



B.SC PHYSICS LAB EQUIPMENTS

PH 1107- MAXWELL VIBRATION NEEDLE:

For experiment on rigidity. Two solid and two hollow cylinders each 10cm long accurately fitting the bore of a hollow brass tube 40cm long are provided. The tube is also fitted with wire chuck and mirror, graduated scales and verniers on sliding weights. Complete with ceiling attachment without stand.

PH 1108- INERTIA TABLE

To determine the moment of inertia of an irregular body about an axis passing through its centre of gravity and perpendicular to its plane by dynamical method. It consists of an aluminium disc of approximately 6" Dia with a groove and having three masses in it. It can be suspended by a steel wire provided at the centre of a long frame work provided with circular base, which is also fitted with levelling screws.

PH 1110-TORSION PENDULUM (5" BRASS DISC)

The one end of suspension wire hangs from the Universal Clamp with the help of a chuck nut and another end of wire is clamped to solid brass disc of 12.5cm Dia and 1.25cm thick with the help of chuck nut. A heavy metal ring of the same metal (brass) and the same outside diameter as the disc is included. When ring is placed on the disc, the moment of inertia and therefore the period of vibration of system is increased.

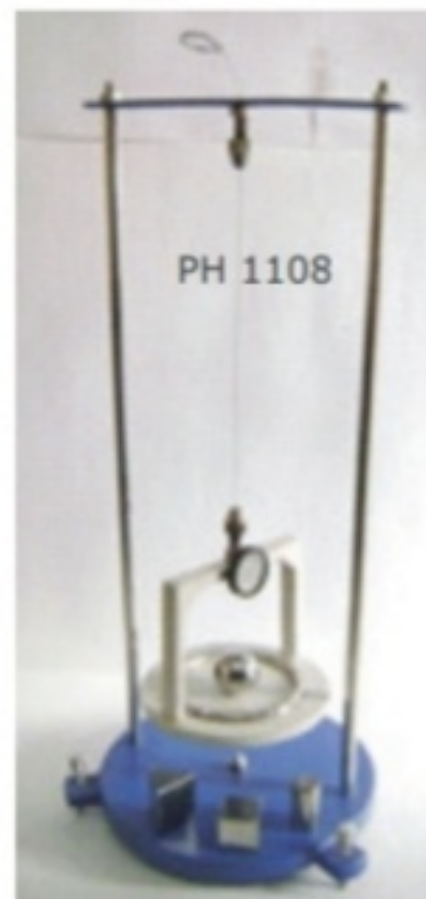
***ALSO PROVIDED IN 6" DIA DISC**

PH 1111-TORSION PENDULUM (BRIDGE TYPE, SMALL SIZE)

Consisting of an aluminium disc 15cm diameter. Another small disc of iron C.P. having same diameter, as the interior of a grooved area of the bigger disc (the small disc has approx. 8cm Dia and 1.25cm thickness). A tall U-shape metal bridge with a split chuck fitted into disc enable accurate suspension and torsion.



PH 1107



PH 1108



PH 1110



PH 1111

PH 1112-TORSION PENDULUM (BRIDGE TYPE, BIG SIZE)

Consisting of an aluminium disc 25cm diameter. Another small disc of iron C.P. having same diameter, as the interior of a grooved area of the bigger disc (the small disc has approx. 8cm Dia and 1.25cm thickness). A tall U-shape metal bridge with a split chuck fitted into disc enable accurate suspension and torsion.

PH 1115- FLYWHEEL

Comprising of carefully machined and balanced cast iron wheel and steel spindle is supported on the ball bearings in strong iron brackets. The sides of wheel are smoothly red painted. The top of wheel is chrome plated and is marked with a thick red line. A pointer is fixed to one of the brackets. Diametric hole is drilled in the shaft to take pin and cord the base is provided with four holes so that the apparatus can be fixed to wall complete with cord and hook.

- (a) 15cm wheel dia.
- (b) 20cm wheel Dia
- (c) 25cm wheel Dia

PH 1117- INERTIA DISC

Consisting of a brass Disc about 15 cm diameters, 6 mm thick size with arrangement for clamping a split chuck with wall bracket

PH 1118-TORSION APPARATUS SEARLE'S TYPE

Horizontal bench pattern. Two cast iron feet each with 3 through holes and grub securing screws, separated by 2 supporting rods, wheel 165mm Dia, over grove moving in ball bearings, mounted on front foot, with spindle carrying split collect chuck for holding one end of test rod, other end supported with clamping block through rear foot. With 2 brass scales graduated 30-0-30 in degrees, mounted on pillar supports, which are

PH 1119- TORSION APPARATUS OR BARTON'S APPARATUS (VERTICAL PATTERN)

A steel frame mounted on a heavy cast iron base with levelling screws. Upper end of rod (under test) 900 mm length and 5mm Dia is clamped by a 3-jaw chuck and lower end is clamped into the axis of a tensional drum which can be rotated by putting load in the scale pan passing over two frictionless pulley. Freely sliding three circular scales graduated in single degrees can be clamped at any position. Three pointers for clamping to the test rod are provided. Complete with three test rods & rings and two scale pans, but without weight.



