

## **TERMS OF BUSINESS AND ORDERING INFORMATION**

### **PRICE**

Due to fluctuation of currency and inflation we are hesitant to circulate our price list but will quote you our current price immediately on receipt of enquiries.

### **DESIGN**

As in catalogue. Due to constant improvements in the design, we reserve the right to change/alter the description of any item.

### **COPY RIGHT**

As in Catalogue.

### **PAYMENT**

Our usual terms of payment is confirmed Irrevocable Letter or Credit or 100% advance by Bank Draft or T/T through our bank.

### **BREAKAGE**

We send the goods from this end thoroughly checked and any damage in transit is not covered by us. It is advisable for you to take cover through insurance. In case of our CIF supply, please get the goods surveyed locally on the basis of Insurance Certificate provided by us and lodge claim with them. Non delivery of whole or part shipment is the sole responsibility of the transport agency and claim with them only.

### **WEIGHTS AND BALANCES**

These are meant for educational laboratories and should not be used for commercial purpose.

### **ELECTRICAL ITEMS**

Item other than low voltage use are based on 220V, 50Hz supply. We take utmost care for the safety but will not hold ourselves responsible for any happening due to electrical shock etc.

### **LIABILITY**

Limited to the cost of the items only.

### **VALIDITY OF PRICES**

We will try to hold prices quoted by us for responsible time baring unforeseen circumstances.

### **DELIVERY**

All efforts will be made for the earliest delivery but will not have any liability caused due to delay or non delivery which some time happen due to unforeseen reasons.

### **DISPUTE IF ANY**

All disputes are subject to Delhi (India) Jurisdiction only.

# CONTENTS

**3** **BIOLOGY & EARTH SCIENCE**

**22** **ELECTRICITY & MAGNETISM**

**37** **HEAT**

**40** **LIGHT (OPTICS)**

**50** **MECHANICS**

**70** **SOUND**

**74** **LABORATORYWARE**

**88** **PORCELAINWARE**

**90** **GLASSWARE**

Please note: We have access to a large range of products not listed in this catalog. Besides, we have an active R & D program and manufacturing facilities including glass blowing, to meet the needs of our customers, We invite you to call or fax us for your requirements.

## TRIPOD MAGNIFIER, STOOL TYPE (TABLE TOP)

For studying biological and geological specimens where focusing is not required particularly suitable in elementary schools.

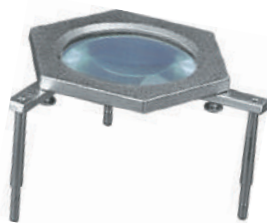
Comprised of a large wooden tripod with screw-in angled legs, fitted with a plano-convex glass lens of diameter about 100mm. Magnification 2X. Height approximately 250mm. Prefocused.



1010-05

## MAGNIFIER, TRIPOD, LARGE

Suitable for examining specimens on uneven surfaces. Comprised of a plano-convex lens, diameter about 100mm, mounted in a hexagonal metal frame with three metal arms which are free to pivot in a circular path. Telescopic metal legs with rubber feet are fitted at the end of each swivel. Overall width approximately 190mm.



1010-07

## MAGNIFIER, TRIPOD

For use on the laboratory table. Suitable for elementary biology laboratory, dissections and for closer examination of specimens.



Consists of a pair of plano-convex lenses mounted in a black plastic frame, metal legs and a ring. The aperture is 18mm and magnification is 10X. Focused by up and down screw movement. Undistorted field.

1010-09

## MAGNIFIER READING GLASS, ROUND, HAND HELD

For examining biological and geological specimens in field and laboratory.

A polished optical lens is mounted in a plated metal rim which is threaded in a black plastic handle.



Lens diameter	Magnification	Cat. No.
50mm	2.5X	1012-01
75mm	2X	1012-02
100mm	2X	1012-03

## MAGNIFIER PLASTIC

A 2X lens mounted in plastic frame



Lens diameter	Magnification	Cat. No.
50mm	2x	1012-20
75mm	2X	1012-22
100mm	2X	1012-24

## MAGNIFIER, CLEAR PLASTIC

A 50mm diameter clear acrylic magnifier, with 3x and 6x magnification.



1012-40

## MAGNIFIER FOLDING, POCKET, DOUBLE LENS MODEL

Comprised of two convex lenses, each of which is mounted individually in black plastic rings of diameter approximately 30mm. Magnification is 10X when both lenses are used and 5X when single lens is used. Both the lenses fold compactly in a black plastic frame. Overall length about 65mm long when opened.



1017-01

## MAGNIFIER FOLDING POCKET

Comprised of a pair of convex lenses, magnification 10X, mounted in a black plastic ring of diameter approximately 22mm. Folds completely in a metal frame. Overall length about 56mm when fully opened.



1018-00

## MAGNIFIER, GOOSE NECK

Suitable for biology laboratories because of its wider field and larger focal length.

Comprised of a double convex glass lens of diameter approximately 100mm, focal length 250 mm and magnification 2X, framed in a plated brass ring. Mounted in a swivel with flexible gooseneck, fitted on a cast iron base.



1020-00

## MICROSCOPE SLIDE BOX, WOODEN, HINGED

For storing standard (1 x w), 75 x 25mm microscope slides in individually numbered grooves. Made of teak wood frame with non-warping plywood bottom and lid secured with plated metal hinges. Slide grooves are smoothly cut. Equipped with a printed index card for titles.

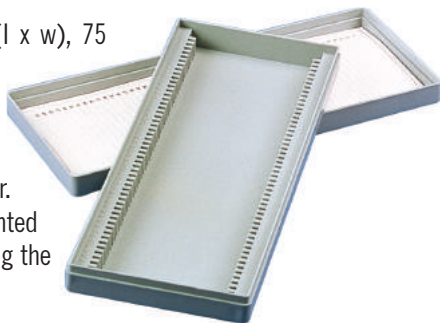


Capacity of slides:	25	50	100
Cat. No.	1031-01	1031-02	1031-03

## MICROSCOPE SLIDE BOX, PLASTIC

For storing standard (1 x w), 75 x 25mm microscope slides in individually numbered grooves.

Made of ABS polymer. Equipped with a printed index card for recording the titles.



Capacity of slides:	25	50	100
Cat. No.	1032-01	1032-02	1032-03

## MICROSCOPE SLIDES WITH DEPRESSION (S)

For holding liquids and cultures for microscopic examination.

Made from selected 1.5mm thick microscope slides (1 x w), 75 x 25mm with ground edges. Spherically polished cavities are of 13mm diameter with 0.5 - 0.6mm depth.



Depression	Single	Double
Cat. No.	1035-01	1035-02

## SCISSORS, DISSECTING, STRAIGHT

For quickly cutting connective tissue and muscle. Made of stainless steel. One blunt and one sharp blade end. Length 125mm.



1070-01

## SCISSORS, DISSECTING, IRIS, STRAIGHT

For fine dissection work. Made of stainless steel with two sharp point blades.



Overall length	115 mm	125 mm
Cat. No.	1072-01	1072-02

## SCISSORS, DISSECTING, IRIS, CURVED

Ideal for fine dissection work. Made of stainless steel with sharp and curved tips. Length 115mm.



1073-00

## BONE SHEARS (BONE CUTTING FORCEPS)

For speeding dissection work by cutting cartilage, chitin, bones, skull etc. Made of stainless steel.



Depression	125 mm	175 mm
Cat. No.	1074-01	1074-02

## SCALPEL, FIXED HANDLE

For general dissection work. Integral handle. Made of forged stainless steel with a honed cutting blade. Handle is ground and satin finished. Overall length 150mm, cutting edge is 38mm long.



1076-01

## SCALPEL HANDLES (SURGICAL HANDLES)

Detachable flat form in two sizes. Used with replaceable scalpel blades.

Made of stainless steel. Without blades. Slip lock design.

Handle No. 3 : For finer dissections. Used with #10, 11, 12 and 15 scalpel blades. Length 130mm. 1077-01

Handle No. 4 : For heavier dissections. Used with #20, 21, 22 and 23 scalpel blades. Length 130mm. 1077-02



## HAND MICROTOME SIMPLE

For introductory biology and histology work. Suitable for slicing micro thin sections from 0.01 mm (10 microns).

Consists of a piston screwed into a tube whose free end is fixed into a flat plate serving as a stage. The knurled head at the bottom of the instrument moves the piston up or down the central tube when rotated. The specimen is fixed on the flat top of the piston and sections are cut by drawing a razor over the upper flat surface of the instrument. Equipped with a clamping mechanism for objects of different shapes. Graduated in 10-micron (0.01mm) steps. Advances 500 microns (0.50mm) for each complete turn. Supplied with a single edge tempered steel razor knife. Packed in a velvet lined wooden case. 1050-00

## FORCEPS, BLUNT TIP, STRAIGHT (THUMB FORCEPS)

For handling specimens. Made of stainless steel. Serrated and rounded tips for better grip. Corrugated sides.

Length	115 mm	125 mm	150 mm
Cat. No.	1055-01	1055-02	1055-03

## FORCEPS, FINE TIP, STRAIGHT

For more accurate dissection work. Made of stainless steel. With serrated tips, corrugated sides.

Length	115 mm	125 mm	150 mm
Cat. No.	1059-01	1059-02	1059-03

## FORCEPS LARGE, BLUNT TIP

For removing large objects from deep containers. With serrated sides and tips. Overall length 250mm. Made of stainless steel. 1065-00

## FORCEPS, BLUNT TIP, CURVED

With serrated sides and tips. Made of stainless steel. Length 125mm 1057-01

## FORCEPS, FINE TIP, CURVED

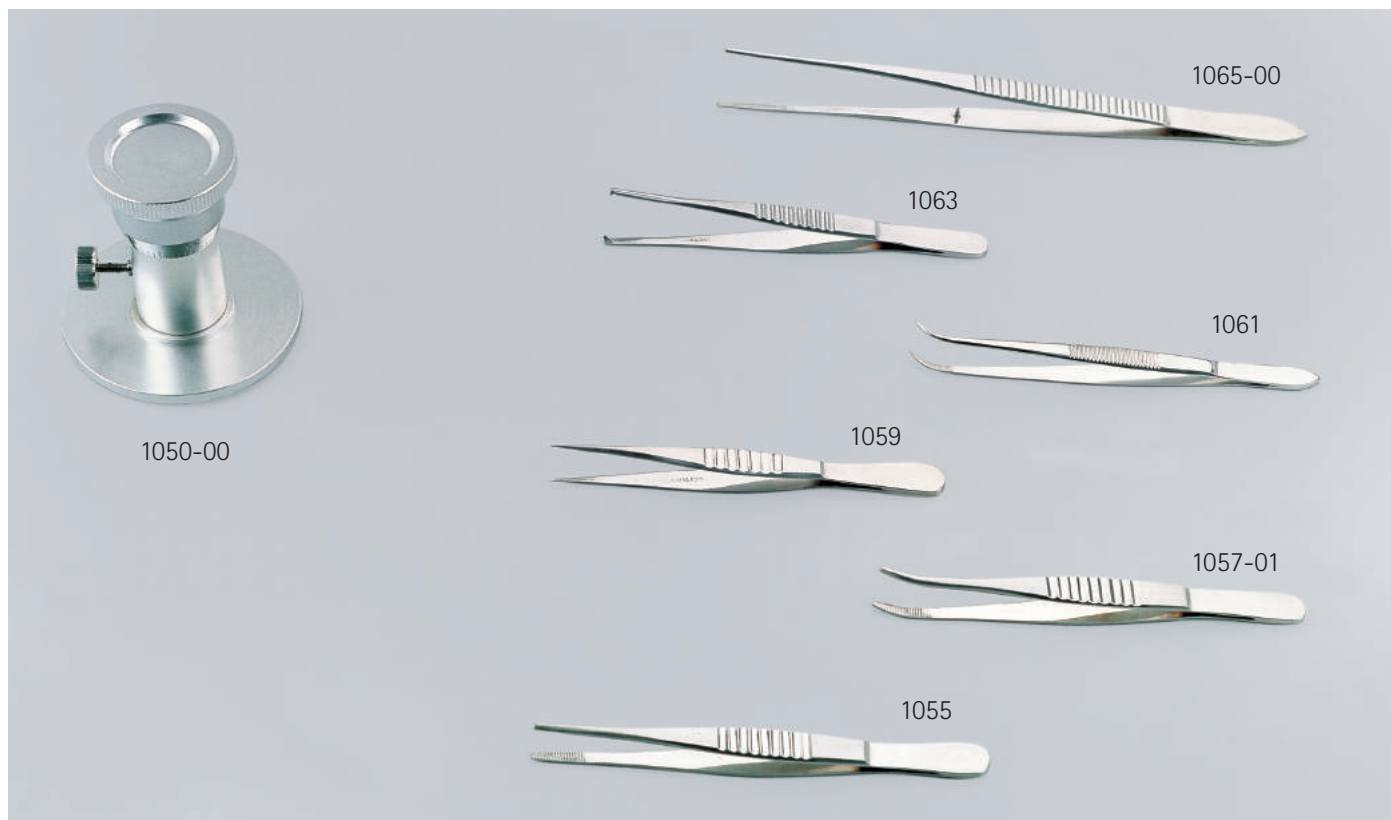
For precise dissection work. Made of stainless steel. With serrated tips, corrugated sides.

Depression	115 mm	125 mm
Cat. No.	1061-01	1061-02

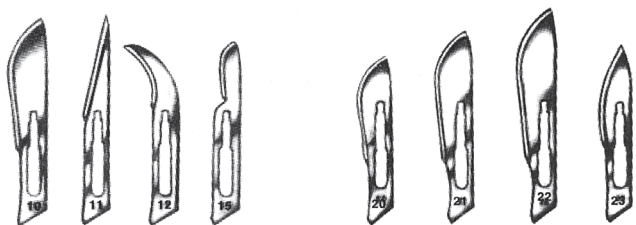
## TISSUE FORCEPS

To grasp and separate the skin and connective tissue on specimens during dissection. A deep "V" groove on one jaw accommodates a tooth on the other jaw (1 x 2 teeth). It is also called a rat-toothed forcep because of this unique design. With serrated sides. Made of stainless steel.

Size	115 mm	150 mm
Cat. No.	1063-01	1063-02



## SCALPEL BLADES



For standard scalpel handles No. 3 and No. 4.

Made of surgical steel, sterile and individually packed in aluminium foil. Differ in size and curvature. Pack of 10 blades.

No.	Cat. No.
10	1078-01
11	1078-02
12	1078-03
15	1078-04
20	1078-05
21	1078-06
22	1078-07
23	1078-08

## TEASING NEEDLES

For student dissection work. With wooden handle. Overall length approximately 130mm. Sharp points. Pack of 100.

	Straight	Bent
Cat. No.	1080-01	1080-02

## TEASING NEEDLES, WITH HANDLE

For greater strength and easy cleaning in dissection work. Finely pointed with hexagonal handle. One-piece construction of stainless steel. Overall length 130mm.

	Straight	Bent
Cat. No.	1081-01	1081-02

## PROBE & SEEKER, MALL

An essential dissection instrument. An angular and blunt (tapered) probe with hexagonal handle. One-piece construction of stainless steel. Overall length 130mm.

1083-00

## DROPPING PIPET (MEDICINE DROPPER)

Straight tip. "Eye Dropper". With a rubber bulb of capacity 2mL. Overall length 100mm. Made of neutral glass.

1085-01

## DISSECTION SET, BASIC

For performing complete dissection by students. Made of stainless steel and consists of the following instruments in a folding PVC pouch.

Ruler, plastic, 15cm

Scissors, surgical, with one blunt and one sharp point 125mm

Scissors, iris, sharp points, 110mm

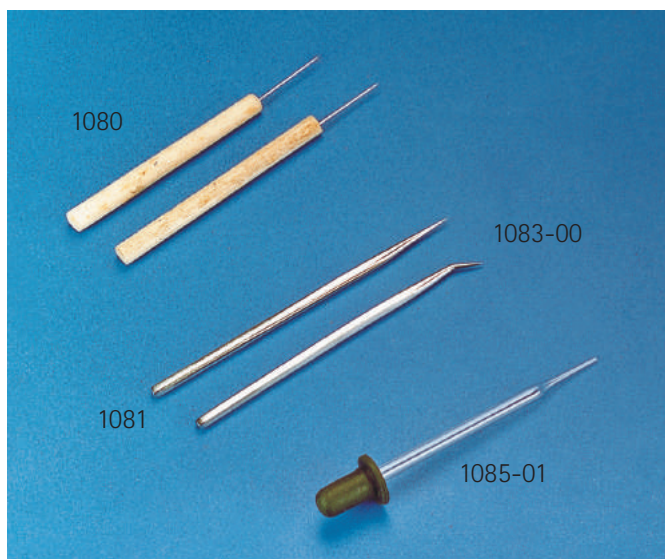
Forceps, blunt tip 125mm

Forceps, microdissection, straight, 115mm

Teasing needle, pointed, 130mm

Teasing needle, with plastic handle, 130mm

1090-00



## DISSECTION SET



Designed for work in general biology.

Made of stainless steel and consists of the following instruments in a folding PVC pouch.

