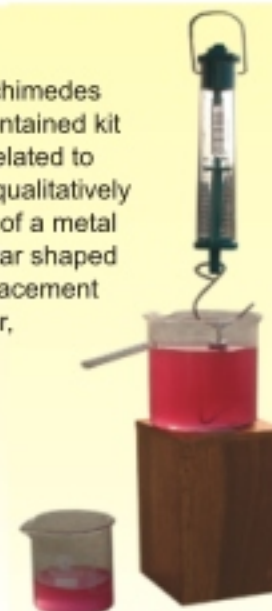


PR-176 VISCOMETER SEARLE'S PATTERN

It is used for measuring viscosity of very viscos liquids. The outer cylinder can be clamped at any desired height and the inner cylinder is graduated in mms and slot is covered by a transparent cover. Complete with scale pans and releasing pin.

PR-177 ARCHIMEDES PRINCIPLE KIT

To explain and calculate Archimedes principle. A complete self contained kit for exploring the concepts related to Archimedes principle, both qualitatively and quantitatively. Consists of a metal regular shaped solid, irregular shaped solid, beaker to collect displacement liquid, beaker, Newton meter, displacement vessel.



PR-178 GUINEA AND FEATHER APPARATUS

Unevaluated glass tube 50 cms. long, 16mm dia. Made from hard glass, with two rubber bungs, one carrying brass and 40 cm. long pressure rubber tubing to connect to vacuum pump.



PR-179 EQUALITY OF PRESSURE IN LIQUIDS

To demonstrate the equal transmission by liquids of pressure in all directions. Comparing glass flask with holes and glass piston.



PROPERTIES OF LIQUIDS AND GASES

PR-180 FLUID PRESSURE APPARATUS

Demonstrates the phenomenon of transmissibility of fluid pressure. For the same force exerted, pressure is inversely proportional to the surface area. The apparatus comprises of the plated brass cylindrical tubes of different diameters, each fitted with piston and connected to each other through a brass tube at their bottom. Pistons have circular disc at the top for loading masses (masses not included). Complete apparatus mounted on a wooden base.



PR-181 TORSION APPARATUS, HORIZONTAL

Searle's pattern. For investigating the torsional rigidity of rods of different materials and to demonstrate that the angle of twist of a given rod over a fixed length is proportional to the applied force. The apparatus consists of two parallel metal support rods with heavy cast metal legs at their either end. One of the legs has ball bearing mounted pulley wheel at its outer side with its spindle carrying split collect chuck for holding one end of test rod while other end of the test rod supported to clamping block on the other leg. When loaded with masses through the nylon cord wound on the pulley wheel, twisting couple if applied to the test rod. Two aluminium scales, graduated 30°-0-30° x 1°, fixed on pillar supports are mounted on the metal supports rods along its length. Also included are two pointers, which when clamped to the test rod along its length and adjacent to the scale, indicates the torsion produced in the rod at that point. Supplied complete with two test rods, one each of brass and steel, nylon cord and hook for carrying masses, but without masses.