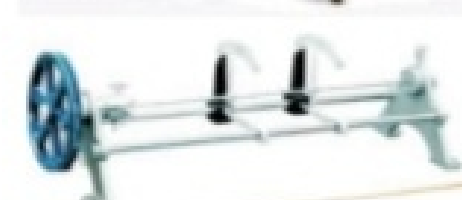
PH 1112



PH 1115



PH 1117



PH 1118



PH 1119

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B.SC PHYSICS LAB EQUIPMENTS

PH 1120- BENDING OF BEAM APPARATUS

Consisting of two G. clamp with knife-edge top. Comprising a metal bar of 100 cm length having width 25 mm and thickness 4.5 mm. Sharp knife edge with hanger is also provided which moves on metal bar. A spectrometer fitted on a cast iron stand (Specially designed for this apparatus) with electric contacts is also provided, but

PH 1122-BENDING OF BEAM APPARATUS KOENIGS METHOD

It consists of a brass beam 9mm square, one meter long, resting on the knife edges of two heavy table G-clamps. A sharp knife edge with hanger rest on the beam. Two tilting type mirrors like optical lever are also provided for this apparatus supplied w/o weights.

PH 1123- COMPOUND PENDULUM IRON P.C.

It consists of a powder coated steel bar of dimension $100 \times 3.75 \times 0.6$ cm with a number of equidistant holes drilled along its length at equal intervals of 5 cm. The pendulum is provided with two removable knife edges passing through any one of the holes. Complete with

PH 1124-COMPOUND PENDULUM (BRASS)

A chrome plated brass bar of dimension $100 \times 25 \times 0.6$ cm Bored of equal intervals of 5 cm and provided with removable knife edge. Complete with wall bracket

PH 1125-COMPOUND PENDULUM (STAINLESS STEEL ROD TYPE)

It consists of a stainless steel rod of 1 meter long and 1.0 cm diameter. The S.S. rod is marked with lines at equal distance of 5 cm. Two circular removable knife edges are provided. Complete with wall bracket

PH 1127- KATER'S REVERSIBLE PENDULUM

Consisting of 120×1.2 cm brass bar with pointed ends carrying two sets of adjustable knife edges and two large and small brass weights. Two similar hard wood weights are provided. Completed with cast iron wall bracket.

***ALSO PROVIDED IN STEEL C.P. ROD**

PH 1128-STAND FOR KATER'S REVERSIBLE PENDULUM

This stand is suitable for all types of compound pendulums of Katter's pendulums listed above Heavy type stand having approx. height 52 inches.



PH 1130-BIFILAR PENDULUM

It consists of a heavy cast iron rectangular plate of dimension $15 \times 10 \times 1.5$ cm. The plate has six holes two holes on top, two holes on front side and two holes on the third side of the top. The plate is suspended by means of two strings of equal lengths from a rigid support.

PH 1131-MAXWELL WHEEL

The validity of the law of conservation of energy is demonstrated using the Maxwell disk by converting potential into kinetic energy (Translation and rotational energy).

PH 1132- RIGIDITY APPARATUS (SEARLE'S PATTERN)

One can find the modulus of rigidity and Young's modulus for the material of wires by Searle's method. The 30 cm long wire under test is connected to two brass rods about 30 cm long at their mid points by two screws fitted at the ends of the wire. The rods are suspended from hooks. Complete with three test

PH 1133-STAND FOR RIGIDITY AND OTHER EXPERIMENTS

Steel Frame with solid base feet for different experiments

PH 1135-RIGIDITY APPARATUS (DYNAMIC METHOD)

It consists of an iron having length 16" and diameter 1". The circular rod is graduated 15-0-15 cm. The circular weight with thumb screw which fits into the rod is also provided.

PH 1136-POISSON'S RATIO OF RUBBER APPARATUS

Consisting of a cycle rubber tube of about one meter length with a small pointer on a heavy cast iron stand.

PH 1137-K CONSTANT SPRING APPARATUS

The apparatus consists of a spiral spring about 25 mm in diameter and 10 cm long. The upper end of the spring is suspended from chuck nut and lower end is provided with small pointer which moves over a vertical wooden meter scale. The lower end is also provided with hook for carrying weights. All this setup is provided on a heavy metal base and with weights.



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B.SC PHYSICS LAB EQUIPMENTS

PH 1138-JAEGER'S SURFACE TENSION APPARATUS

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.

PH 1139-SEARL'S SURFACE TENSION BALANCE

For measuring the surface tension of soap film or any of transparent liquid by the deflection of beam carried by a stretched wire. Fitted on

PH 1140-VISCOSITY APPARATUS STOKES METHOD

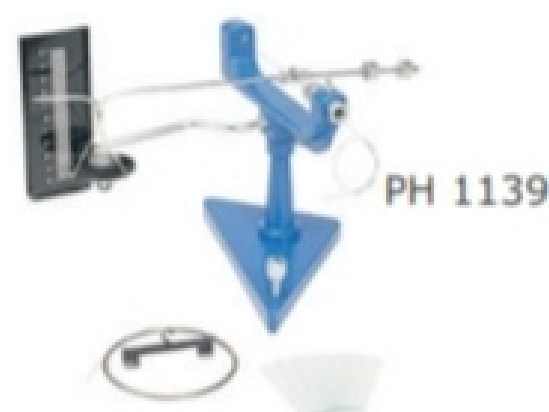
A superior and sturdy apparatus. A Borosil glass tube of about 30 cm Dia and one meter long is made to stand vertically firmly in between two upright bars with the help of clamps on a heavy cast iron base. Both sides of the tube are open. On the lower end a rubber cork without holes is fitted whereas on upper end a rubber cork with a funnel is provided. With two rubber band index mark and 6 steel balls of different diameter. Without lead shot.