Ruler, plastic, 15cm

Scissors, surgical, with one blunt and one sharp point 125mm

Scissors, iris, sharp points, 110mm

Forceps, blunt tip, 125mm

Forceps, microdissection, curved, 115mm

Scalpel handle No. 4

Teasing needles, pointed, 130mm, two

1095-00

## DISSECTION SET, ADVANCED

For more advanced dissections with broad selection of needles and



forceps.

Made of stainless steel and consists of the following instruments in a folding PVC pouch.

Ruler plastic, 15cm

Forceps, sharp points, 115mm

Forceps, sharp points, curved, 115mm

Forceps, blunt tips, 125mm

Scissors, surgical, with one blunt and one sharp blade Scissors, Iris, 110mm

Scalpel handle No. 4

Scalpel blade No. 22, Pk of 10

Scalpel blade No. 23, Pk of 10

Probe and hook, 130mm

Teasing needles, pointed, 130mm, Two

1105-00

## DISSECTION SET, GENERAL PURPOSE

General purpose dissecting set suitable for students and instructors.

Includes the following

Ruler plastic, 15cm

Forceps, straight sharp points, 115mm

Forceps, thumb, 125mm

Scissors, dissecting, 125mm

Surgical handle, No. 3

Scalpel blade, No. 22, Pk of 10

Probe and hook, 130mm

1110-00



## STUDENT MICROSCOPE, JUNIOR

For junior high students and young hobbyists.

Comprised of a horseshoe type base, vertical monocular body inclinable through  $45^\circ$ , a metal stage  $100 \times 100\text{mm}$  with fixed clips, rack and pinion focusing and the microscope tube having standard threads to objective. Other important features are:

Eye-piece	10X W.F. with rotating pointer
Objectives	Achromatic 10X
Magnification	100X
Focusing	Rack and pinion. Provided with a stopper
Diaphragm	Iris for controlling light
Packing	Cardboard case

1301-00

## STUDENT MICROSCOPE, SENIOR

For junior to high school level students and hobbyists.

Comprised of a horseshoe type base, vertical monocular body inclinable through  $90^\circ$  and a metal stage  $110 \times 110\text{mm}$ . Other important features are:

Eye-piece	10X W. F. with rotating pointer
Objectives	Achromatic 4X, 10X and 40X R (spring loaded)
Magnification	100X to 400X
Nose-piece	Triple
Focusing	Adjustment knob with slip clutch mechanism to prevent drifting of the focus
Diaphragm	Iris for controlling light
Stage clip	Locked in place, spring loaded
Illuminator	Substage plano-concave mirror or light source (optional)
Packing	Styrofoam box with dust cover

1305-00

## STUDENT MICROSCOPE, ADVANCED

For junior to high school level students as well as for the hobbyists.

Comprised of a horseshoe type base, vertical monocular body inclinable through  $90^\circ$  and a metal stage  $110 \times 110\text{mm}$ . Other important features are:

Eye-piece	10X W. F. with rotating pointer
Objectives	Achromatic 4X, 10X and 40X R (spring loaded)
Magnification	100X to 400X
Nose-piece	Triple
Focusing	Coarse and fine adjustment knob with slip clutch mechanism to prevent drifting of the focus
Condenser	0.65 N.A., built into stage
Diaphragm	Iris for controlling light
Stage clip	Locked in place, spring loaded
Illuminator	Substage plano-concave mirror or light source (optional)
Packing	Styrofoam box with dust cover

1310-00





# BIOLOGY & EARTH SCIENCE

## ILLUMINATOR FOR SENIOR MICROSCOPES

As a replacement for the reflector for the above microscopes.

1315-00



## EYEPIECE, HUYGENIAN

For elementary microscopes.

Magnification	4X	1321-04
Magnification	5X	1321-05
Magnification	10X	1321-10
Magnification	15X	1321-15



## EYEPIECE, WIDEFIELD

For most standard microscopes.

Magnification	10X	1324-01
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## EYEPIECE, WIDEFIELD "DIN"

For DIN microscopes only.

Magnification	10X	1326-01
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## OBJECTIVES, ACHROMATIC

For most standard microscopes.

Magnification	4X	1341-05
Magnification	10X	1341-10
Magnification	40XR	1341-15
Magnification	45XR	1341-20
Magnification	60XR	1341-25
Magnification	100X	1341-26
		(Oil immersion)



## OBJECTIVES, ACHROMATIC "DIN"

Magnification	4X	1345-05
Magnification	10X	1345-10
Magnification	40XDIN	1345-15
Magnification	45XDIN R	1345-20
Magnification	60XDIN R	1345-25



## SHINCO MICROSCOPE

The ShincoScope needs only available outdoor light or minimal room light. This eliminates the need for lamps, cords and mirrors. There are no knobs or gears, so there is no need to fuss with adjustments.

The total magnification is (30X) along with reflective light capabilities allows you to view the exterior of 3-D specimens, printed matter and other ordinary objects. It also has a prism illuminator that sends transmitted light up through the stage allowing you to view the internal structure of thinly sectioned specimens.

Locked on Eyepiece  
Locked on Stage Clips  
Corrosion Resistant Finish  
Set of Five Common Slides  
Vinyl Cover

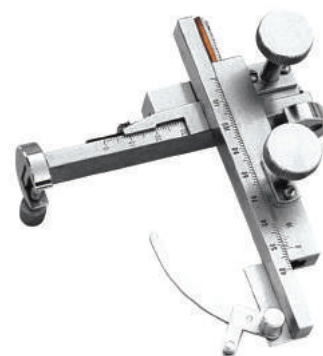
9000-00



## MECHANICAL STAGE

It can be clamped on any standard microscope stage. The X scale measures 0-70mm and Y scale from 80-120mm, with a least count of 0.1mm

1315-11



## STAMP LOUPE

Essentially to view stamps, texts, maps etc. But can also be used to view specimens. Has a 30mm field and 10X magnification.

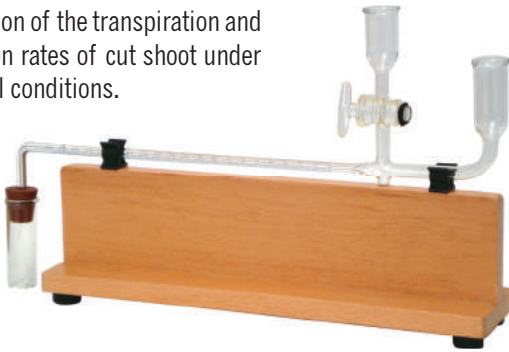
1010-14



## GANONG POTOMETER

For demonstration of the transpiration and water absorption rates of cut shoot under various external conditions.

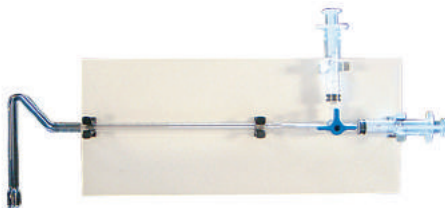
1212-01



## PHOTOSYNTHESIS APPARATUS

Designed for the measurement and analysis of gas evolved by water plants under different light conditions. The glass apparatus is mounted on a white plastic sheet 190 x 150mm.

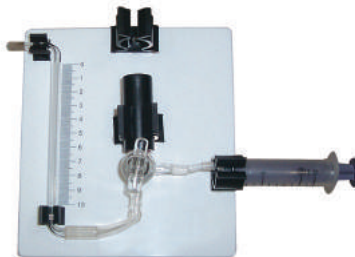
1212-04



## POTOMETER

Used for investigating the transpiration. The plant shoot is fitted to the apparatus and loss of water is indicated by the bubble along the capillary tube. Mounted on a white plastic sheet 190 x 180mm

1212-06



## CLINOSTAT

To study geotropism and phototropism on seedlings, cut shoots etc. Has an electric clock movement revolving every 12 minutes. 220v/50Hz.

1212-15



## CULTURE BOTTLE

Capacity	7 mL	15 mL	30 mL
Cat. No.	1214-07	1214-15	1214-30



## THERMOMETER ROOM, METAL BACK CELSIUS/FAHRENHEIT

For classroom or outdoor use. Spirit-filled glass thermometer mounted on a rust-proof aluminium plate with dual scale -20° to 230°F x 1°F and -30 to 110 C x 1°C division. Approximately (l x w), 165 x 25mm. Pack of five.

1202-01



## THERMOMETER WALL

Overall size 250mm With dual scale -10 to 50°C & -10 to 120°F Mounted on a plastic back. Red alcohol filled for easy readability.

1202-03



## THERMOMETER MAX MIN

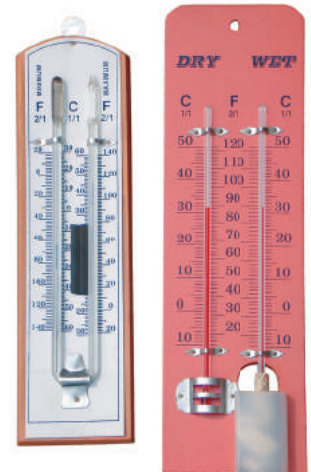
With double scale -20 to 140°F x 2°F & -30 to 60°C x 1°C. Alcohol Filled. Mounted on a wooden base.

1202-05

## THERMOMETER WET & DRY

With dual scale calibration. 15 to 120 x 2°F & -10 to 50 x 1°C. Alcohol Filled. With humidity and temperature conversion chart.

1202-07



## THERMOMETER SOIL TEST

Alcohol thermometer of range 10 to 60/100°C and mounted in a metal tube. Has a red sphere on top for identification

1202-27



## TULGREEN FUNNEL

For collecting organisms from soil. A 230V AC lamp heats the soil sample, causing the organisms to move downwards through the mesh in a collecting container. Supplied with three different mesh sieves. Supplied w/o the stand.

1202-91



## SLING PSYCHOMETRY THERMOMETER

Portable instrument for measurement of relative humidity-Wet & Dry Mercury filled (Replaceable) yellow back lens type glass thermometers.

Mounted in Natural wooden frame, and handle

1202-37



## WIND VANE

A simple and robust weather vane mounted on a base

2088-00



## ANEMOMETER

Gives direct reading of wind speed without the need to count the revolutions. Indicated m/s and Beaufort scales. Can be hand held or mounted

2088-05



## ANIMAL CAGE

Consist of a polypropylene tank and a stainless steel cover. The cover has a provision to accommodate the feeding bottle



Dimension	430 x 270 x 150mm	290 x 220 x 140mm
Cat. No.	1219-03	1219-04

## FEEDING BOTTLE

To use with the above animal cage.

Capacity 250mL

1219-00



## ELECTROPHORESIS GEL TANK

Single piece moulded chamber. Pure Platinum electrode for better connectivity. Also provided are 2 casting trays with end dams and 2 dual sided well forming combs (6/10). Overall dimension of the chamber 18.5 x 9 x 7.5 cm.

1220-00

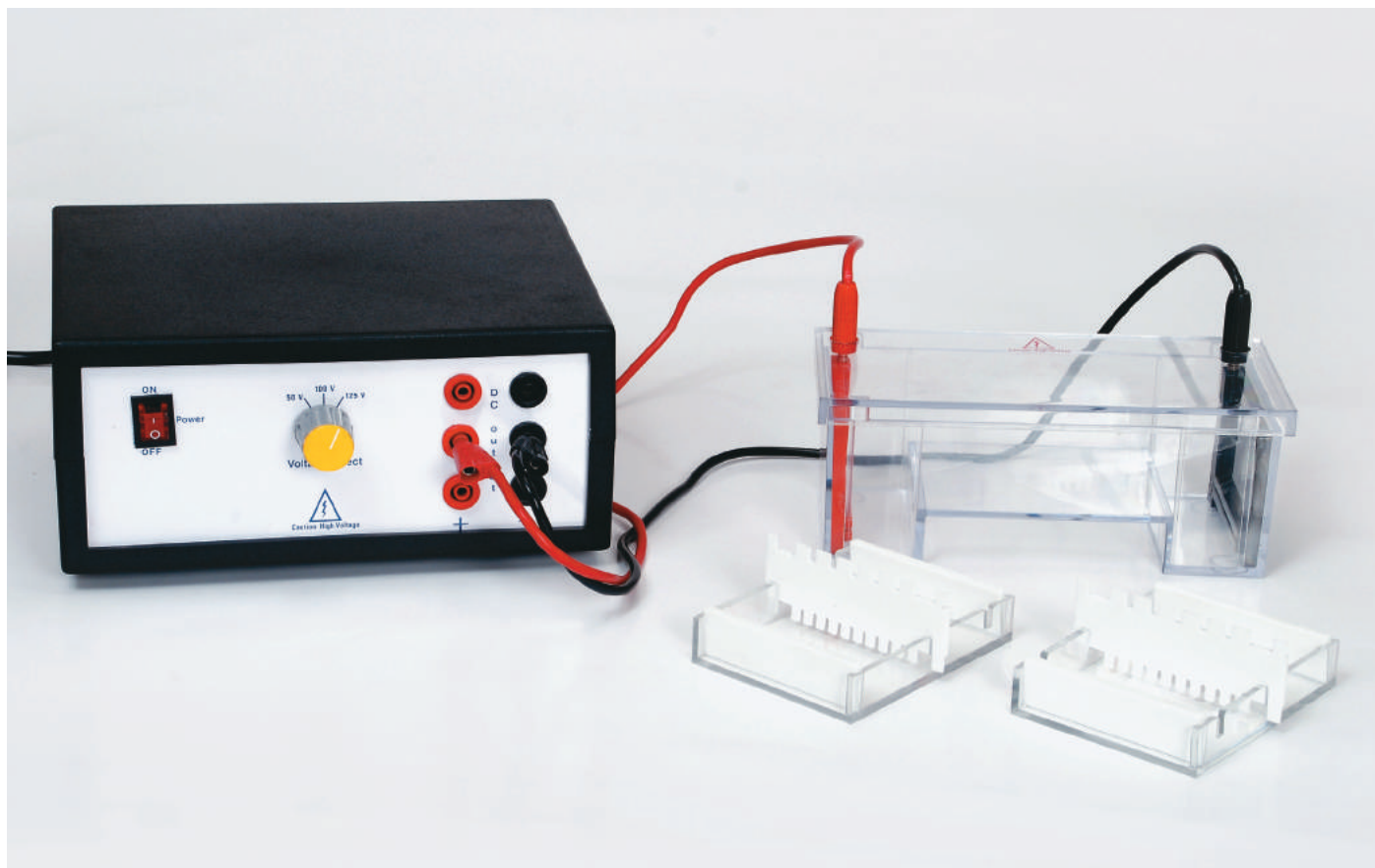
## ELECTROPHORESIS POWER SUPPLY

1220-50

### Technical Specification

CE marked

Type Output/Mode	Constant Voltage
Power Input	120 VAC, 60Hz / 220V AC, 50 Hz
Maximum Output Voltage	125V DC
Maximum Output Current	300 MA
Selected Voltage Steps	50V, 100V and 125V
Number of Jacks	3 Sets of output connectors
Power Selection/Indicator	On/Off Switch with LED Indicator
Fuse	Slow-Burn
Power Connection	Grounded plug
Safety Features	Short circuit protection, ground leak detection, overheat and over current protection



## ROCKS & MINERAL SET

Set of 50 rock specimen in a show-case

1349-01

Set of 50 rock specimen in a wooden case

1349-02

Set of 50 minerals in a show-case

1349-03

Set of 50 minerals in a wooden case

1349-04



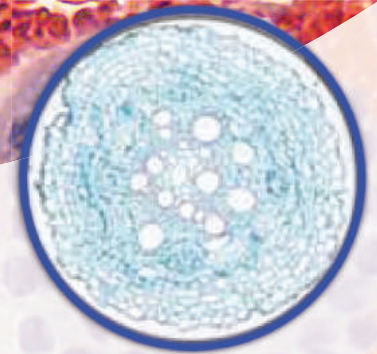
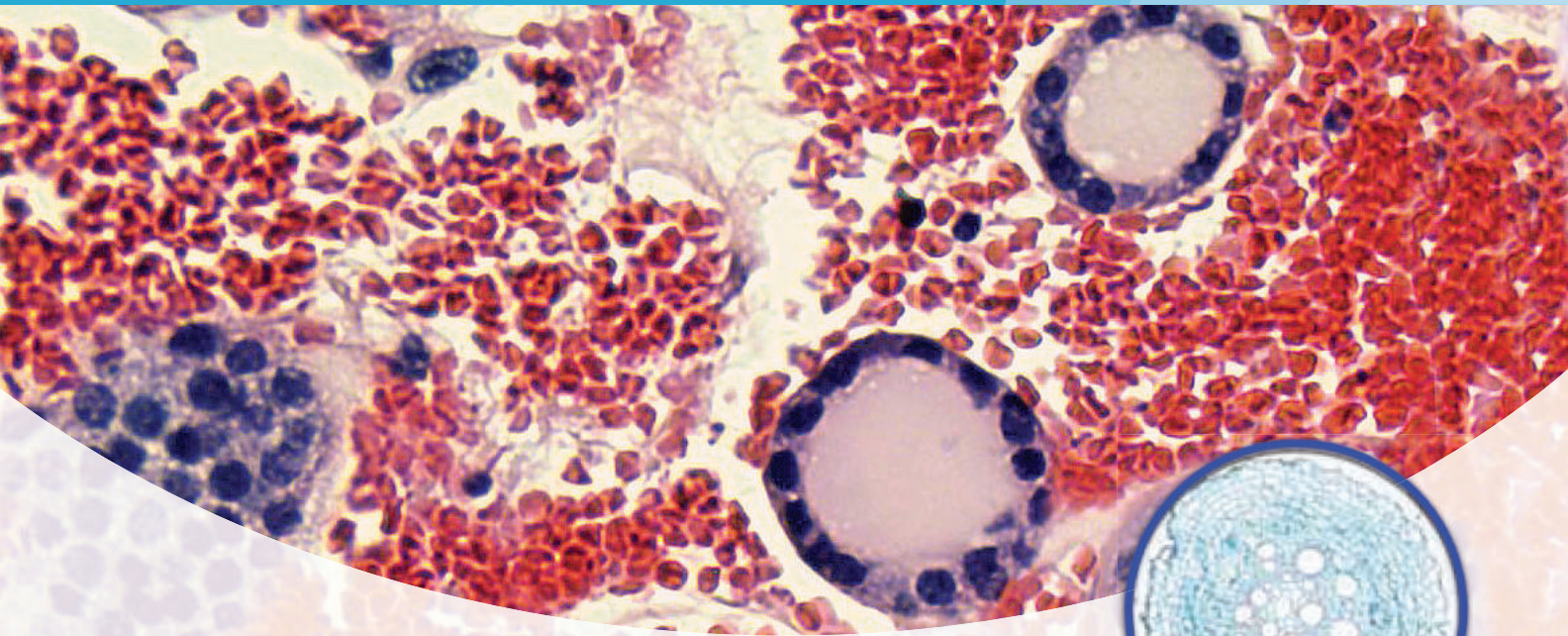
## FOOD CALORIMETER

For determining the energy values of foods and fuels. Has a borosilicate glass calorimeter vessel, combustion chamber, open at the bottom and an integral water jacket open at the top. A heat exchanger of copper tubing is connected at the top of the combustion chamber, and passes through a plastic lid, which is fitted with a stout wire stirrer and a hole for a thermometer. Calorimeter vessel on a heat resisting platform provided with a support ring and boss head, oxygen inlet tube and igniter coil mounting which can be raised, lowered or swing aside by external controls.