PH 1142-MAYER'S VISCOSITY APPARATUS

With this apparatus we can determine viscosity of liquid by oscillating disc method described by O.E. MAYER. A flat disc is suspended horizontally by a phosphorous bronze suspension which is attached to a rod rigidly fastened to the centre of the disc. This rod carries a cross bar whose ends have a screw thread, along which two masses are screwed to balance the disc horizontally. A small concave mirror is fastened to the rigid support, complete mounted on base, but without lamp and scale outfit.

PH 1144-VISCOSITY APPARATUS BY CAPILLARY FLOW METHOD

With the help of this apparatus one can find the coefficient of viscosity of water by noting its flow through a capillary tube of uniform bore. A capillary tube of fine bore is fitted on a wooden board. Then two ends are joined by rubber tubing and it joins to two upright glass L-shaped tubes forming the manometer with scale. With the help of a pinch cock, a steady flow of water is maintained. Complete with a three limbed constant level tank of brass on stand with rubber tube glass parts are made of Borosil glass.



PH 1145-SEARLE'S THERMAL CONDUCTIVITY APPARATUS

Consisting of cylindrical copper rod with its one end surrounded by a steam jacket for heating it from a boiler and the other end is kept cool by a stream of water flowing through a spiral tube provided at that end. Fitted in wooden case lined with felt. The front portion of the case is removable. Without thermometers or steam boiler.
(a) Size of rod 30cm long 1.8cm dia.
(b) Size of rod 30cm long 2.5cm dia.
(c) Size of rod 30cm long 3.7cm dia.

PH 1146-LEE'S AND CHARLTON'S APPARATUS

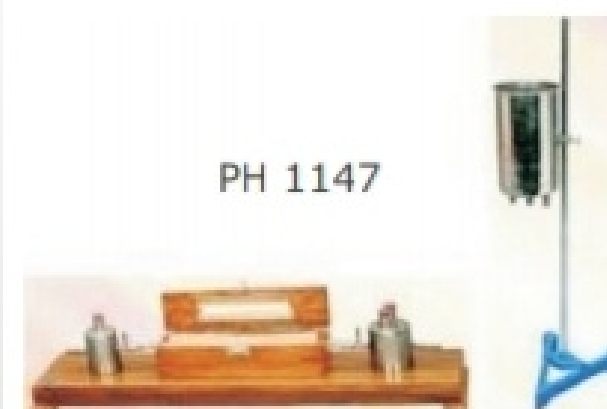
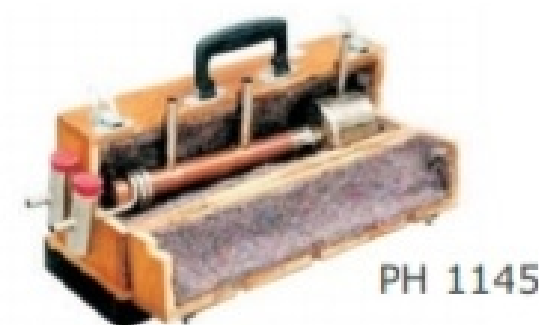
For determining the relative conductivity of thin layers of bad conductor materials. It consists of cylindrical brass slab of 11cm Dia and 10.5mm thick. On this rest a 4.5cm deep brass hollow cylinder (Steam Chest) of this same Dia with inlet and outlet tubes for steam. A hole for thermometer is drilled radially in each, and the cylindrical brass slab is fitted with eyelets to enable it to be suspended by three strings from stout annular

PH 1147-CALLENDAR & BARNE'S CONTINUOUS FLOW APPARATUS DESCRIPTION

(Consisting of a copper calorimeter of 5*7.5cm size with outer vessel of well-polished wood fitted with Bakelite top with hole for thermometer and stirrer. Two terminals are connected to coil of wire for passing current thick brass sheet. Without thermometers or meters

PH 1149-JOULE'S MECHANICAL EQUIVALENT OF HEAT EXPERIMENT

(The apparatus has been designed to explain the basic principle of production of heat by rotating of vanes friction. It consists fixed vanes encased in a wooden case lined with felt. The box can slide freely on a wooden base and is fitted with thermometer clamping device. A rotating cast aluminium cylinder rotates freely on a cast metallic pedestal and to its axle rotating vanes is provided which converts the kinetic energy into heat energy and temperature of water in copper vessel rises after two to three minutes of rotation. Two pulleys and fitted on aluminium sliding bracket. Complete as described & with two set slotted weights and cord. But without thermometer into heat energy and temperature of water in copper vessel rises after two to three minutes of rotation. Two pulleys and fitted on aluminium sliding bracket. Complete as described & with two set slotted weights and cord. But without thermometer. The above apparatus is also provided with non-resettable zero revolution and shown in the diagram & with two set slotted weight and cord. But without thermometer



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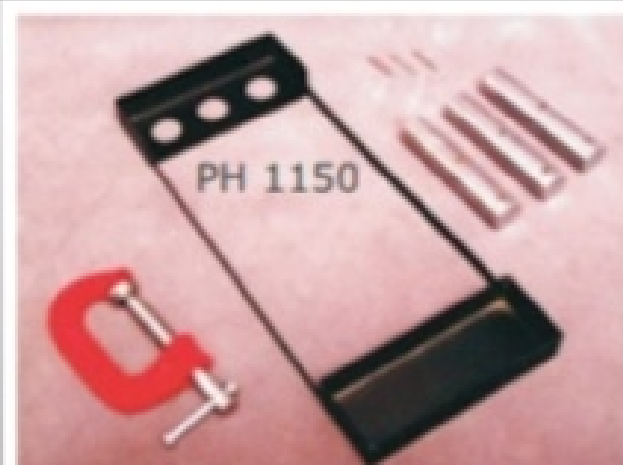
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B.SC PHYSICS LAB EQUIPMENTS

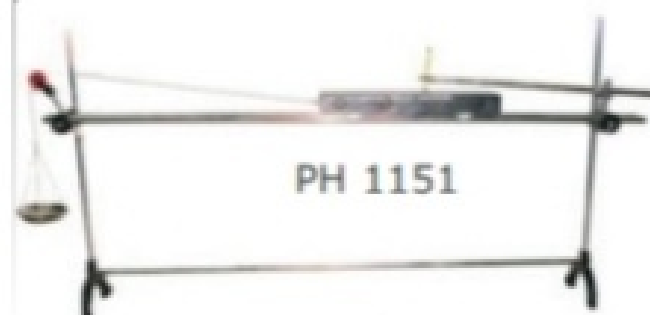
PH 1150-NERTIA BALANCE

For the qualitative investigation of the nature of mass, distinction between mass and weight and comparison of different masses. Two metal tray-shaped platforms, 130'50mm, joined together by a pair of spring steel strips. One of the trays has three identical holes to hold or suspend cylindrical masses. Other tray acts as an anchorage and may be clamped to the bench using a suitable C' GC' clamp. Complete with reel of nylon



PH 1151-FLETCHER TROLLEY

All metal, capable of being assembled and dismantled easily. A large metal trolley with removable cylindrical weights is fitted with wheels which run with very little friction on a track of two steel rods 150 cm long. The rail rods are held in heavy clamps which are fitted in two vertical rods, mounted on cast iron feet. The steel vibrator is fitted to one of the vertical rods and frictionless pulley to the other. The unit is capable to verify the law under different conditions. Complete with cord



PH 1152-COEFFICIENT OF LINEAR EXPANSION APPARATUS

(Horizontal type) fitted with speedometer. Complete with 3 different metal rods, 50cm. Long iron pipe.



PH 1153-Parallelogram Law Of Forces App. (Gravesand app.)

Comprises a strong board polished and painted 40x45cm and a wooden stand (HEAVY PATTERN) or keeping it in the standing position, on the table. Board can be fixed on required position by tightening two screw knobs. Complete with two Z-type pulleys and 3 sets of iron C.P. slotted weights (5 x 50 gm).



PH 1155-HOOK'S LAW APPARATUS 12cm SCALE

Comprises of 0-12 cm adjustable mirror scale. Marked in millimeter and mounted on a sturdy support rod and fixed on a polished wooden base. A hook supporting a close wound helical spring with a mass hanger and indicator is attached to rod. Complete with iron C.P. slotted weight set (5 x 20 gm)



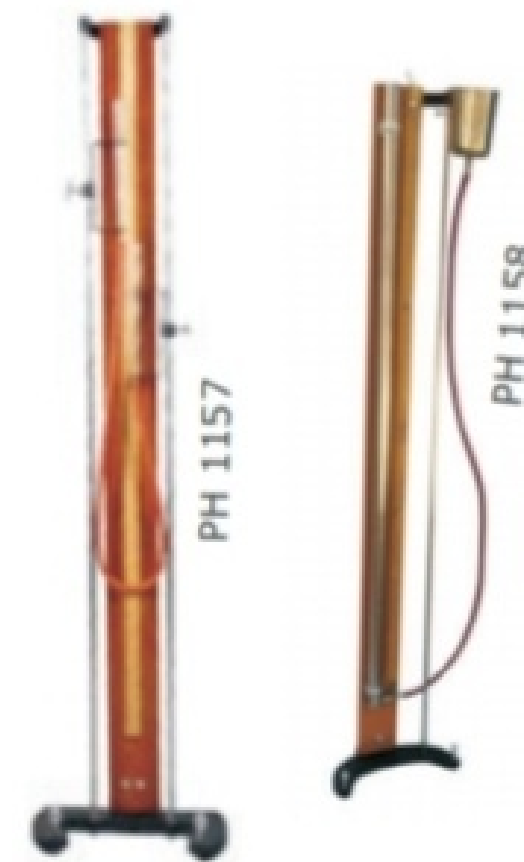
PH 1156-HOOKE'S LAW APPARATUS 30 CM. SCALE

Comprises of 0-30 cm. adjustable mirror scale. marked in millimeter and mounted on a sturdy support rod and fixed on a C.I. Painted base. A hook supporting a close wound helical spring with a mass hanger and indicator is attached to rod. Complete with iron C.P. slotted weight set (5 x 20 gm)



PH 1157-Boyle's law apparatus.

Consists of two glass tubes one having both ends open and the other having one end closed. Both the tubes are mounted on vertical support rods with the help of aluminium sliding brackets that can be positioned anywhere along the length of the rod and are connected to each other through a flexible pressure rubber tubing. A meter rule marked 0-100cm x 1mm, reading in both directions fixed between the two support-rod on a wooden back-support and facilitates level reading in both the tubes. Complete apparatus mounted on a stable heavy cast-iron base with leveling screws. Requires mercury for use, not included (available optionally)



PH 1158-RESONANCE APPARATUS

It consists of a 25 mm stainless steel resonance tube 25 mm diameter and 100cm long, fixed on wooden back support along with meter scale and pvc tube for showing water level in resonance tube.