1350-01



# BIOLOGY & EARTH SCIENCE



## OUR MOST POPULAR PREPARED SLIDE SETS

For more prepared slide sets, please refer to our PREPARED SLIDES SET CATALOG.

Slide Sets are packed in a strong plastic box. All slides are standard size and clearly labeled

### SLIDE SET A

25 Slides

HUMAN BONE

DICOT LEAF VS

MUCOR SPORANGIA W.M.

CYCAS RACHIS CS

EARTHWORM CS

HUMAN APPENDIX CS

CYCAS CORALLOID ROOT TS

HUMAN VAGINA VS

PINUS OVULE VS

FROG LIVER TS

MONOCOT STEM CS

MONOCOT LEAF VS

HYDRA W.M.

FERN ROOT TS

HUMAN PANCREAS VS

YEAST CELL SMEAR

MOSS ANTHRIDIA W.M.

SPIROGYRA VEG. W.M.

FISH SCALE W.M.

FROG TESTIS TS

MOSS PLANT WITH

CAPSULE

FERN SPORANGIA W.M.

DICOT STEM CS

OCDOGONIUM W.M.

Cat. #1350-00

### SLIDE SET B

25 Slides

HUMAN BLOOD SMEAR

HUMAN SKIN VS

MONOCOT ROOT C S

MONOCOT STEM CS

HUMAN BONE CS

MAMMAL BRAIN CS

MAMMAL KIDNEY TS

MAMMAL ESOPHAGUS TS

PLANT CELLS W.M.

HUMAN OVARY TS

EPITHELIUM CQUAMOUS

HUMAN LIVER TS

MAMMAL LUNG TS

DICOT STEM CS

HUMAN CARTILAGE TS

MAMMAL PITUITARY GLAND CS

MAMMAL THYROID GLAND CS

MAMMAL ADRENAL GLAND CS

MUSCLES STRIATED

DICOT ROOT CS

MUSCLES CARDIAC

NERVE CELLS SMEAR

EPITHELIUM COLUMNAR

ADIPOSE TISSUE CS

HUMAN BONE MARROW SMEAR

Cat. #1450-00

### SLIDE SET C

24 Slides

HEAD LOUSE EGGS W.M.

FRUIT FLY W.M.

MOSQUITO LARVA

INSECT EGG

FERN PROTHALLUS

ANTHER TS

SUNFLOWER POLLEN

LILY POLLEN

WOOL FIBRE

COTTON FIBRE

SILK FIBRE

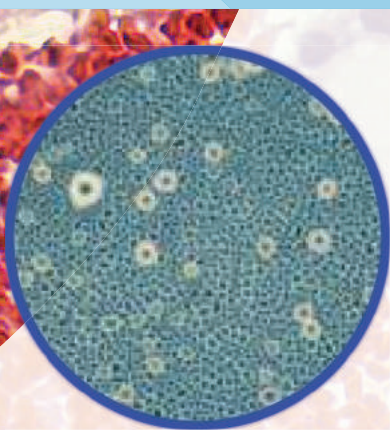
HEMP FIBRE

TERMITE WING W.M.

BEE LEG W.M.



# BIOLOGY & EARTH SCIENCE



INSECT LEG W.M.  
 BUTTERFLY WING W.M.  
 FEATHER W.M.  
 HUMAN HAIR  
 RABBIT HAIR  
 FISH SCALE W.M.  
 MONOCOT ROOT TS  
 MONOCOT STEM TS  
 LEAF VS  
 PINE STEM TS  
 Cat. #1300-00

## SLIDE SET D

25 Slides  
 MITOSIS IN PLANT  
 POLLEN GRAINS W.M.  
 AMOEBAS W.M.  
 YEAST CELLS W.M.  
 GREEN ALGAE SPIROGYRA  
 LETTER E  
 TAPE WORM TS  
 SILK FABRIC W.M.  
 LILY LEAF VS  
 SKIN CELLS VS  
 MAMMAL LUNG TS  
 MEIOSIS IN ANIMALS  
 AVES FEATHER W.M.  
 LILY STAMEN TS  
 MAMMAL HAIR W.M.

MOSQUITO MOUTH PARTS W.M.  
 HOUSEFLY MOUTH PARTS W.M.  
 FROG BLOOD SMEAR  
 HUMAN BLOOD SMEAR  
 ONION CELLS W.M.  
 HIBISCUS STEM TS  
 WOOL FABRIC W.M.  
 FISH SCALE W.M.  
 SKELETAL MUSCLES W.M.  
 HERBACEOUS STEM YOUNG TM  
 Cat. #1400-00

## SLIDE SET E

10 Slides  
 CHEEK CELL  
 ONION CELL  
 AMOEBAS  
 PARAMECIUM  
 VOLVOX  
 DICOT STEM  
 HYDRA  
 YEAST CELL  
 STRAITED MUSCLE TISSUE  
 WHITE BLOOD CELLS  
 Cat. #1460-00

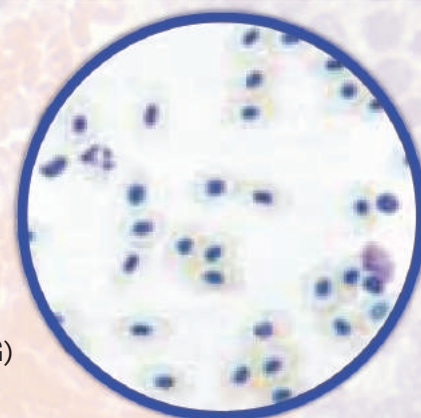
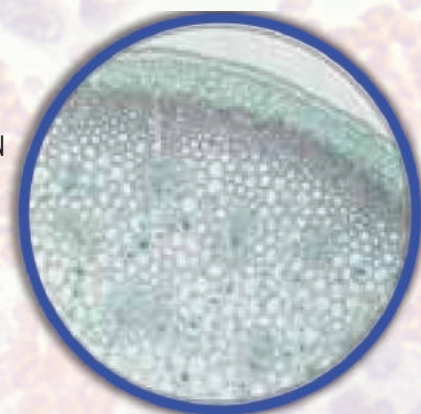
## SLIDE SET F

17 Slides  
 AMOEBAS PROTEUS  
 DIATOMS  
 EUGLENA  
 ASCARIS MITOSIS  
 GRANTIA SPICULES  
 HYDRA BUDDING  
 LEAF C.S. W/VEINS  
 ONION TIP ROOT  
 PARAMECIUM

PLANARIAN  
 RANUNCULUS ROOT  
 RANUNCULUS STEM  
 SPIROGYRA W/CONJUGATION  
 VOLVOX  
 ZEA MAYS ROOT  
 ZEA MAYS STEM  
 CHICKEN EMBRYO  
 Cat. #1550-00

## SLIDE SET G

24 Slides  
 ASPERGILLUS  
 FEATHER (3 TYPES)  
 BACTERIA SMEAR  
 CHEEK CELL SMEAR  
 HOUSEFLY (HEAD/LEG/WING)  
 HAIR (3 TYPES)  
 LETTER E  
 OSCILLAORIA WM  
 MIXED PROTOZOA  
 LILAC LEAF  
 BREAD MOLD WM  
 PLANKTON FORM WM  
 PARAMECIUM WM  
 SPIROGYRA VEG. WM  
 EUGLENA  
 PLANT STEM CS  
 FLOWER BUD CS  
 MOLD (3 TYPES)  
 ONION ROOT MITOSIS  
 FISH BLASTULA MITOSIS  
 RANUNCULUS STEM CS  
 GRANTIA SPICULES WM  
 VOLVOX  
 DIATOMS  
 Cat. #1600-00



## SLIDE SET H

11 Slides  
 Chick Development  
 WM 18 Hrs  
 WM 24 Hrs  
 WM 33 Hrs  
 WM 48 Hrs  
 WM 72 Hrs  
 WM 96 Hrs  
 CS 24 Hrs  
 CS 33 Hrs  
 CS 48 Hrs  
 CS 72 Hrs  
 CS 96 Hrs  
 Cat. #1700-00

## PRREPARED SLIDES

Prepared slides come in sets of 50. All slides are clearly labeled. We offer a wide variety of slides but can not keep large stock of all slides. We make every effort to keep the slides without an asterisk in front of the Cat number in stock. Slides with a double asterisk (\*\*) may have a 6-8 week waiting period.

## PROTOZOA

### Cat. # Description:

- \*\* 91-5103 AmoebaBinaryFission
- \*\* 91-5102 AmoebaEncystmentWM
- \*\* 91-5101 AmoebaGiant(ChaosChaos)
- \*\* 91-5100 AmoebaProteus(Imported)
- \*\* 91-5104 BalantidiumColi WM
- \*\* 91-5105 Ceratium (imported)
- 91-1064 ChlamydomonasWM Slide
- \*\* 91-5107 EntamoebaColiWM
- \*\* 91-5106 EntamoebaHistolyticaWM
- 91-1016 EuglenaWM
- \*\* 91-5109 FormaminiferaOozeWM
- 91-1097 GrantiaCSSlide
- \*\* 91-5132 GrantialS.
- \*\* 91-5133 GrantialL.S.
- \*\* 91-5110 Leishmania Doovani
- \*\* 91-5111 Leishmania Tropica
- \*\* 91-5135 Leucosolenia WM
- \*\* 91-5114 M.Parasite-Oocyst inMosquito
- \*\* 91-5113 MalariaParasite(Signetring)
- \*\* 91-5112 Malaria Parasitein(H.Blood)
- \*\* 91-5116 Monocystis(Mixed Stages)  
Sporozorte
- \*\* 91-5115 Monocystis(Trophozoite)
- \*\* 91-5117 NoctilucaWM
- \*\* 91-5118 NyctotherusWM
- \*\* 91-5119 OpalineWM
- \*\* 91-5127 PadiolariaOoze(Imported)
- \*\* 91-5123 ParamoeciumConjugation
- \*\* 91-5122 Paramoeciumin Fission
- 91-1013 ParamoeciumWM
- \*\* 91-5125 Plasmodium Malarial
- \*\* 91-5124 Plasmodium Vivax
- \*\* 91-5126 Plasmodium.Falcrparum
- \*\* 91-5120 PolystomellaWM
- 91-1014 Prepared slides, Amoeba
- 91-1008 Prepared slides, MixedProtozoa
- 91-1031 Prepared slides, Plasmodium  
SPSmear
- \*\* 91-5138 SpongeFibres
- \*\* 91-5134 Sponge Gemmule
- \*\* 91-5137 SpongillaTS
- \*\* 91-5136 SpongillaWM
- \*\* 91-5140 SyconLS
- \*\* 91-5139 SyconTS
- \*\* 91-5129 Trichomonas

- \*\* 91-5128 Trypanosomainblood
- 91-1051 Volvox WM
- \* 91-1052 VorticellaWM

## COLEENTERATA

### Cat. # Description:

- 91-1022 HydraWM withBudWM/ GonadsWM
- \*\* 91-5200 AlcyoniumSpiculesWM
- \*\* 91-5201 AureliaTerritaciocyst WM
- \*\* 91-5202 Baugainvillawm
- \*\* 91-5203 CompanulariaWM
- \*\* 91-5204 DiphyesWM
- \*\* 91-5205 Ephyra LarvaWM
- \*\* 91-5207 HydraTSBody
- \*\* 91-5208 HydraLSBody
- \*\* 91-5209 Hydra TSTestis
- \*\* 91-5210 Hydra Ovary TS
- \*\* 91-5211 ObeliaColony W.M.C.
- \*\* 91-5213 Pennaria WM
- \*\* 91-5214 PlumulariaWM
- \*\* 91-5215 SeaAnemoneT.S
- \*\* 91-5216 SeaAnemoneLS.
- \*\* 91-5217 Sertularia WM
- \*\* 91-5218 Telesto WM
- \*\* 91-5219 TubularraWM
- \*\* 91-5252 ObelraMedusaseWM

## PLATYHELMINTHES

### Cat. # Description:

- \*\* 91-5300 EchinoCoccusW M.
- \*\* 91-5305 LiverFluke CercariaWM
- \*\* 91-5303 LiverFlukeGonadRegion T.S.
- \*\* 91-5306 LiverFlukeMatacercariaWM
- \*\* 91-5309 LiverFlukeMiracidiumWM
- \*\* 91-5307 LiverFluke RediaWM
- \*\* 91-5308 LiverFlukeSporocystWM
- \*\* 91-5304 LiverFluke TS. PstRegion
- 91-1098 LiverFlukeWM
- \*\* 91-5311 Planaria T.S
- 91-1021 Planaria WM
- \*\* 91-5312 SchistosomaWM
- \*\* 91-5314 Tape Worm Bladderworm WM
- \*\* 91-5313 Tape wormscolexWM
- 91-1099 TaeniaPisiformisWM Slide

## NEMATHELMINTHES

### Cat. # Description:

- \*\* 91-5404 AncyiostoMa
- 91-1100 AscarisCSSlide
- \*\* 91-5403 Ascaris eggsWM
- \*\* 91-5401 AscarisfemaleTS
- \*\* 91-5400 Ascaris maleT.S.
- \*\* 91-5402 AscarisPharynxT.S.
- \*\* 91-5407 DracunculusWM
- \*\* 91-5408 Guineaworm WM
- \*\* 91-5409 OxyurisWM

- \*\* 91-5406 Pinworm WM
- 91-1030 Trichinellaspiraliscystinmusclas
- \*\* 91-5411 WaucheraBrancofti(Filaria)  
Smearinblood

## ANNELIDA

### Cat. # Description:

- \*\* 91-5500 Earth worm ant.regLSlbuccalregTS
- \*\* 91-5502 Earth worm cliteliumTS/ seminal  
vesicle
- \*\* 91-5505 Earth worm ovary WM/  
septalnephridiaWM
- \*\* 91-5506 Earthworm pharyngeal nephridia
- \*\* 91-5503 Earth worm prostategland/heartreg.
- \*\* 91-5504 Earth worm typhlosolarreg./  
Interestinereg.
- 91-1060 Earthworm CS
- \*\* 91-5507 GlossiphoniaWM
- \*\* 91-5508 Hetronereis parapodia
- \*\* 91-5510 LeechJaw WM/ nephridia WM
- \*\* 91-5511 NereisparapodiaWM/ NereisTS
- \*\* 91-5514 SagittaWM
- \*\* 91-5512 TrochophorelarvaWM
- \*\* 91-5513 TubifixWM