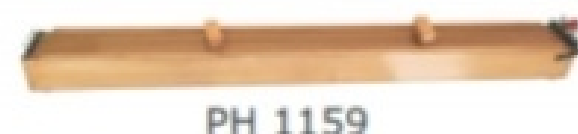
Apparatus mounted on heavy cast-iron base fitted with leveling screws. The lower end of the resonance tube is connected to a stainless steel 250 m.l. reservoir by rubber tubing

The reservoir slides on a metal rod and can be raised or lowered and fixed for adjusting the length of column of air. Apparatus is used to measure the velocity of sound waves in air at room temperature by using a tuning fork.

PH 1159-SONOMETER APPARATUS

Comprising a hollow wooden resonance box 1140 x 100 x 85mm with two meter scales subdivided in millimeter. One each brass and steel wires attached to a fixed bridge and tensioned by fine adjustment pegs:

Two moveable Bridges, pulley and fixed screw are provided to enable a third wire to be fixed for tensioning by weights. Wooden resonance box is made from, soft wood and metal parts are of brass.



PH 1160-POTENTIOMETER 4 WIRE

Comprising of four constantan wires one meter long, clamped under heavy Brass strips and fitted with screws. Each block is fitted with a brass terminal which is mounted on a thick ply wooden board with mica on top. The four wires are stretched along the both ends of meter scale. Supplied complete with Pencil Jockey



PH 1162-POTENTIOMETER 10 WIRE

Comprising of ten constantan wires of one meter long connected in series, clamped under heavy brass strips and fitted with screws. Each block is fitted with a brass terminal which is mounted on 3/4" thick laminated board with both side sun mica. The wires are stretched along the both ends of meter scale. Supplied complete with Pencil Jockey



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PH 1163-METER BRIDGE

four-gap meter bridge has heavy brass strips mounted on 3/4" thick laminated board with both side sun mica. Nine Brass terminals are provided to reduce the resistance to a minimum. The ends gaps are closed by removable brass Binding pieces which are held in position by the terminals. Constantan wire is stretched along the top of wooden meter scale and securely clamped to the Brass end strips so that end errors are negligible. Supplied complete with pencil jockey.

PH 1164-INCLINED PLANE, ECONOMICAL

A simple inclined plane made of polished hardwood board hinged at one end to wooden base board. A 38mm pulley in U-bracket is mounted on the other end of inclined planesupports masses suspended from the thread with other end tied to the object under observation. The index pointer fixed to the inclined surface moves along the arc scale attached to the baseboard and gives its angle of inclination. Includes two wooden block sliders for friction experiments, one metal roller in bracket with hook,

PH 1166-YOUNG'S MODULUS OF WIRES SEARLE'S TYPE

It consists of two brass metal rectangular frames hinged together parallel to each other to allow only vertical relative motion, with a spirit level fixed on a cross-bar pivoted across the frames for taking the reference point. One frame has vertical scale 10-0-10 mm with a micrometer head along it reading to 0.01 mm for adjusting the spirit level. Each has a self-centering chuck at its top holding

PH 1167-Young's Modulus - Vernier Type

This economical version of Young's modulus apparatus includes a 0 - 30 mm scale and a moveable vernier readable to 0.1 mm. Both have bars with clamping screws for the wires and hooks for the tension weight and loading masses. The apparatus come supplied with a clamp for fitting and a tension weight, mass 1.3 kg

PH 1168-WATER TURBINE MODEL

This Water Turbine Hydro-electric power generator is composed of a well made turbine with transparent cover connected to a small motor to generate electricity. Ideal for classroom demonstrations, students can directly observe the process of conversion of water flow to electrical energy that occurs in hydro-electric power

PH 1170-WANKEL ENGINE MODEL

This model shows the internal structure and operating principles of a Wankel engine. This model is cut away to show the internal constructional details. Unlike other engines, the rotary piston engine avoids reciprocating parts. The power piston is an arch like triangular rotor which upon rotation, generates an epitrochoid



PH 1163



PH 1164



PH 1164



PH 1167



PH 1168



PH 1170

PH 1171-GAS TURBINE/TURBOJET ENGINE

The section cut model is constructed of aluminium alloy and unbreakable plastic showing

air intake, axial flow, double stage compressor, fuel supply, combustion chamber, turbine rotor, jet thrust, exhaust etc. Complete on base with printed diagram showing details

PH 1172- TWO STROKE PETROL ENGINE

Sectional working model. Represents internal structure and operating principles of an air cooled two-stroke engine. All parts in aluminium and unbreakable plastic. Ignition is shown by means of a miniature bulb. Carburetor and fuel supply also sectioned. A crank handle is provided for manual operation. Mounted on base with printed diagram showing details.

PH 1173- FOUR STROKE PETROL ENGINE

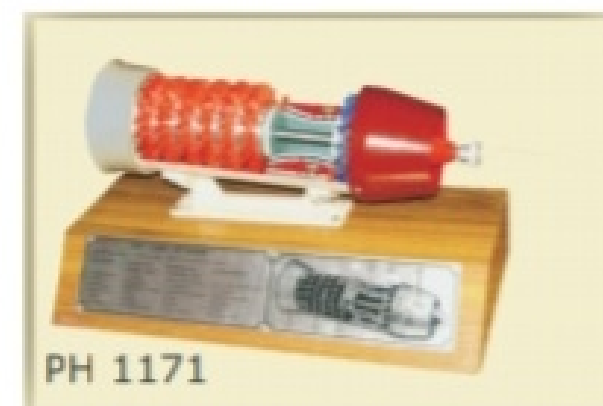
Sectional working model. All parts in aluminium alloy and unbreakable plastic. Cross section of carburetor is also shown. Represents a typical air cooled, side-valve four-stroke petrol engine with the operation of the valves clearly evident. Cams being driven by a gear train from rear of the main crank. A simulated spark plug uses a

PH 1174- TWO STROKE DIESEL ENGINE

Sectional working model of two-stroke diesel engine made in aluminium alloy and unbreakable plastic. Ignition is shown by means of a miniature bulb. Fuel supply is also sectioned. With crank, provided for manual operation. Mounted on base with printed diagram showing

PH 1175-FOUR STROKE DIESEL ENGINE MODEL

Sectional working model of four stroke water cooled diesel engine. All parts in aluminium alloy and unbreakable plastic. All functional components like camshaft, rock - arms, tappets etc. are clearly demonstrated. The functioning of fuel injection system is also represented. Ignition is shown by means of a miniature bulb. Mounted on base with printed diagram showing details



PH 1171



PH 1172



PH 1173



PH 1174



PH 1175

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PH 1176-STEAM ENGINE MODEL

All metallic model shows the actual working and is yet sectional. The metal cylinder is section cut and is covered with plate. Complete with working parts - piston, slide valve, link motion and reversing method can be observed. The movement of the wheel is light enough to demonstrate working even blowing with mouth

PH 1177-NEWTON'S CRADLE:

Consists of a steel frame and 5 Nos of steel balls hung by cord. Demonstrates Newton's third law of motion: By pulling and releasing the different number of balls, collision results among the balls can be observed.

PH 1178- NEWTON'S FIRST LAW OF MOTION APPARATUS

Newton's First Law of Motion, also known as the Law of Inertia, states that an object's velocity will not change unless it is acted on by an outside force. This means that an object at rest will stay at rest until a force causes it to move. Likewise, an object in motion will stay in motion until a force acts on it and causes its velocity to change. Demonstrate Newton's First Law of Motion-a body at rest tends to remain at rest. When the metal spring bar is snapped, the aluminium square is shot through the air while the metal ball remains in place on the stand.

PH 1180- NEWTON'S SECOND LAW OF MOTION APPARATUS

An ingenious and entertaining way to demonstrate Newton's second law of motion. Both balls hit the floor at precisely the same instant! This is amazing since one ball falls straight down while the other is propelled horizontally first. The compact design makes it easy to set up and operate. The spring-loaded release arm assures simultaneous release of the balls for predictable and repeatable results. Comes complete with a set of matched balls.

PH 1181- NEWTON'S SECOND LAW OF MOTION APPARATUS

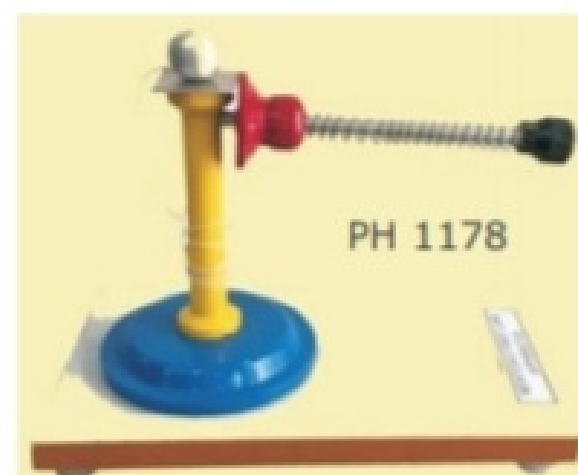
Same as above but bigger size model



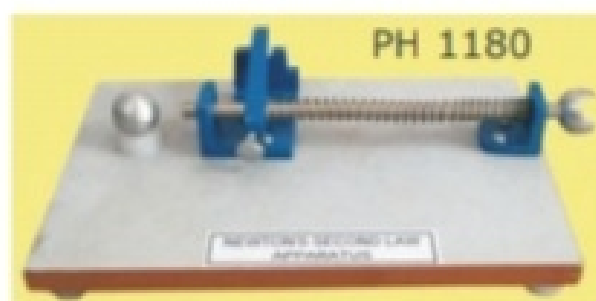
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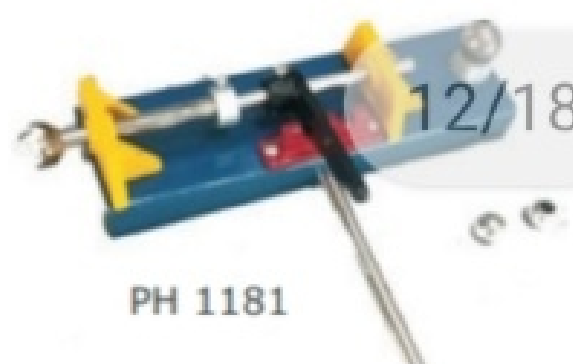
PH 1177



PH 1178



PH 1180



PH 1181

PH 1182- STEAM ENGINE Model

It is a working model of steam engine. It is provided with a safety valve, inspection window, whistle and throttle valve. Working voltage : 230V 50Hz. single phase

PH 1183- STEAM ENGINE MODEL WITH BOILER (FACTORY MODEL)

Operation of a commercial steam engine is well illustrated with this working model. The large size unit is provided with a horizontal boiler with a whistle, safety valve, steam gauge on metal base. Operates on 220V AC. 50 Hz. The engine is provided with a double take-off pulley and is mounted on a metal base. Drives a Dynamo and lights a LED.