## ARTHROPODA

### Cat. # Description:

- \*\* 91-5601 AlimalarvaWM
- \*\* 91-5600 Argulus WM
- \*\* 91-5604 CaprellaWM
- \*\* 91-5602 Cyclops WM
- \*\* 91-5603 Cypris WM
- 91-1020 DaphniaWM
- \*\* 91-1107 Drosophila wildtype WM Slide
- \*\* 91-5606 GammarusWM
- \*\* 91-5607 LuciferWM
- \*\* 91-5608 MegalopaWM
- \*\* 91-5621 Metazoea larva
- 91-1102 MiteWM
- \*\* 91-5609 Mysis WM
- \*\* 91-5612 NaupliuslarvaWM
- \*\* 91-5611 Peripatus TS
- \*\* 91-5614 PrawnStatocystWM
- \*\* 91-5613 PrawnTS/Gillwm/Gill VS
- \*\* 91-1023 Rotifer
- \*\* 91-5618 Sacculina TS
- \*\* 91-5617 ScorpionbooklungWM
- \*\* 91-1101 Spider Head& MouthParts
- \*\* 91-5616 SpiderWM
- \*\* 91-5619 Tick WM
- \*\* 91-5620 ZoealarvaWM

## ARTHROPODA—(INSECT)

### Cat. # Description:

- \*\* 91-5916 AnopheleseggsWM/Larva/Pupawm
- \*\* 91-5913 AnophelesfemaleWM



# BIOLOGY & EARTH SCIENCE

- \*\* 91-5912 AnophelesmaleWM
- \*\* 91-5915 AnophelesmouthpartsfemaleWM
- \*\* 91-5914 Anophelesmouthpartsmade WM
- \*\* 91-5726 Arthropoda-(InsectWings) WM All
- 91-1059 BegbugWM
- 91-1103 CockroachHead & Mouth Parts WM
- \*\* 91-5711 Cockroach Leg WM
- \*\* 91-5917 Cockroach mouth parts
- \*\* 91-5719 Cockroach Ovary TS
- \*\* 91-5918 Cockroach Salivary glands
- \*\* 91-5712 Cockroach Spiracle Abdominal
- \*\* 91-5713 Cockroach Wing WM
- \*\* 91-5715 Culexlarva WM/Egg/Pupa WM
- \*\* 91-5714 Culex mouthpartsmale WM/  
FemaleWM
- 91-1108 CulexPupaWM
- \*\* 91-5720 HeadlouseWM
- \*\* 91-5721 Honeybee mouthparts
- \*\* 91-5722 Honeybeestingparts
- \*\* 91-5717 Housefly eggsWM / Egg/larva/  
PupaWM
- 91-1001 Housefly Head/Leg/Wing
- \*\* 91-5718 Housefly male WM/Female WM
- \*\* 91-6429 Housefly mouth parts WM
- \*\* 91-5728 InsectAntenna WM (All)
- \*\* 91-5729 Insect Legs WM (All)
- \*\* 91-5727 Insect Mouth Parts WM (All)
- 91-1106 Locust Abdomen WM Slide
- 91-1104 Locust Mouth Parts WM
- 91-1105 LocustThorax WM Slide
- \*\* 91-5919 Cockroach Mahgantues
- \*\* 91-5723 Ratt flea WM
- \*\* 91-5724 Termite WorkerWM/Soldier WM
- \*\* 91-5725 Wasp sting WM

## MINORPHYLA

### Cat. # Description:

- 91-1023 RotiferWM
- \*\* 91-5911 BogulaWM

## MOLLUSCA

### Cat. # Description:

- \*\* 91-5900 Glochedium Larva
- \*\* 91-5901 Veligers Larva
- \*\* 91-5902 OspharidiumofPila
- \*\* 91-5903 OctopusarmTS
- \*\* 91-5904 RedulaofPitaWM
- \*\* 91-5905 SepiaTS eyereg
- \*\* 91-5906 UnioShellgroundthin
- \*\* 91-5907 UnioGITTS
- \*\* 91-5908 Unionbody & gillTS

## ECHINODERMATA

### Cat. # Description:

- \*\* 91-6000 BipinnarialarvaWM
- \*\* 91-6003 Echinopluteus WM
- 91-1058 HelianthusStemCS
- \*\* 91-6004 OphiopluteuslarvaWM

- \*\* 91-6002 Pluteuslarva WM
- 91-1061 Sea Urchin Ova WM
- 91-6001 Seaurchinpedicellaria WM
- 91-6006 Starfisharm TS
- 91-6005 Starfishtribefeeet WM

## LOWER CHORDATA

### Cat. # Description:

- \*\* 91-6101 AmphioxusEntire WM
- \*\* 91-6104 AmphioxusGonadregion TS
- \*\* 91-6103 AmphioxusOral Hood TS Intestine/  
artium
- \*\* 91-6102 Amphioxus TS Pharynx
- \*\* 91-6100 Amphioxus TS Tail/OralHoodRS
- \*\* 91-6107 Balanoglossus TS branchial/Collar  
TS
- \*\* 91-6106 BalanoglossusTS reg LS/  
Proboscisreg TS
- \*\* 91-6105 Balanoglossus TSTrunk/Gonads TS
- \*\* 91-6109 Doliolum WM/Oikopleua WM
- \*\* 91-6108 Herdmania Spicules
- \*\* 91-6110 Pysosoma WM
- \*\* 91-6111 SalpaSexual WM/A seswal WM

## PISCES (FISHES)

### Cat. # Description:

- 91-1109 AphiaWM
- \*\* 91-6200 CtenoidscaleWM/Cycloid Scale
- \*\* 91-6203 DogfishskinTS
- \*\* 91-6213 FishheartLS
- \*\* 91-6216 FishIntestineTS
- \*\* 91-6220 FishKidney TS
- \*\* 91-6215 FishLiverTS
- \*\* 91-6217 Fishovary TS
- 91-1062 FishScalesWM
- \*\* 91-6205 FishskinTS
- \*\* 91-6218 Fishspinalcord TS
- \*\* 91-6214 FishstomachTS
- \*\* 91-6204 FishTSheadreg
- \*\* 91-6207 FishTSAirbladder
- \*\* 91-6208 FishTStailreg
- \*\* 91-6206 FishTStrunkreg
- \*\* 91-6201 PlacoidScale WM
- \*\* 91-6202 RhomboidscaleWM
- \*\* 91-6209 Sharkembryo TS snout
- \*\* 91-6211 Sharkembryo TS througheye
- \*\* 91-6210 Sharkembryo TS throughgill
- \*\* 91-6212 Sharkembryo TS trunk

## FROG HISTOLOGY/ MAMMAL HISTOLOGY

### Cat. # Description:

- \*\* 91-6400 Artery TS
- \*\* 91-6301 BoneTS Calcified
- \*\* 91-6302 Bone decalcified
- \*\* 91-6403 BraincerebrumES

- \*\* 91-6404 Brain olfactory Lobe
- \*\* 91-6405 Brain LS
- \*\* 91-6406 Braincerebellum
- \*\* 91-6407 Bloodsmear
- \*\* 91-6408 Cartilage TS
- \*\* 91-6409 Duodenum TS
- \*\* 91-6410 Eye VS
- \*\* 91-6411 GallbladderTS
- \*\* 91-6412 Heart LS
- \*\* 91-6413 Heart LS
- \*\* 91-6414 IntestineTS
- \*\* 91-6415 Liver TS
- \*\* 91-6416 Lung LS
- \*\* 91-6417 Lung TS
- \*\* 91-6418 Kidney TS
- \*\* 91-6419 Kidney LS
- \*\* 91-6420 OvaryTS young
- \*\* 91-6421 Ovarymature
- \*\* 91-6422 Nerve TS
- \*\* 91-6423 Oesophagus TS
- \*\* 91-6424 PancreasTS
- \*\* 91-6425 RectumTS
- \*\* 91-6426 Retina
- \*\* 91-6427 Sperm smear
- \*\* 91-6428 Stomach TS
- \*\* 91-6430 Spleen TS
- \*\* 91-6431 SkinVS
- \*\* 91-6432 TestisTS
- \*\* 91-6433 FatbodyTS
- \*\* 91-6434 TongueLS
- \*\* 91-6435 Spinal cordTS
- \*\* 91-6436 VeinTS
- 91-1038 RatSperm
- 91-1039 Mammalovary
- 91-1063 FrogSkinWM
- 91-1072 SquamousEpitheliumSM
- 91-1073 AdiposeTissueSec
- 91-1074 HyalineCartilageSEC
- 91-1075 CompactBoneCS
- 91-1076 StraitedMuscleSEC
- 91-1077 NerveCellSM
- 91-1078 SpinalCordCS
- 91-1079 Cerebellum SEC
- 91-1081 LiverCS
- 91-1082 BloodsmearGiemstain

### Cat. # Description:

- 91-1083 StomachCS
- 91-1084 SmallintestineLS
- 91-1085 LungSEC
- 91-1086 SpleenCS
- 91-1087 ColonCS
- 91-1088 ThyroidglandSEC
- 91-1089 PancreasSEC

## REPTILE HISTOLOGY

### Cat. # Description:

# BIOLOGY & EARTH SCIENCE

- \*\* 91-6910 LungTS/Trachea/Cerebrum TS
- \*\* 91-6911 CerebellumTS/Heart/SpinalCord TS
- \*\* 91-6912 LiverTS/PancreasTS/Kidney TSB
- \*\* 91-6913 TestisTS/Ovary TS/OesophagusTS
- \*\* 91-6914 Duodenum TS/IntestineTS/Stomach

## ANIMAL HISTOLOGY

### Cat. # Description:

- \*\* 91-6300 Adrenal glandTS
- \*\* 91-6301 BonecalcifiedTS
- \*\* 91-6302 Bonedecalcified
- \*\* 91-6303 Epitheliumsquamous
- \*\* 91-6304 Epitheliumcolumner
- \*\* 91-6305 Epitheliurnciliated
- \*\* 91-6306 Epithelium glandular
- \*\* 91-6307 Epitheliumsensory
- \*\* 91-6308 Epitheliumstratified
- \*\* 91-6309 Epitheliumpigmented
- \*\* 91-6310 Elasticcartilage
- \*\* 91-6311 Fibrouscartilage
- \*\* 91-6312 Hyatine cartilage
- \*\* 91-6313 Medullatednerve TS
- \*\* 91-6314 Non-medullatednerveTS
- \*\* 91-6315 Mitochondria
- \*\* 91-6316 Golgicomplex
- \*\* 91-6317 Musclestraited
- \*\* 91-6318 Musclesunstiatiated
- \*\* 91-6319 Musclescardiac
- \*\* 91-6320 MusclesstrattedLS.
- \*\* 91-6321 MusclesbomduesT.S.
- \*\* 91-6322 ChromatoptioresWM
- \*\* 91-6323 NerveFibres
- \*\* 91-6324 NerveCells
- \*\* 91-6325 AdrenalGland TS
- \*\* 91-6326 MammaryglandTS
- \*\* 91-6327 Pituitary glandTS
- \*\* 91-6328 Parathyroid gland
- \*\* 91-6329 Thyroidgland TS
- \*\* 91-6330 Salivary glandTS
- \*\* 91-6331 Tissueconnective
- \*\* 91-6332 Tissue areolar
- \*\* 91-6333 Tissueadipose

## HUMAN HISTOLOGY

### Cat. # Description:

- \*\* 91-6600 HumanoesophagusTS/SkinTS
- \*\* 91-6601 Hunian stomachTS/intestine TS
- \*\* 91-6602 HumanTestisTS/ovaryTS/uterusTS
- \*\* 91-6603 HumanVaginaTS/BloodSmear/Spinalcord
- \*\* 91-6604 HumanliverTS/KidneyTS/BrainTS
- \*\* 91-6605 HumanArtery/Bone/veinAppendixTS
- \*\* 91-6606 Human lungTS/Heartllrachca/Nerve
- \*\* 91-6607 HumanSpleenTS/Tongue/penisTS

- \*\* 91-6608 HumanThyroidGlandTS
- \*\* 91-6609 HumanThymusGlandTS
- 91-1003 Hair3types
- 91-1035 HumanBloodsmear
- 91-1036 HumanOvary
- 91-1037 HumanSpernSmear
- 91-1090 HumanSkinSEC

## AVES HISTOLOGY

### Cat. # Description:

- 91-1006 CheekCellSmear
- \*\* 91-6900 Artery TS/Bone TS/BloodSmearTS
- \*\* 91-6901 BirdPectonFrom eye
- \*\* 91-6902 BirdFeatherDown
- \*\* 91-6903 BirdFeatherFitoplume
- Cat. # Description:
- \*\* 91-6904 BirdFeatherContour
- \*\* 91-6905 Duodenum TS/EpiglottisT.S.
- \*\* 91-6906 EyeVS/HeartL.S./PenisIS
- \*\* 91-6907 SkinVS withFeatherBuds/Spleen TS
- \*\* 91-6908 SmallintestineTS/StomachTS/HeartTS
- \*\* 91-6909 LargeIntestineTS/Liver TS/LungTS
- \*\* 91-6710 Kidney TS/NerveTS/OesophagusTS
- \*\* 91-6711 BrainCerebrumTS/Cerebellum TS
- \*\* 91-6712 PancreasTS/OvaryTS/Rectum
- \*\* 91-6713 TestisTS/TracheaTS/Vein TS
- \*\* 91-6714 SpinalCordTS
- 91-1000 Feather3types

## FROG EMBRYOLOGY

### Cat. # Description:

- \*\* 91-6500 EggVSWM
- \*\* 91-6501 Egg2celledVS
- \*\* 91-6502 Egg-4celledVS
- \*\* 91-6503 Early cleavageTS/WM
- \*\* 91-6504 LatecleavageTS/WM
- \*\* 91-6505 BlastulaVS/WM
- \*\* 91-6507 Embryo4mm VS/WM
- \*\* 91-6508 Embryo7mm VS/WM
- \*\* 91-6509 Neural foldstageWM
- \*\* 91-6510 InternalGillstageWM
- \*\* 91-6511 YolkplugstageTS
- \*\* 91-6512 TadpoleWM
- \*\* 91-6513 Tadpolehuccalreg. IS.
- \*\* 91-6514 Tadpolegill reg. T.S.
- \*\* 91-6515 Tadpoletrunkreg. TB.
- \*\* 91-6516 Tadpoleheadreg. T.S.
- \*\* 91-6517 Tadpoleheartreg. T.S.
- \*\* 91-6518 Tadpoletailreg. T. S.
- \*\* 91-6519 Tadpoletailreg. T.S.
- \*\* 91-6520 Frogovarywithmature eggs T.S.
- \*\* 91-6521 FrogtestismaturespermsLS.

## ALGAE & FUNGI

### Cat. # Description:

- 91-1010 Bread Mould
- 91-1011 177Budding Yeast
- 91-1024 Aspergillus WM
- 91-1025 Mold3types
- 91-1026 Mushroom CS
- 91-1053 RhizopusStoloniferWM
- 91-1054 PenicilliumWM
- 91-1066 ChlorellaWM
- 91-1067 OedogoniumWM
- 91-1068 Ulothrix VegWM
- 91-1069 MixedDiatomsWM
- 91-1071 PrphyraWM
- 91-1090 Fucus CS

## BACTERIA

### Cat. # Description:

- 91-1007 14-Oscillatoria
- 91-1050 AnabaenaWM
- 91-1005 BacteriaSmear
- 91-1034 Haemophilus, Influenzaesmear
- 91-1032 PseudomonasAeroginosa smear
- 91-1033 Tuberculosissmear

## PLANT KINGDOM

### Cat. # Description:

- 91-1009 LilacLeaf
- 91-1015 63SpirogyraVegWM
- 91-1017 PlantRootCS
- 91-1018 PlantStemCS
- 91-1019 FlowerBud CS
- 91-1092 Monocot& DicotRoot
- 91-1093 Monocot& DicotStem
- 91-1094 Monocot& DicotLeaf
- 91-1095 Monocot& DicotFlower
- 91-1096 Deciduous& EvergreenLeaf

## SLIDE STAINING KIT

It helps the children to stain some basic slides and gives them a hands - on-experience. It consists of test tube, dropping pipet and three kinds of stains i.e. Gention Violet, Methylene Blue and Hemotoxalin 4330-00



## MODEL OF HUMAN BRAIN 1500-10

Can be separated in 8 parts. Mounted on a wooden base.



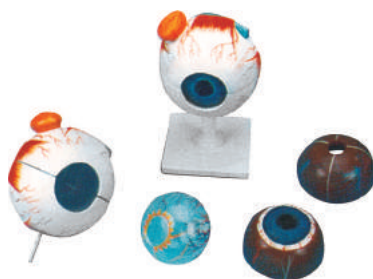
## MODEL OF HUMAN EAR 1500-15

This model shows pinna with auditory canal, tympanic membrane, Eustachian tube, middle ear ossicles, bony labyrinth and cochlea. Tympanic membrane, middle and inner ear. Removable part include the tympanic membrane (eardrum) with malleus and incus (hammer and anvil), and the two part labyrinth / cochlea with stapes (stirrup) and auditory nerve. Enlarged 3 times. Includes mounting /display base and key card.