PH 1185- UNIVERSAL FORCE TABLE

This feature-packed Precision Force Table is the classroom standard for studying the vector nature of forces and verification of law of composition and resolution of forces. Table made of precision turned circular aluminium disc, with raised rim and is finished with scratch resistant matt black paint. The raised rim has a circular scale graduated to 360 degree. The table-top is supported by a sturdy vertical metal pipe and a heavy tripod C.I. base with three leveling screws. Four adjustable pulley clamps with index marks can be attached anywhere around the perimeter of the table for performing experiments. Complete with weights

PH 1186- PULLEY DEMONSTRATION SET:

A highly versatile apparatus for the demonstration of various concepts associated with pulleys and their configurations. Consists of a rectangular wooden base 81 x 20 cm with two sockets on its top in which metal rods of diameter 12.5 mm and length 81 cm can be screwed in vertically. At the top of the vertical rods, two right angled clamps support a horizontal rod of the same size. Eight collars with hook are provided and can be inserted on the horizontal rod for suspending various pulleys. A capstan is fitted on the wooden base at one end, with a hook for attaching a pulley at the other end of the base.

PH 1187- MODEL OF WINDMILL:

A big size model complete with impeller, Generator and LED for exploring the science behind wind energy in classrooms. Simple to carry and demonstrate. Explains the conversion of wind energy into electric energy and demonstrates the power of the wind. An electric fan or high speed wind generates electric power and glows a LED.



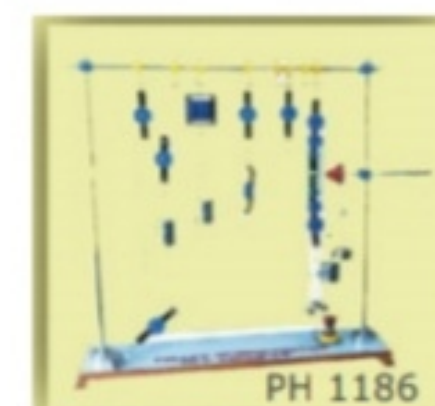
PH 1182



PH 1183



PH 1185



PH 1186



PH 1187

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B.SC PHYSICS LAB EQUIPMENTS

PH 1188- CONSTANT LEVEL TANK

For maintaining a uniform flow of water through calorimeters or other equipment regardless of pressure fluctuations water supply line. The level cannot rise above a central overflow tube in the chamber. Consisting of a copper vessel of 100*75mm diameter with tubes for water inlet, outlet and overflow. A clamp for to any 9mm support rod is providing. With retort stand of 6*4*18*3/8".



PH 1188

PH 1189- ANEMOMETER CUP COUNTER AS PER ISI

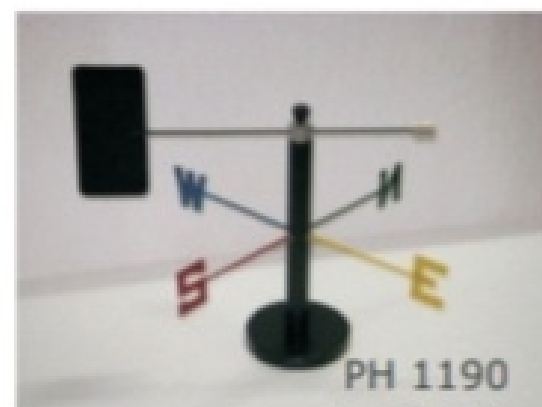
Specification No. is 5912-12, the instrument has cup wheel consisting of three conical cups in a horizontal plane. The cup wheel spindle is of stainless steel and connected worm gearing to a revolution counter mounted in water proof housing. By observing the counter reading at the beginning and end of any period of interest the average wind speed during the interval can be calculated. The counter observing window is



PH 1189

PH 1190- WIND VANE

It meets three important requirements for accurate indication of wind direction. It is designed to produce the maximum of torque relative to its moment of generator for a given change in wind direction. It rotates with minimum friction, and is balanced to avoid bias towards any particular direction. Most suitable for mounting on buildings very useful Meteorological departments. As per I.S.I. specification with cardinal points on cast iron stand.



PH 1190

PH 1191- READING TELESCOPE, COLLEGE PATTERN

The superior quality achromatic objective has an aperture of 25mm and has focal length of 17.5cm. The carriage of the telescope (with up and down motion, improved design, college pattern) tube is fitted with vertical movement by a fine micrometer achromatic objective has an aperture of 25mm and has focal length of 17.5cm. The carriage of the telescope (with up and down motion, improved design, college pattern) tube is fitted with vertical movement by a fine micrometer screw. Focusing arrangement is given by rack and pinion. Complete on a heavy metallic stand having pillar of 18"



PH 1191

PH 1192- OPTICAL LEVER

For measuring the thickness of thin articles by optical method. Optical work 40mm dia plain mirror mounted on a metallic arc. The arc is mounted on a aluminium metallic base with two fixed legs and one levelling screw.



PH 1193- TRAVELLING MICROSCOPE

With horizontal and vertical scales. The bed is of cast iron and accurately machined. The horizontal carriage is machined and inters ground on the guide ways of the horizontal bed. The carriage is fitted with vertical brass pillar carrying a microscope tube on a ground fitted vertical carriage. The base is fitting with two levelling screws. Horizontal scale is 20cms and vertical 15cms. Long. Both the horizontal scale and vertical carriages are provided with slow motions, which travels app. 3cms in one traverse. Microscope tube is provided with rack & pinion. A milk white Perspex platform is provided on the horizontal bed. Vernier constant 0.001cms. Complete in well-polished wooden case. Having stainless steel scale.