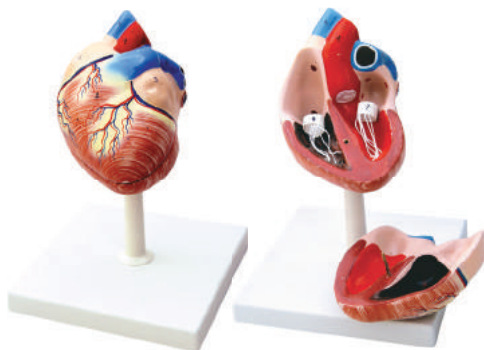
## MODEL OF HUMAN EYE 1500-20

Can be dismantled, showing all the basic artery, blood vessel and other important parts, Mounted on a stand 180 x 180 x 320mm. This model is easy to take apart and reassemble in all aspects of internal and external anatomy. Removable parts include the upper half of the sclera with cornea and muscle insertion. Two parts choroids with iris, lens and vitreous humor. Detail painting highlights the iris, major blood vessels, and the origin of the optic nerve. Mounted on base with key card.



## MODEL OF HUMAN HEART 1500-25

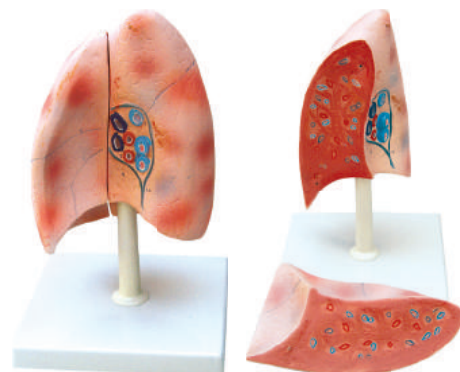
This anatomically correct model is 2 times the live size. It can be dismantled to show the inner and outer parts. It is anatomically correct, the heart is dissectible into



two parts so all internal and external structures and functions can be demonstrated. Mounted on stand with key card.

## MODEL OF HUMAN LUNGS 1500-30

This 3 dimensional model shows basic structure.



## MODEL OF HUMAN LUNGS 1500-35

Original human size 7 parts. Mounted on a stand. Size 37 x 42cm



## MODEL OF HUMAN TEETH WITH JAW 1500-40

Model shows structures of the upper and lower jaw. Partially dissectible and enlarged 8 times.



## MODEL OF SKIN 1500-46

Enlarged approx. 70 times. Showing hair, papilla, sebaceous glands, sweat-duct glands, sensory receptors, nerves and blood vessels.



## MODEL OF HUMAN DIGESTIVE SYSTEM

1500-45

Natural size model is showing the human digestive system from mouth to anus. The model is dissectible in 4 parts. Mounted on baseboard 33 x 81cm.



## MODEL OF HUMAN NEURON

1500-65

Schematic representation of the nerve cells and axon with medullary sheath and Schwann's sheath. On base.



## MODEL OF HUMAN KIDNEY

1500-50

This model show exterior structures include proximal portions of renal and adrenal blood vessels and ureter. Interior features shown include the cortex, medullae, calyces and renal pelvis. A pair of nephrons and collection ducts are detailed to show their relationship to other internal structure. Enlarged 2 times. Can be dismantled to show the inner and outer parts. Mounted on stand with key card.



## MODEL OF HUMAN MALE PELVIS

1500-75

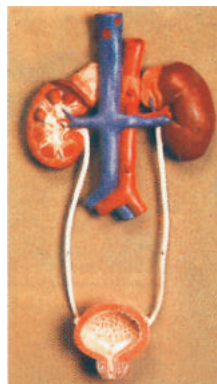
Mounted on a base. Overall size 31 x 41cm. Bladder, penis and seminal vesicle are longitudinally sectioned.



## MODEL OF URINARY SYSTEM

1500-55

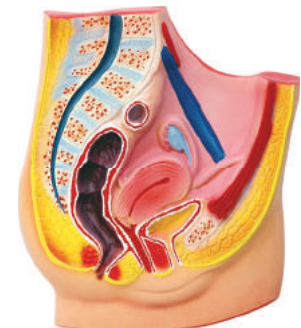
Life size. Shows kidney, renal artery, vein, ureter, bladder and urethra. Size 28 x 10 x 40cm.



## MODEL OF HUMAN FEMALE PELVIS

1500-80

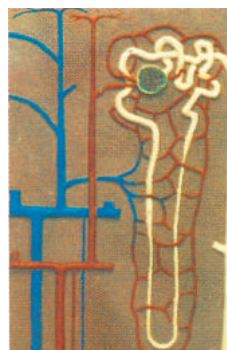
Longitudinal section of muscles of pelvis, pelvic floor, uterus, vagina, bladder, nerves and vessels shown. Mounted on a base. Overall size 31 x 41cm.



## MODEL OF HUMAN NEPHRON

1500-60

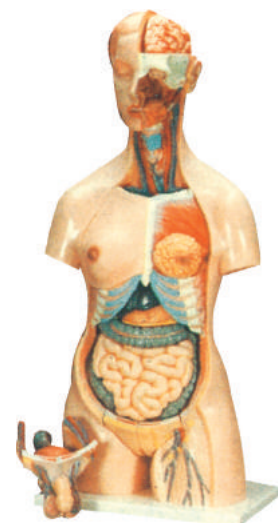
Greatly in a large model, showing glomerular afferent and efferent arterioles, renal capsule, proximal convoluted tubule, Henle's loop, distal convoluted tubule and collecting tubule.



## MODEL OF HUMAN TORSO MALE & FEMALE

1520-10

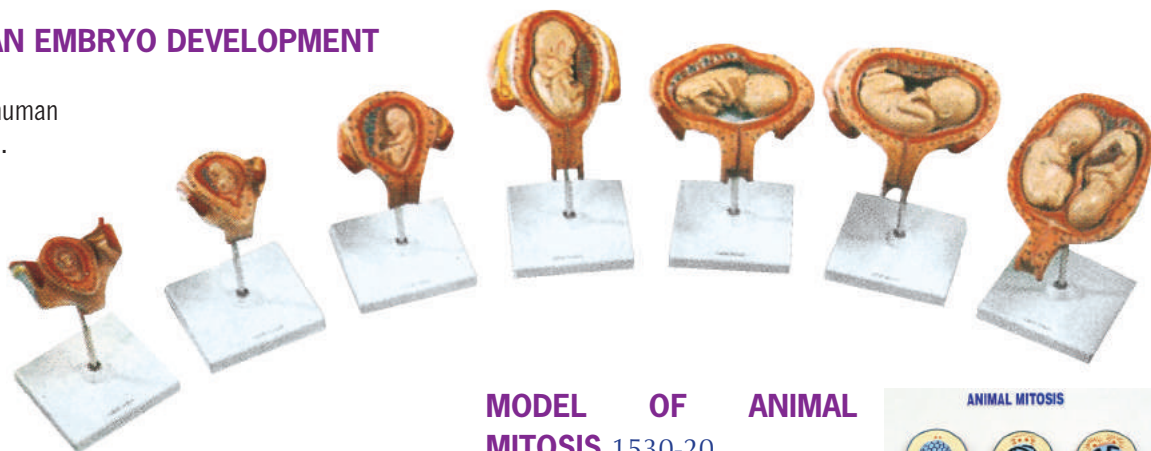
Life size model, dissectible in 24 parts, including head, eyes, chest, lungs, stomach, large intestine, small intestine and kidney. The female genital organs separate into right and left portions. The male genital organs are dissectible into 4 parts. Size 38 x 25 x 87cm on base.



## MODEL OF HUMAN EMBRYO DEVELOPMENT

1500-70

Complete formation of human fetus. Set of 7. On stand.



## MODEL OF HUMAN SKELETON

1520-20

This model is approximately 120cm high articulated with wires. Supplied with a sturdy metal stand.

## MODEL OF ANIMAL CELL

1530-10

This model of cell incorporates details through microscopic slides. Nucleus, mitochondria, endoplasmic, reticulum and ribosome are clearly mentioned. It is mounted on stand with key card.



## MODEL OF PLANT CELL

1530-15

Shows typical structure of a generalized plant cell. Colorful cross-sectional model.



## MODEL OF LEAF STRUCTURE

1530-25

Three Dimensional model showing leaf structure. Mounted on a stand.



## MODEL OF ANIMAL MITOSIS

1530-20

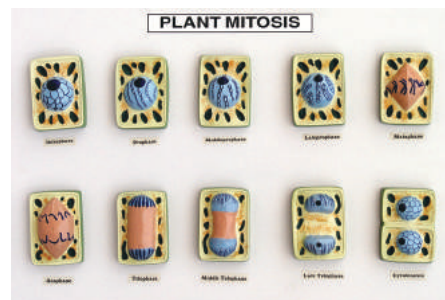
Showing mitosis stages in animal cell Made of hard plastic. This model will help clarify and provide a perfect visual comparison of these two key cell processes. This model identifies the parts of the cell phases of mitosis and the changes cells undergo through the stages of mitosis. Nucleus, centrioles, centrosome, chromatin, chromosomes, spindle, aster and other key structures are easily identified. Mounted on Board with key card.



## MODEL OF PLANT MITOSIS

1530-21

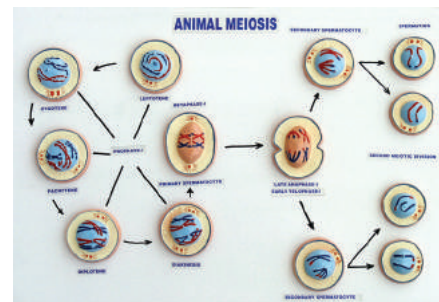
Showing mitosis stages in plant cell. Made of hard plastic. This model will help clarify and provide a perfect visual comparison of these two key cell processes. This model identifies the parts of the cell phases of mitosis and the changes cells undergo through the stages of mitosis. Nucleus, centrioles, centrosome, chromatin, chromosomes, spindle, aster and other key structures are easily identified. Mounted on Board with key card.



## MODEL OF MEIOSIS

1530-22

A set of models to depict the meiotic division. Made from hard plastic. Can easily identify chromosomes, cytoplasm, and chromatin.

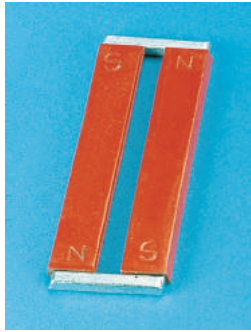


# ELECTRICITY & MAGNETISM

## MAGNETS, RECTANGULAR BAR, STEEL

Useful for student demonstrations, plotting magnetic fields etc.

Made from magnetic steel strips. Painted red and stamped with 'N' and 'S' to indicate north and south poles. Supplied in pairs with cardboard separator and plated soft iron keepers. Dimensions:



l x w x h	Cat. No.
75 x 12 x 5mm	3101-01
100 x 12 x 5mm	3101-02
150 x 19 x 7mm	3101-03

## MAGNETS, HORSESHOE, STEEL

Suitable for many experimental and demonstration needs in general science and physics laboratory.

Traditional style. Made from 5mm thick and approximate 12mm wide steel strips except for the largest size which is about 15mm wide. Painted red and stamped with 'N' and 'S' to indicate north and south poles. Supplied with soft iron plated keeper (armature).

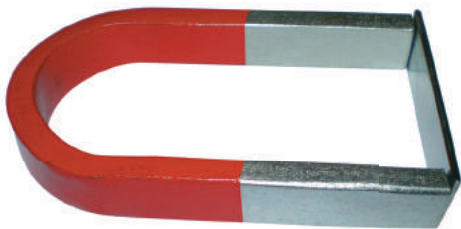


Overall length	Cat. No.
50mm	3102-01
75mm	3102-02
100mm	3102-03
150mm	3102-04

## U-MAGNET (LARGE)

Powerful U-magnet, made of steel. Overall dimension 140 x 80 x 18mm.

3102-51



## MAGNETS, BAR, PAIR, ALNICO

Strong magnets for laboratory demonstration work, magnetizing needles, etc. Ideal for extended classroom use.

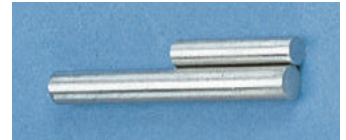
Painted red and north pole marked. Supplied in pairs between plated keepers and a plastic separator. Dimensions:



l x w x h	Cat. No.
50 x 13 x 6mm	3106-01
50 x 15 x 10mm	3106-02
75 x 11 x 6mm	3106-23
75 x 15 x 10mm	3106-03
100 x 10 x 7mm	3106-04
100 x 15 x 10mm	3106-05
150 x 19 x 7mm	3106-06

## MAGNETS, CYLINDRICAL, ALNICO

For having high magnetic field. Grounded on all sides. Dimensions:



l x d	Cat. No.
25 x 5mm	3107-01
50 x 5mm	3107-02
50 x 10mm	3107-03
125 x 10mm	3107-04

## MAGNETS, HORSE SHOE, ALNICO



Suitable for laboratory use. Approximate outside height about 28mm and outside width about 26mm painted red with keeper.

3108-01

## IRON FILING

For observing magnetic field.

Grease free filing in plastic bottles. pack of 500g



Type	Fine	Coarse
Cat No.	3124-01	3124-02

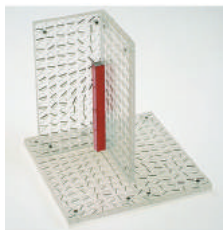
# ELECTRICITY & MAGNETISM

## MAGNETIC FIELD DEMONSTRATOR

To clearly see the magnetic field lines in 1,2 or 3 dimensions. Size 150x75mm.

Supplied without the magnet.

3108-51



## MAGNET, RING, CERAMIC

For collision studies in physics and other applications such as focussing magnet etc. Charged on the faces.



o.d x i.d x h	Cat. No.
32 x 18 x 6mm	3111-01
36 x 18 x 8mm	3111-02
45 x 22 x 9mm	3111-03
45 x 22 x 11mm	3111-04
53 x 24 x 9mm	3111-05
53x 24 x 11mm	3111-06

## MAGNET, CIRCULAR (DISC), CERAMIC

Used in conjunction with plastic beads and ring magnets for motion and collision studies in physics and for other applications. Can be magnetized along any side.



d x h	Cat. No.
18 x 4mm	3112-01
30 x 5mm	3112-02

## MAGNET BAR, CERAMIC

Approximate dimensions:



l x w x h	Cat No.
54 x 13 x 9mm	3113-01
40 x 25 x 10mm	3113-02

## MAGNETS SET, RING, CERAMIC (FLOATING MAGNETS, WOBBLY MAGNETS)

To show that like magnetic poles repel each other by placing three or more ring magnets on a non-magnetic stand. Comprises three colored ring magnets (o.d. x i.d. x h), 32 x 18 x 6mm magnetized parallel to the axis, equipped with an acrylic rod mounted on a plastic base. The magnets float in the air, one over the others and spring back up when pushed down.



3116-00

## MAGNETIC NEEDLE ON STAND (DEMONSTRATION COMPASS)

For studying magnetic phenomena such as operation of a compass, testing of magnetic poles, finding the direction of electric current etc. Consists of a magnetized steel needle about 150mm long with brass bearing pivoted on a non-magnetic metal stand. North pole is marked in red. The needle when not in use is reversed and kept in main rod for safety.



3118-01

## MAGNETIC NEEDLE, SPARE

For the above magnetic needle on stand.

3118-02

## MAGNETIC COMPASS

For tracing the magnetic fields of bar magnets. Consists of a magnetic needle encased in cylindrical aluminium case with glass top. Card dial.



Diameter	Cat. No.
16mm	3121-01
25mm	3121-02
37mm	3121-03
50mm	3121-04
75mm	3121-05
100mm	3121-06

## MAGNETIC COMPASS

For plotting and exploring magnetic field. In a plastic case with a four color graduated dial. Full circle divided into 360 with N, W, S, E, etc. directions indicated. Graduated every 5 and labelled in 15 increments. The red tip indicates north. Diameter 38mm.

3121 -21



## COMPASS, BOTH SIDE GLASS

Here's an easy way to demonstrate magnetic fields in class. Simply use these small, clear-cased compasses to map magnetic fields by placing them around different shaped magnets. Size 19mm

1249-60



# ELECTRICITY & MAGNETISM

## FRICTION ROD

For creating frictional electricity with materials like silk, wool, fur for charging electroscopes etc. Approximate dimensions of solid rods are (l x d) 250-300 x 10-13mm



Soda glass, solid	3128-01
Glass (borosilicate) tubular with one end drawn	3128-02
Plastic solid (bakelite)	3128-03
Ebonite (hard rubber)	3128-04
Polyethylene	3128-05
Sealing wax square, Shellac 200 x 10 x 10mm	3128-06

## FRICTION PAD (EXCITING PAD)



For producing electrostatic charges on friction rods, electrophorous plates etc.

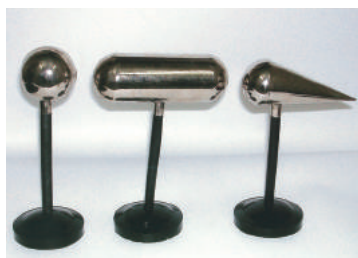
Approximately 30cm square pads.

Material	Cat. No.
Cotton flannel	3129-01
Silk flannel	3129-02
Wool flannel	3129-03

## ELECTROSTATIC CONDUCTOR

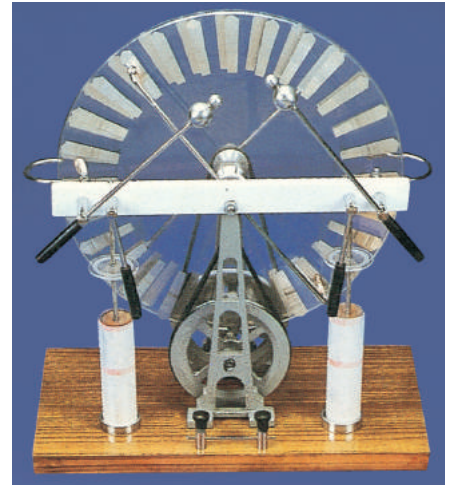
Mounted on a insulated stand.

Sphere 5 cm	3000-01
Cone 12.5 x 5 cm	3000-02
Cylinder 10 x 5 cm	3000-03



## WHIMSHURT MACHINE

For generating static electric charges and causing electric discharges. Relative to Van de Graaf it produces higher current with lower voltage. Consists of two high resistance plastic disks of diameter 25mm approx, with equally spaced metal sectors. The discs are supported in two rigid upright supports, rotating in opposite directions with a hand crank. Provided with a system of induced charge collecting brushes, adjustable ball-ended electrodes and cylindrical Leyden jar capacitors for obtaining higher potential. Produces substantial opposite charges which are deposited in the capacitors and on metal spheres. A rapid sequence of sparks can be generated by lowering the system's capacitance. Mounted on insulated wooden base.



3131 -01

## ELECTROSCOPE, FLASK TYPE

For experiments in detection of electric charge and determination of polarity.

Consists of an Erlenmeyer flask 250mL, and a plated rod with a knob of diameter 16mm ( $\frac{2}{3}$ in) passing through a rubber stopper. A pair of aluminium leaves are suspended from the rod.

3132-01



## ELECTROSCOPE, METAL CASE

More sensitive instrument as leaf deflection is unaffected by air currents or by charges residing on the case. Reacts only to charges which are intentionally brought near or put on them.

Comprised of a box made of aluminium with two transparent glass windows to shut out air currents and a plated metal support rod entering from the top through a polyethylene insulator. Two leaves of thin aluminium foil are suspended from the support rod. Supplied with three pairs of aluminium leaves.

3135-00





# ELECTRICITY & MAGNETISM

## PROOF PLANE

For transferring electrostatic charges from one body to another such as Leyden jars and electroscopes. Consists of a plated brass disc of diameter 25mm on a 15cm long insulated handle.

3133-01



## ELECTROSCOPE PITH BALL TYPE

For demonstrating the attraction and repulsion of electric charges.

Consists of an insulated brass pillar and hook on a base. Supplied with two colored pith balls with strings attached.

3134-01



## PITH BALL, SPARE

For electroscopes pith ball type as described above. Pack of 10.

3134-02

## ELECTROSTATIC KIT



Comprises of 4 metallized polystyrene spheres, 2 each of aluminium cans, polyethylene tiles and 1 each of electroscopes, nylon reel, cellulose acetate strip, polyethylene strip, wire stirrup, electrophorus, proof plane, wire hook, rubber cloth.

3135-05

## LENZ LAW APPARATUS

The 30cm copper tube has a windowed groove down the side that permits observation of the descending magnet or slug. Observe the effects of eddy currents as the magnet floats downwards, apparently defying gravity. Supplied with metal slug and a similar sized magnet.

3007-00



## WHEATSTONE BRIDGE, SLIDE WIRE FORM, FOUR GAPS TYPE



Improved version of simple meter bridge. For precise measurement of an unknown electrical resistance and for comparing nearly equal resistances without determination of the end-resistances.

Comprised of a hardwood base 1.1 meter long with laminated top and plastic feet. A meter long constantan resistance wire, 24swg, is stretched along a meter scale graduated in millimeters fitted on this base. Each end of the wire is firmly and precisely attached to plated copper strips. Three more copper strips are fixed parallel to the wire providing four gaps. Electric connections are made through 4mm socket binding post terminals. Supplied with a knife-edge jockey to make contact with resistance wire and the galvanometer (not supplied).

3143-01

## PENCIL JOCKEY (KNIFE EDGE JOCKEY)

For wheatstone bridges and potentiometers.

A brass metal knife edge is mounted on one end of an insulated handle with a 4mm socket binding post terminal on the other end. Overall length 100mm. Pack of 10 pieces.



3143-02

## CONTACT TAP KEY (TAPPING KEY)

For providing momentary contact in electrical circuits which are normally open. Can also be used in morse code applications.



Consists of a bakelite base with two 4mm socket binding post terminals. Circuit is closed with plated spring hard brass strip with insulated knob. Silver contacts.

3144-01

# ELECTRICITY & MAGNETISM

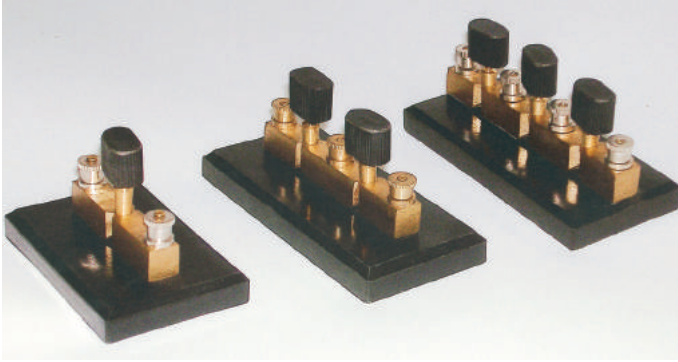
## FAHNSTOCK CLIP (CONNECTOR)

For making temporary one wire electrical connections in low voltage electrical circuits. Made of brass. With a hole for mounting.



3162-02

## PLUG KEYS (PLUG SWITCHES)

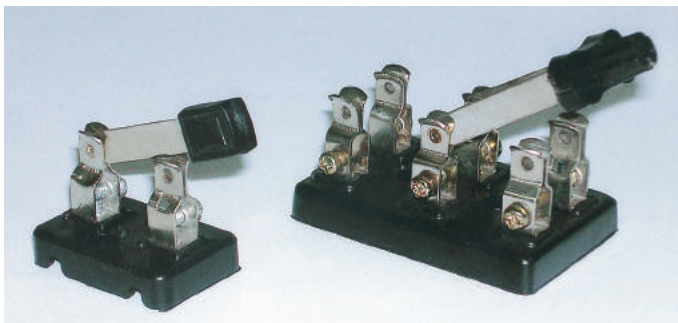


Comprised of two or more brass blocks fitted with brass terminals and mounted on a black bakelite base. Tapered plugs with bakelite moulded tops fit into the tapered holes between the blocks providing low resistance contact.

Type	Cat. No.
One way	3146-11
Two way	3146-12
Three way	3146-13
Four way	3146-14

## KNIFE SWITCHES

Useful as a basic component for any electrical laboratory. Mounted on a bakelite base. Allows visible connection for easy use. With screw holes and suitable for bench fixing and panel mounting. Available in four configurations.



Type	Cat. No.
Single-pole, single-throw	3147-21
Single-pole, double-throw	3147-22
Double-pole, single-throw	3147-23
Double-pole, double-throw	3147-24

## LAMP HOLDER (ECONOMY SWITCH)

Open bulb miniature socket. Consists of a 53mm diameter plastic base with two plated brass Fahnstock clips for connecting wires to a miniature lamp bulb holder.



3163-03

## SWITCH WITH FAHNSTOCK CLIP

Switch for lamp holder. Mounted on plastic base, 50mm dia.



3163-05

## RECEPTACLE FOR MINIATURE LAMP (LAMP HOLDER M.E.S. UNMOUNTED)

For flash lamp bulbs. Consist of a rolled shell of brass mounted in plastic base with two screw terminal connections. Diameter 29mm and height 16mm. For use at voltages up to 50V A.C.



3161-01

## BULB HOLDER SBC

Mounted on a plastic base. Connection via 4mm socket terminals.



3161-11

## INDUCTION COIL

To produce high voltage alternating current or pulses of high voltage current from a low voltage direct current source. Suitable for use with gas-filled discharge tubes, vacuum tubes, eudiometers and for general laboratory work.

Comprised of two coils fully enclosed in a polished wooden case with binding posts. Includes adjustable vibrator system, primary current polarity reversal and off/on switch, a condenser enclosed in the box and special alloy contacts. Spark gap at the discharge points can be adjusted by sliding rods back and forth. Requires 6-12 volt power source such as a battery.

Maximum Spark length	Cat No.
25mm <b>6-8 volts @ 3 amps</b>	3148-01
50mm <b>6-12 volts @ max 5</b>	3148-02



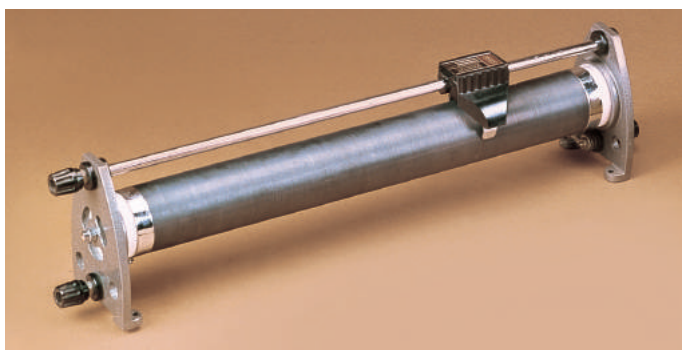
# ELECTRICITY & MAGNETISM

## RHEOSTAT, SLIDE WIRE

For laboratory use as a variable series resistance or as a potentiometer. Can control current and voltage.

Made from heat resistant, air cooled, hollow porcelain tube closely wound with a resistance wire of copper nickel alloy which is previously oxidized to provide perfect insulation. The end supports are made of metal with provision for screw mounting. A bakelite slider carries a phosphor bronze contact which can be moved rapidly and smoothly and can rest anywhere along the winding. The insulation is sand-papered off where the slider makes contact. Resistance in ohms and current carrying capacities are engraved on contact carriage. Three terminals are provided for electrical connections, one at each end of the winding and the third at one end of the slide rod so that the unit can be used either as a rheostat or as a potentiometer.

Available with a variety of resistances and current carrying capacities. Power ratings (watts) can be calculated as  $\text{Watts} = (\text{Current in amperes})^2 \times \text{Resistance in ohms}$



Max. current Amps	Resistance Ohms	Cat No.
3.3	11	3149-21
3.3	22	3149-22
5.0	11	3149-23
5.0	15	3149-24
6.5	7.5	3149-25
6.5	13	3149-26
8.0	2.5	3149-27
8.0	4.5	3149-28
8.0	8.5	3149-29
0.3	1700	3149-30
1.0	175	3149-31
1.6	100	3149-32
1.8	92	3149-33
2.3	34	3149-34

### RHEOSTAT - METAL ENAMELED PIPE

3.3	21	3150-21
5.0	14.2	3150-22
6.5	8.2	3150-23

Caution: Rheostat of unprotected design should not be used on electric supplies more than 50 volts.

## ELECTRODES, FLAT WITHOUT BINDING POSTS

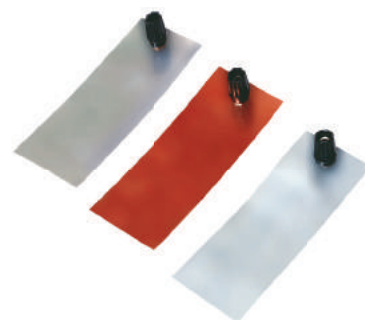
For assembling voltaic cells, electrolysis experiments etc. Size (l x w), 125 x 25mm.



Material	Cat. No.
Aluminium	3151-01
Carbon	3151-02
Copper	3151-03
Iron	3151-04
Lead	3151-05
Zinc	3151-06

## ELECTRODES FLAT WITH BINDING POST

Size (l x w), 125 x 50mm with 4mm socket binding post terminal.



Material	Cat. No.
Aluminium	3151-21
Carbon	3151-22
Copper	3151-23
Iron	3151-24
Lead	3151-25
Zinc	3151-26

## ELECTRODE CARBON ROD

For electrolysis of reactive materials like hydrochloric acid and other compounds. Suitable alternative to platinum. Alligator clips can be used for making wire connections.



Size	Cat. No.
150 X 5mm	3151-41
200 x 5mm	3151-42

# ELECTRICITY & MAGNETISM

## VOLTAMETER COPPER

For measuring the quantity of electricity from the mass of copper deposited on one of its electrodes.

Consists of three copper plates suspended from a bakelite cover of a plastic jar. Outer two electrodes acting as double anode are connected to one binding post on the top. The third inner copper plate fixed to another binding post acts as a cathode and can easily be removed for weighing.

3153-00



## ELECTRODE PAIR, PLATINUM, SPARE

For use with Hoffman Electrolysis Apparatus described above (3155-01).

3155-04



## ELECTRODE PAIR, CARBON, SPARE

For use with Hoffman Electrolysis Apparatus described above. Size (l x d), 100 x 5mm. Inserted in a rubber stopper with insulated lead wire.

3155-05



## HOFFMAN ELECTROLYSIS APPARATUS

For qualitative and quantitative study of the electrolytic decomposition of electrolytes such as water, hydrochloric acid etc.

Consists of two vertical 50mL, gas-collecting, graduated glass tubes with stopcocks at top and joined by a bridging tube to a reservoir and fitted with a pair of platinum electrodes at the lower ends of the glass tubes. A lead wire connecting the platinum electrode passes through the glass tube for external connections, so that only the platinum electrode comes in contact with the electrolyte. Packed in a styrofoam case. Mounted on a cast iron stand designed for safe clamping. Requires a 6V battery or low voltage D.C. power supply for operation.

3155-01



## BROWNLIE ELECTROLYSIS APPTS

Designed for simplicity and economy. Ideal for lecture table or student laboratory work. Consists of nonconducting support equipped with binding posts connected to 2 insulated platinum electrodes, 2 inverted 150mm test tubes, and a 112 x 125mm glass jar.

3155-10



## ELECTROLYSIS CELL

A simple safe cell for students and requires a very small quantity of electrolytes. It consists of a 75x25mm glass tube, the lower end of which accommodates a tight-fitting rubber stopper with two carbon electrodes. Contact with each electrode is by

means of a crocodile clip. The evolved gas is collected in two glass test tubes 75x10mm.

3155-15

## DANIEL CELL

Copper vessel 135x100mm (ht x d) with perforated shelf for Copper Sulphate crystals. Supplied with the porous pot and zinc rod.

3010-01



## HOFFMAN ELECTROLYSIS APPARATUS GLASS PART ONLY

Spare glass parts only. Without metal stand.

3155-02

## METAL STAND FOR HOFFMAN ELECTROLYSIS APPARATUS

For supporting the above and similar apparatuses. Such as 3155-01.

3155-03

## LECLANCHE CELL

Charged porous pot 140 x 60mm (h x d) having an e.m.f. 1.5V in a rectangular polyethylene jar. Supplied with the zinc rod.

3010-05



# ELECTRICITY & MAGNETISM

## HOLDER FOR "D" DRY CELLS

For using "D" flash light cell as small, low-voltage power source in the science laboratory, kits etc.

Snap-fit aluminium holder for "D" dry cells with Fahnestock clips on both sides for external connections. Provided with holes for attaching to a board or panel. Any number of cells can be connected in series or parallel.

3160-01



## ELECTROMAGNET U-SHAPE

Model of lifting magnet used in industry, such as scrap metal lifter. Consist of two plastic bobbins wound with enamelled copper wire and mounted on each arm of a soft iron U core. Each of the bobbins is fitted with two 4mm socket binding posts. Includes an armature with hook to be used as a lifting ring. Operates on 3-6 Volts D.C. Overall length 100mm.

3165-01



## TICKER TAPE TIMER

To demonstrate the concept of time and timing in applications such as measurement of velocity and acceleration, free fall experiments, projectiles and circular motion.

It employs a concealed electromagnet with spring-loaded armature, which vibrates and produces dots on a paper tape via a carbon disc. Working voltage 6-12V

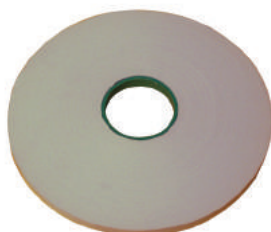


Type	Cat. No.
A.C.	3012-01
D.C.	3012-02

## TICKER TIMER TAPE

A 100m roll, 10mm wide

3012-09



## CARBON DISCS

Pack of 100

3012-10



## DOOR BELL, ELECTRIC

For a range of basic experiments such as electric doorbell experiments in science laboratory. Made of plated pressed steel gong diameter 6.8mm. Total length 15.5cm. Works on 3V dry cells. Coils are enclosed under a removable plastic cover with 4mm socket terminals.

3166-01



## BELL DEMONSTRATION UNIT

A working model built of large components, the simple construction of which enables the principles of operation of the electric bell and electro-magnet to be easily understood.

3166-05



## ELECTROMAGNETIC KIT (Westminster)

Pupils can conduct many experiments in electromagnetism, including the manufacture of their own working electric motor.