PH 1193

PH 1195- VERNIER MICROSCOPE (SIX POSITION) MICROSCOPE

For use in various positions. Microscope is mounted on a travelling carriage sliding along the table of the instrument screw. Scale is 17cms. -Long and white Perspex platform is provided, vernier constant 0.001 cms. Complete in well polished wooden case. Having



PH 1195

PH 1196- NEWTON'S RING APPARATUS

Comprising a pair of glasses one plane and the other slightly convex in metal frame with three screws for applying pressure:
(a) 50mm dia (b) 60mm dia (c) 75mm dia



PH 1196

PH 1197- NEWTON'S RING EXPERIMENT MICROSCOPE

Specially deigned for Newton experiment. It can also be used in various positions. The bed is of cast iron and carries the machined guide ways. The scale is 17 cms long. The sliding carriage is provided with microscope slow motion and travels app. 3cms in one traverse. Microscope tube is fitted with achromatic objective and focusing is provided with rack and pinion. Vernier constant 0.001 cm. Complete in well polished wooden case. Having stainless steel scale and vernier.



PH 1197

PH 1198- OPTICAL BENCH WITH WOODEN BED AND METAL ACCESSORIES

One meter long seasoned evenly top with engine divided scale in mms on heavy supports. 4metal base sliders Include 4metal accessories. Out of four sliders two sliders are provided with transverse slow motion arrangement



PH 1198

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B.SC PHYSICS LAB EQUIPMENTS

PH 1199- OPTICAL BENCH DOUBLE ROD SCHOOL TYPE (1 METRE LONG)

Double bar type 1 meter long with 4 metallic sliders two lens holders and two needles:

a) Having both steel C.P Rods.

PH 1200- VAN DE GRAFF GENERATOR

It is very good improvement over whims hurt machine. A very efficient apparatus and showing its field effect from a longer distance. Collecting sphere is of aluminium sheet and is removable to show the constructional detail. Fitted on wooden base with hand rotating wheel and connection to Earth, and a

PH 1201- VAN DE GRAFF GENERATOR MOTORISED

As above but fitted with F.H.P. electric motor working on 220 volts A.C./D.C. Mains current. Fitted on wooden base with line tester.

PH 1202- VIBRATION MAGNETOMETER

- In well polished wooden case with levelling screws and anti parallax mirror. Complete with brass fittings, magnet and brass bar of same size and stirrup. It has got removable glass font. (b) Ditto-Medium quality with aluminium parts fittings.

PH 1203- DIP CIRCLE

All metal, standard make. The non magnetic cast metallic base is provided with three levelling screws. The horizontal base is graduated in 360 degrees. A vertical pillar with vernier moves smoothly on horizontal base. A vertical metallic case of cast aluminium with removable glass sides is fitted on the vertical pillar. The magnetic needle moves freely on Swiss cone bearings and is well balanced and magnetized; a sensitive spirit level is also provided

PH 1204- LAMP & SCALE

Extra superior quality and heavy in construction. The lamp house is of cast aluminium, machine turned and finished in pleasing duco paint. It is fitted with 8 volts electric bulb through built in transformer and works on 220 volts A.C. Mains. Translucent Perspex scale graduated in 25-0-25cm is used in this unit. Complete on heavy cast iron stand with adjustable brackets for lamp house and scale with cord and pin plug.

***ALSO AVAILABLE WITH WORKING ON 220 VOLTS AC MAIN WITH OUT TRANSFORMER**



PH 1199



PH 1200



PH 1201



PH 1202



PH 1203



PH 1204

PH 1205- GOLDLEAF ELECTROSCOPE BOX TYPE METAL CASE

The metal case tends to eliminate vagrant deflections some times caused by charges residing on glass walls. The leaf support rod is the case are of glass to give

PH 1206- CAPILLARY TUBE CLAMP

The apparatus comprises a 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 9mm 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

PH 1207- MELDE'S APPARATUS OSAW TYPE

An electromagnet is arranged between the prongs of the fork without touching it. A small spring type strip just is attached to the one of the prong. A screw just makes contact with this strip, scale pan, bench clamp

PH 1208- RAY BOX

Comprising a ray projector built in metallic case with slit on its side. Working on 220 volts A.C. mains through built in transformer and with Perspex accessories set of two.

PH 1209- JOULE'S CALORIMETER

Consisting of a copper calorimeter of 5*7.5cm size with outer vessel of well-polished wood fitted with Bakelite top with hole for thermometer and stirrer. Two terminals are connected to coil of wire for passing current

PH 1210- SPECTROMETER

College type. Read by two opposite vernier reading to one minute of the arc. The objectives used in telescope and collimators are achromatic and provided with rack and pinion focusing arrangement. Telescope arm and prism table are provided with fine and coarse adjustment. The prism table is provided with three levelling screws and is engraved with concentric ring and lines. The scale and vernier are of stainless steel and are machine divided. Cover plate protects the scale from dust and carries two



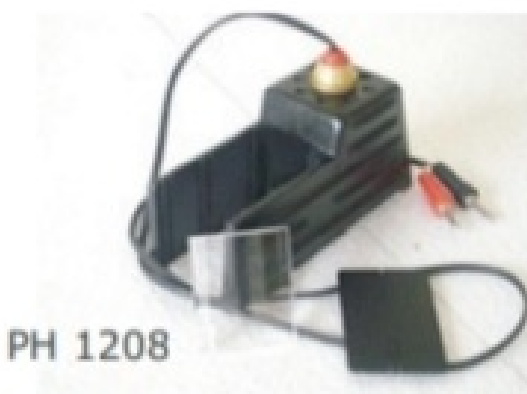
PH 1205



PH 1206



PH 1207



PH 1208



PH 1209



PH 1210

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