Comprises 8 anisotropic alloy magnets, 8 anisotropic ceramic ferrite magnets, 4 steel magnets, yokes, plotting compasses, hardboard formers, iron filings dispensers, bottle of iron filings, double C-cores, C-core clips, rings and split rings, support bases, armatures with axle tubes, aluminum axle rods, split pins, rivets, rubber tubing, formers, reels, cellulose tape, reels of Cu wire, white paste board, plain postcards, white cotton, carbon resistors, (10W and 100W), flash lamp bulbs, neon bulbs, bulb holders (MES), wood clamps, wood blocks and instructions.

3166-71



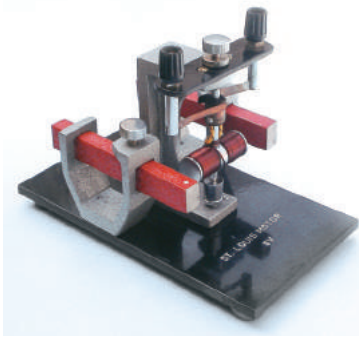
# ELECTRICITY & MAGNETISM

## ST. LOUIS MOTOR

For studying the functions of the basic parts of electric motors and demonstrating how electrical energy is converted into mechanical energy.

Comprised of a 2-pole D.C. armature with coils and mounted in an aluminium bracket with two binding posts and 4mm socket binding post terminals. The armature is held on brass cone bearings and a shaft fitted with split commutator. Complete with two permanent magnets in adjustable holders mounted on bakelite base (l x w), about 173 x 97mm. Works on 6V D.C. power source.

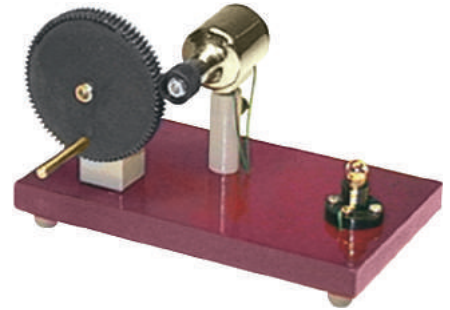
3167-00



## BI-CYCLE DYNAMO

Consists of simple bicycle generator, mounted and geared so that it can be driven either at speed or slowly with the help of a crank. It demonstrates AC wave with help of an oscilloscope as also how the brightness of lamp increases when a dynamo powering it, turns faster.

3167-20



## DYNAMO AC/DC

Show the conversion of mechanical energy into electric energy and principle of working of simple AC and DC Dynamo. This model uses the basic assembly as the motor, but is mounted on a base-plate 230 x 90 mm approximate, which also carries a hand-drive pulley 120 mm dia. coupled to the smaller dynamo pulley by a rubber belt to give a step-up ratio. Electrical output is via a pair of 4 mm sockets and a light emitting diode is provided as simple output indicator. The model may also be used as a motor on a 6-8 V D.C. supply.

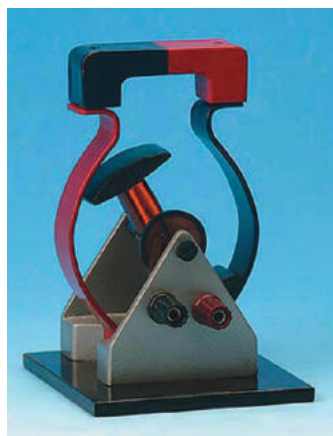
3167-05



## DYNAMO MOTOR

A model of the simplest form of D.C. electric motor, having 2-pole armature wound with enamelled copper wire, and a permanent magnetic field provided by a removable bar magnet. The construction of the model is completely open and all components are readily observable. A disc-type commutator is incorporated and external connection to the phosphorus bronze bushes is by means of a pair of 4 mm sockets. The motor operate on 6-8 volts D.C.

3167-10

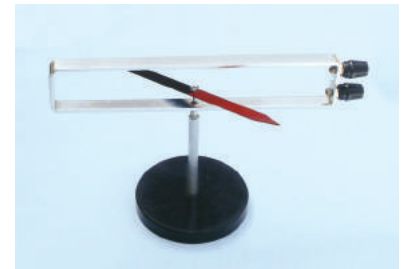


## OERSTED'S LAW APPARATUS

For demonstrating the relationship between magnetism and magnetic effect of electric current flowing in a wire.

Comprised of a permanent magnetic needle, 15cm, free to rotate at the center of an aluminium frame suitably connected to permit current to flow over or under the needle in either direction.

3168-00



## SOLENOID (HELIX), IRON CORE

For studying magnetic induction properties produced by electric current and the effect of an iron core, etc.

Consists of a plastic spool with windings of enamelled copper wire having brass binding posts on square end supports. Includes a soft iron core rod of diameter 18cm and instructions.

3171 -00

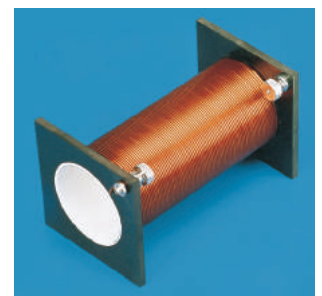


## SOLENOID (HELIX), AIR CORE

To provide external magnetic field where required and to change the rate of magnetic flux passing through a coil.

Consists of a plastic spool with windings of insulated copper. End plates have brass binding posts. Capacity 10 amperes when used intermittently and 5 amperes when used continuously.

3172-00



# ELECTRICITY & MAGNETISM

## C CORE

Pair of Laminated C-Core with clamp.

These type of cores are used in instrument transformers, power transformers, inductors, transducers, variable - ratio transformers, insulation transformers, pulse transformers, AC-DC chokes, high frequency rectifiers and special transformers.

C- Cores are strip wound, impregnated and cut into two halves. Since these cores are assembled around the bobbins in a very short time it takes less time to manufacture the transformer.



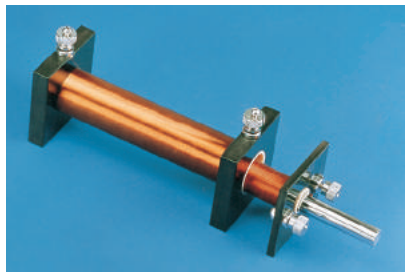
3172-51

## PRIMARY AND SECONDARY COIL SET

For studying electromagnetic induction, ferromagnetism and principles of a transformer.

Consists of two coils wound with enamelled copper wire over heavy plastic spools fitting one within the other. The inner primary coil has 1250 turns of heavy wire and the outer, acting as secondary coil with 250 turns of fine wires.

Square supports of thick insulating material are used as vertical or horizontal mount. Both coils are equipped with binding posts and a soft iron core for induction studies.



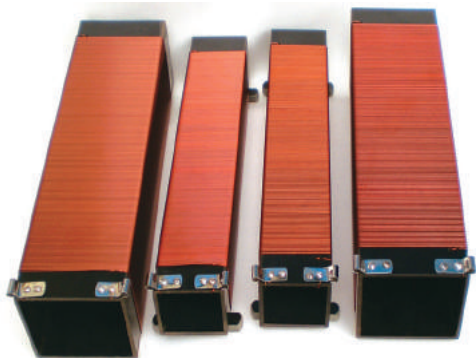
3173-00

## SOLENOID SET OF 4

For quantitative investigation of magnetic field within solenoids having different cross-sectional areas and number of turns per meter. The set has square sections, single layer solenoids, each having wound length of approximately 260mm and mounted on a former fitted with small feet and 4 mm sockets.

Two solenoids are of 2500 mm<sup>2</sup> cross-sectional area and have 165 and 330 turns respectively and the other two area of similar but of 5000mm<sup>2</sup> cross-sectional area.

3172-11



## SOLENOID FLAT

To investigate qualitatively and quantitatively, the interaction between the field surrounding a current-carrying wire and that produced in the flat solenoid. It consists of approximately 258 turns of enameled copper wire wound on wood and plastic former. Connections are made via 4mm socket clips.



3172-15

## RESISTANCE BOX

Interchangeable 4mm spring plug type with non-inductive resistance coils, accuracy + 0./5%. Each coil rated 1W. In wooden case, with external connection via 4mm sockets.



Range	Cat. No.
0 to 50 x 1 Ω	3015-01
0 to 100 x 1 Ω	3015-02
0 to 500 x 1 Ω	3015-03
0 to 1000 x 1 Ω	3015-04
0 to 5000 x 1 Ω	3015-05
0 to 10000 x 1 Ω	3015-06

## DECADE RESISTANCE BOX

Four decade dial type, with tapping points between each dial to allow use as an accurate potential divider, ratio arm, etc.

For A.C. or D.C. measurements, accuracy better than 0.1% except 0.1 Ω which is + 0.5%,

continuous loading 0.5W each step. In metal case 273 x 108 x 102mm, with earth connection for high voltage or A.C use and 4mm socket terminals appropriately positioned in circuit diagram on top panel.



Range	Cat. No.
0 to 999.9 X 0.1 Ω	3015-30
0 to 9999 X 1 Ω	3015-31
0 to 99990 X 10 Ω	3015-32

# ELECTRICITY & MAGNETISM

## RESISTANCE COILS

Wire wound resistance in case with 4mm socket terminals for connection. Accuracy 0.2%.



3050-02	0.1 ohms
3050-04	0.5 ohms
3050-06	1 ohms
3050-08	2 ohms
3050-09	3 ohms
3050-10	5 ohms
3050-12	10 ohms
3050-14	50 ohms
3050-16	100 ohms

## SOFT IRON ROD

For uses involving changing magnetic flux in electromagnets, electric motors, generators and transformers. Dimension (d x l), 200 X 6mm.

3181 -01



## STEEL BALLS

As a substitute for iron filings for studying the phenomenon of magnetic fields. Form clusters and chains between unlike poles of magnets. Polished, hardened spheres of diameter 3mm. Pack of 100.

3183-00

## TANGENT GALVANOMETER

Ring of bakelite 162mm and wound with three coils of insulated copper wire 2, 50, 500 turns. Connections can be made with 4mm socket terminals.

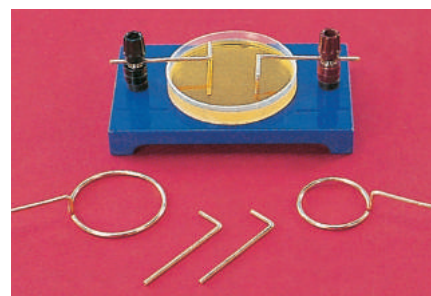
3158-02



## ELECTRIC FIELD APPARATUS

To demonstrate the electric fields patterns. Supplied with 3 pair of electrodes that is, straight, pointed and circular.

3012-00

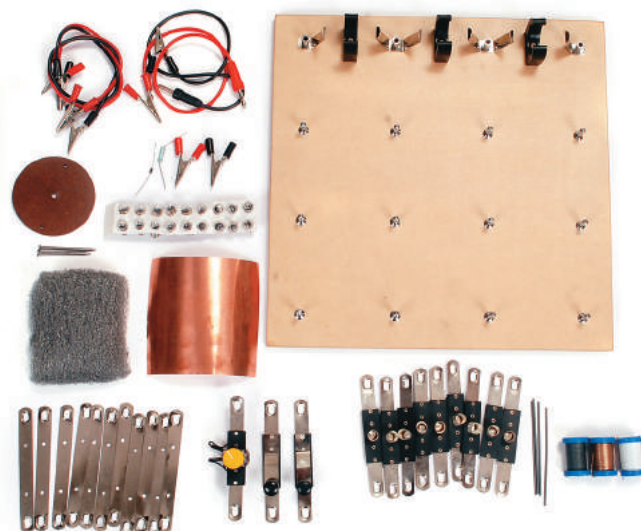


## CIRCUIT BOARD KIT

Allows students to investigate nature and properties of electricity using simple circuits that can be constructed on a base board. The kit consists of the following:

- 1 Base board
- 12 Connectors plain. For building the circuit
- 9 Lamp holders, mounted on connectors
- 1 Rheostat, mounted on a connector
- 2 Push switches, mounted
- 2 Crocodile connectors with lead
- 2 Crocodile clips
- 1 Reel of bare copper wire
- 1 Reel of bare eureka wire
- 1 Reel of plastic covered copper wire
- 2 Leads, crocodile to 4mm plug connectors
- 1 copper foil 150mm square
- 1 Resistor
- 2 Soft iron nails
- 1 Piece of steel wool
- 1 Rectifier
- 4 Pencil leads
- 1 Hardboard disc
- 10 Lamps 1.25V

3183-10

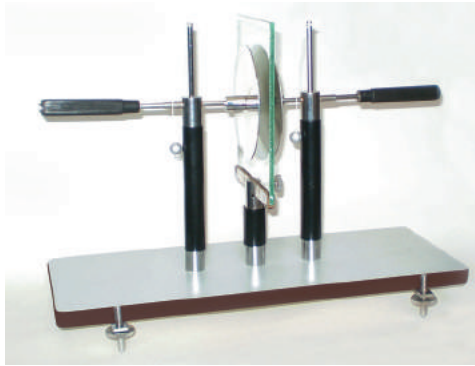




# ELECTRICITY & MAGNETISM

## AEPINUS CONDENSER

The condenser consists of two adjustable capacitive plates, 100mm diameter and separated by a glass dielectric plate. Connection with these plates is with 4mm socket terminals.



This glass plate is held in a clip between the discs and can be replaced by another material to show the effect of different dielectrics.

3055-80

## VAN DE GRAFF GENERATOR, GENERAL

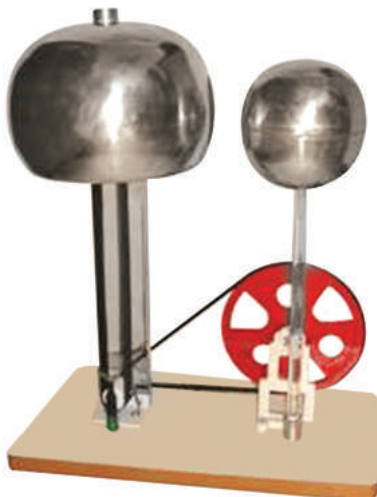
The Van de Graff Generator is an electrostatic machine for the production of very high DC voltages with low current intensity, making tests with the Van de Graff generator completely harmless. The voltage is harmless and it feels like a common “static shock” you might receive when you walk across a carpet on a dry day.

## VAN DE GRAFF GENERATOR HAND DRIVEN

The generator is provided with a conductor sphere with diameter of 220 mm. The sphere is equipped with a 4 mm socket (for connection to other equipment through a wire with

Banana plug). With discharging sphere.

3055-01



## VAN DE GRAFF GENERATOR ELECTRIC DRIVEN

Consists of a large 220mm conductor sphere and a 100mm discharging sphere. The conductor sphere is equipped with a 4 mm socket (for connection to the accessories).

The motor operates at a speed up to 5000 r.p.m. and its speed can be varied.

CE marked

3055-05

## ACCESSORIES

Perspex pillar with suspended metallised sphere.

3055-11

Faraday's Pail. (The Perspex pillar will also plug into this pail.)

3055-13

Perspex cylinder with metal cap and with metallised spheres.

3055-15

Head of hair with comb.

3055-17

Electric whirl.

3055-19

Neon bulb.

3055-21



# ELECTRICITY & MAGNETISM

## METERS VARIOUS



Housed in a plastic case with sloping face. 4 mm socket terminals are provided for connection

### Ammeter DC Range

3020-05	100mA
3020-06	500mA
3020-07	0-1A
3020-08	5A
3020-09	10A

### Dual Range

3020-21	1/5A
3020-22	0-3/30A

### Voltmeter DC Range

3023-05	0-500mV
3023-06	0-1V
3023-07	0-5V
3023-08	0-10V
3023-09	0-15V
3023-10	0-30V

### Dual Range

3023-21	0-100/500V
3023-25	0-5/15V

### Galvanometer

Moving coil type with 100µA sensitivity

3027-00	30-0-30
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## DEMONSTRATION METER

Moving coil type meter. The basic sensitivity of this meter is 5mA, 100mV f.s.d. It is used to demonstrate the working principle of AC and DC ammeters and voltmeters with interchangeable plastic scale. Housed in a sturdy plastic frame 30x15x30cm.

3031-00

## DEMONSTRATION METER SCALES SPARE

### DC Current Range

3031-10	2.5-0-2.5mA
3031-11	10-0-10mA
3031-12	0-10mA
3031-13	0-50mA
3031-14	0-100mA
3031-15	0-500mA
3031-16	0-1A
3031-17	0-5A

### DC Voltage Range

3031-31	0-1V
3031-32	0-5V
3031-33	0-10V
3031-34	0-15V
3031-35	0-300V
3031-36	5-0-5V
3031-37	10-0-10V
3031-38	0-100mV



# ELECTRICITY & MAGNETISM

## AC Current Range

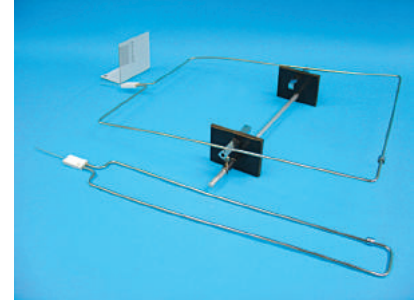
3031-51	0-10mA
3031-52	0-50mA
3031-53	0-100mA
3031-54	0-500mA
3031-55	0-1A
3031-56	0-5A

## AC Voltage Range

3031-71	0-5V
3031-72	0-10V
3031-73	0-15V
3031-74	0-50V
3031-75	0-300V

## CURRENT BALANCE KIT

For investigating the interaction between magnetic fields and a current carrying wire. Includes both wide and narrow current balance wires. A copper wire formed into a rectangle with a discontinuity at one end and is balanced on a pair of metal fulcrum. The ends are joined by a plastic sleeve through which a brass pointer is fitted. Electrical connections are made via a 4mm socket in the end of each fulcrum.



3044-01

## CROCODILE CLIPS

Made of steel (plated). Pack of 100 (50 Red and 50 Black)



3046-01

## BANANA PLUG, 4MM

Brass parts with stainless steel spring to maintain adequate contact pressure.



Pack of 100 (50 Red & 50 Black)

3046-05

## BANANA PLUG, 4mm, WITH LEAD

Banana plug at both ends of a 500mm insulated copper wire.



3046-51

Red

3046-55

Black

## TERMINALS- 4MM

High quality moulded plastic parts. All metal parts are made of brass. Sold in packs of 50.



3046-10

Red

3046-12

Black

3046-14

Yellow

3046-16

Green



## PROJECTION METER

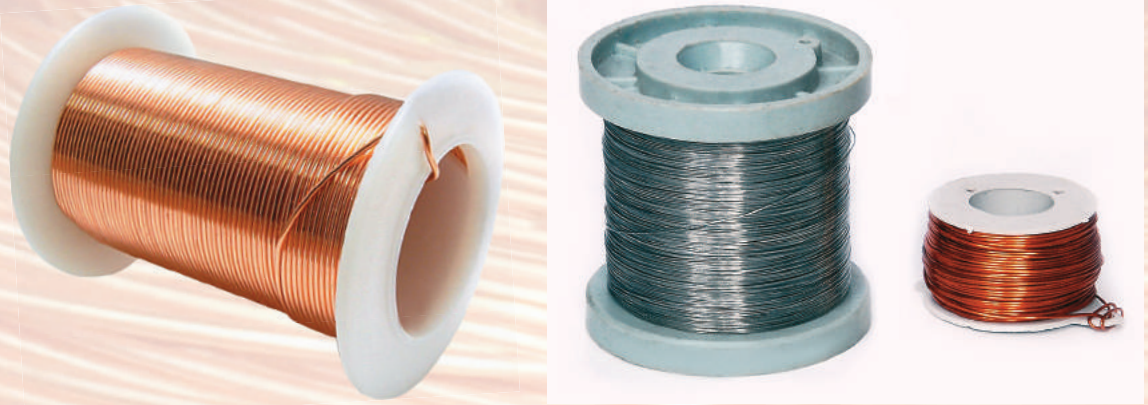
These are transparent working meters and when displayed on an overhead projector, are visible in a larger classroom.

3035-02	Overhead AC Ammeter Triple, 0-0.1A/1A/10A
3035-04	Overhead AC Voltmeter Dual, 0-15V/150V
3035-06	Overhead DC Ammeter Triple, 0-50mA/500mA/5A
3035-08	Overhead DC Voltmeter, Triple, 0-3V/15V/150V
3035-10	Overhead Projection Galvanometer; -25 to 0 to +25 $\mu$ A

# ELECTRICITY AND MAGNETISM

## COPPER WIRE, BARE

Wound on reels



swg	20	22	24	26	28	30	32
125g	3038-02	3038-04	3038-06	3038-08	3038-10	3038-12	3038-14
250g	3038-22	3038-24	3038-26	3038-28	3038-30	3038-32	3038-34

## COPPER WIRE, ENAMELLED

Wound on reels

swg	20	22	24	26	28	30	32
125g	3038-42	3038-44	3038-46	3038-48	3038-50	3038-52	3038-54
250g	3038-62	3038-64	3038-66	3038-68	3038-70	3038-72	3038-74

## EUREKA WIRE (CONSTANTAN WIRE)

A 60% 40% Cu-Ni alloy, resistance wire, bare, wound on reels.

swg	20	22	24	26	28	30	32
25g	3040-02	3040-04	3040-06	3040-08	3040-10	3040-12	3040-14
125g	3040-22	3040-24	3040-26	3040-28	3040-30	3040-32	3040-34
250g	3040-42	3040-44	3040-46	3040-48	3040-50	3040-52	3040-54

## NICHROME WIRE (NICKEL-CHROMIUM ALLOY WIRE)

High resistance wire, bare, wound on reels. 80%-20% Ni-Cr alloy.

swg	20	22	24	26	28	30	32
25g	3042-02	3042-04	3042-06	3042-08	3042-10	3042-12	3042-14
125g	3042-22	3042-24	3042-26	3042-28	3042-30	3042-32	3042-34
250g	3042-42	3042-44	3042-46	3042-48	3042-50	3042-52	3042-54

## COPPER WIRE, PVC INSULATED

A single strand copper wire of 24 S.W.G. with PVC insulation

3038-80	10 M Roll
3038-81	90 M Roll



## LIQUID CONVECTION APPARATUS

For demonstrating the phenomenon of thermal convection in liquids caused by temperature variation.

Consists of a rectangular shaped borosilicate glass tube (w x h), 15 x 21cm with a funnel shaped opening at the top for filling liquids. When this tube is partially filled with water and heated at one corner after adding a dye or potassium permanganate crystals or saw dust or aluminium powder, the movement of colors or particles illustrates the formation of convection currents.



3205-00

## GAS CONVECTION APPARATUS (VENTILATION APPARATUS, CONVECTION BOX)

For demonstrating the phenomenon of convection in air and the principle of room ventilation.

Consists of an enamelled metal box (l x w x h), 20 x 10 x 10cm, having a sliding glass door and two glass chimneys. When a candle in a socket is placed under one chimney and a smouldering tape or touce paper is placed underneath the other chimney, the flow pattern of smoke dramatically illustrates the formation of convection currents. Supplied with two Candles. Tape or touce paper are not supplied.



3210-01

## CHIMNEY, SPARE

For Gas Convection Apparatus mentioned above.

3210-02

## STEAM TRAP (WATER TRAP)

For preventing condensed water being carried over with steam prepared in a laboratory steam generator. Particularly useful when determining the heat of vaporisation with a steam calorimeter.

Consists of a borosilicate glass chamber with a curved inner tube to prevent drops of condensed steam from escaping, as well as a drainage tube.

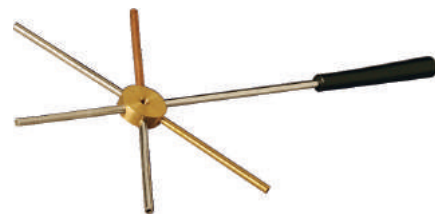


3219-00

## CONDUCTOMETER, FIVE ROD FORM

For demonstrating the different heat conductivity of five metals by observing the melting of wax.

Consists of five rods (l x d), 75 x 5mm of aluminium, brass, iron, copper, and stainless steel which are radially fitted on a brass disk of about 27mm diameter. Each of these rods have a cavity at the outer end for holding paraffin wax. The central disk is joined to an insulated handle by 125mm long plated steel rod. Overall length about 32cm.



3223-00

## INGEN HAUZ APPARATUS

Stainless steel tank 20 x 8 x 8cm, with 3mm rods of different materials, viz., aluminum, brass, copper, iron and glass embedded through a rubber stopper. Each rod has provision for placing a small portion of wax.



3223-10

## RING AND BALL APPARATUS

For demonstrating the expansion or contraction of metals.

Consists of two brass rods with insulated handles. One of the rods has a ring and the other one has a ball of approximate diameter 25mm, attached at the end. The brass ball passes through the ring when both are at room temperature, but when the ball is heated it expands and can not pass through the ring.



3226-00

## BAR AND GAUGE APPARATUS

For demonstrating the expansion by heating and contraction by cooling. The gauge just about fits over the bar at room temperature, while it does not when heated.

The gauge also has a hole which just accepts the bar end.

3226-10



# HEAT

## COMPOUND BAR (COMPOUND STRIP)

To demonstrate unequal expansion in different metals on heating. Highlights the role of temperature and materials in practical applications such as in thermostats.

Consists of a laminated strip of two different metals fitted in a wooden handle. The strip is about (l x w), 200 x 8mm. Due to differences in the co-efficient of linear expansion of both metals, the laminated strip bends dramatically on heating.



3230-00

## CALORIMETER, SET OF TWO

For determining specific heat, heat of fusion and heat of vaporisation

Consists of two polished spun aluminium vessels, i.e. an inner calorimeter (h x d), 80 x 65mm and an outer calorimeter (h x d), 140 x 100mm. Includes a plastic ring for seating the inner calorimeter, a stirrer, and a plastic lid for outer vessel. The lid has two holes for the thermometer and the stirrer. Supplied without the thermometer.



3235-00

## JOULES CALORIMETER (ECONOMY MODEL)

Inner copper vessel 75x50mm, fitted with a recessed plastic lid, with hole for a thermometer and carrying a heating coil. Connection to the 3-4V DC power supply is via 4mm socket terminals. The outer aluminum vessel is 100x60mm. With stirrer. Supplied without the thermometer.



3237-10

## ELECTRIC CALORIMETER (CALORIMETER, JOULE)

For determining the mechanical equivalent of heat by measuring the heat generated in an electrical resistance.

Includes the calorimeter set of two described above. The plastic lid is fitted with a heating coil to work with 6V supply or a battery, two 4mm socket binding posts for electrical connections, stirrer with an insulated handle and a single-hole rubber stopper for inserting a thermometer. Supplied without the thermometer. Requires a suitable voltmeter, ammeter, and thermometer (not supplied).



3237-00

## COPPER CALORIMETER

3235-11	75 x 50 mm
3235-15	90 x 65 mm
3235-20	100 x 75 mm



## MELTING POINT APPARATUS

For determining the melting point of solid substances. (upper limit 250°C) Consists of an aluminium cylinder (l x d), 50 x 63mm with a slanted hole of diameter 7mm on the top for inserting a thermometer. Can be heated on a burner. The substance to be melted is placed on the top of the cylinder. Melting point is noted when melting occurs.



3265-00

## SPECIFIC HEAT SPECIMEN CYLINDERS SET

For showing that when different metal cylinders are heated to the same temperature and immersed individually in an equal quantity of water, the rise in temperature of the water is directly proportional to the specific heat of the chosen metal cylinder. Individual cylinders can also be used for precise specific heat determination. Includes six cylinders made of aluminium, brass, copper, iron, lead, and zinc having diameters of 12.5mm. The length of each cylinder is adjusted so that all of them have the same mass.



3242-00

## SPECIFIC HEAT CYLINDER SET OF 6

Determine specific heats of five different metals. Use with a calorimeter to determine various specific heats of metal cylinders. Includes specification sheet. Set consists of aluminum, copper, zinc, tin, iron and lead cylinders. All the cylinders have the same mass (58g) and diameter (19mm). Accuracy is maintained by suspending the cylinder from a string rather than from a hook of a different metal; string is attached at the small, grooved knob.



3242-01

## LESLIE CUBE

To demonstrate the effect of thermal radiations on different type of radiations. The sides of the cube are painted dull black, bright black, white and bright tin. Each side is 125mm.



3030-11

## RADIATION CAN

Not all colors are created equal. Investigate how color can influence absorbing and radiating energy.

How to use: Exploring radiation and absorption.

1. Place black and silver containers near each other with thermometers inserted in each.
2. Angle a lamp so the light points directly at the sides of both containers.
3. Read off temperatures of each, with the light on, then off. Observe and record 10 minutes.

The cans are finished with black, white, and silver exteriors, so students can easily determine the effect of surface color on heat transfer. Set of three 500mL cans with stoppers to accommodate thermometer. Supplied without thermometer.



3030-12

## HOPE'S APPARATUS

To show that water has a maximum density at 4°C. Consists of a sheet metal cylinder, with two tubes in the upper and lower regions for inserting thermometers through rubber stoppers. Mounted on a base and encircled midway by an outer trough for holding a mixture of ice and salt. Temperature of the water is measured at the top and bottom of the inner cylindrical vessel over a period as the water cools. Supplied without the thermometer.



3252-00

## THERMOMETER ALCOHOL



-10 to 110°C x 1°C	3051-02
-10 to 110°C x 1/2°C	3051-04
0-360°C x 1°C	3051-06
0-220°F x 1°F	3051-08
-10 to 110 °C x 0.1°C	3051-20 (Precision Thermometer)

## CROOKES RADIOMETER

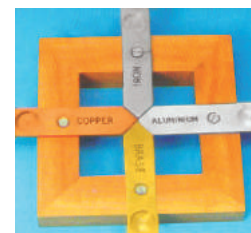
Excellent demonstration tool of the effects of heat and the conversion of solar power to mechanical power. Consists of a set of vanes each shiny on one side to reflect the light and blackened on the other to collect the energy. It is mounted in an evacuated glass bulb. When exposed to the sun or source of intense light it causes the vanes to spin.



8224-00

## THERMAL CONDUCTIVITY OF METAL

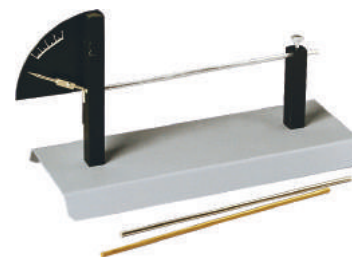
Comprising strips of copper, iron, aluminium and brass fixed on wooden frame meeting in the centre, outer ends of the strips formed with small cups to hold wax.



3223-10

## LINEAR EXPANSION APPARATUS (ECONOMY)

Ideal for younger students. Economically and accurately determines the coefficient of expansion of various metals. Has an easy to read scale, calibrated in millimeters and supplied with three different expansion rods. It shows heat expansion and cold contraction. Uses spirit burners or tea-light candles (not included)



6454-87

## CALORIMETER BLOCKS

For experiments on specific heat capacity. These cylindrical blocks have two holes, one for the immersion heater and one to take a thermometer. Mass of each block is about 1Kg + 2%



Aluminium	3053-01
Brass	3053-03
Copper	3053-02
Steel	3053-04

## BURSTING BOTTLE

For demonstrating the expansion of water on freezing. Consists of a cast iron bottle approximate 90x20mm with screw cap.

3055-02



## BURSTING BOTTLE SPARE FLASK ONLY

3055-03

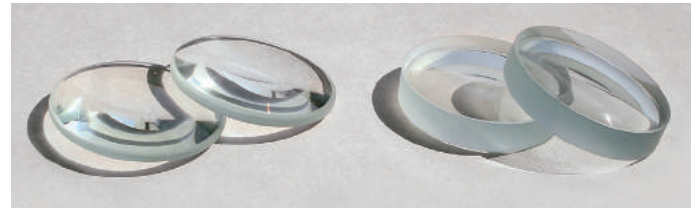
# LIGHT (OPTICS)

## LENSES SPHERICAL, UNMOUNTED

Made of polished glass with ground edges.

Bi-convex lens: Magnifying or condensing lenses, with two outward curving symmetrical faces.

Diameter	Focal Length(+)	Cat. No.
38mm	50mm	3305-01
	100mm	3305-02
	150mm	3305-04
	200mm	3305-05
	300mm	3305-07
50mm	50mm	3305-08
	1000mm	3305-09
	50mm	3305-21
	100mm	3305-22
	150mm	3305-24
75mm	200mm	3305-25
	250mm	3305-26
	300mm	3305-27
	500mm	3305-28
	1000mm	3305-29
	175mm	3305-41
	200mm	3305-45



Bi-Concave lens: Used for reducing the size or spreading out light, with two inward curving symmetrical faces.

Diameter	Focal Length(-)	Cat. No.	
38mm	50mm	3309-01	
	100mm	3309-02	
	150mm	3309-04	
	200mm	3309-05	
	300mm	3309-07	
	500mm	3309-08	
	1000mm	3309-09	
	50mm	50mm	3309-21
		100mm	3309-22
120mm		3309-23	
150mm		3309-24	
200mm		3309-25	
300mm		3309-27	
75mm	500mm	3309-28	
	1000mm	3309-29	
	175mm	3309-41	
	200mm	3309-45	



## LENS, DEMONSTRATION SET, GLASS

For showing the most important types of lenses.

Optically true with ground glass edges. Includes one each of double convex, plano-convex, double concave, plano-concave, concavo-convex and convexo-concave lens arranged in a plastic case.

Diameter	38mm	50mm
Cat No.	3313-01	3313-02

## NEUTRALISING LENS SET GLASS

Comprised of one each of biconcave and biconvex lens, 38mm in dia. and 15.5cm focal length, which when used together neutralise each other, the resulting effect being that of a plane glass.

3315-00



# LIGHT (OPTICS)

## OPTICAL BENCH

Optical Bench Pipe, 120 cm, with supporting feet.

The equipment consists of the following

6 Riders

1 Bulb Holder

1 Candle Holder

1 Plain Glass

1 Lens Double Convex f.l. 200mm

1 Lens Double Concave f.l. 150mm

1 Lens Double Convex f.l. 500mm

1 Slit Arrow

2 Lens Holders Round Disc

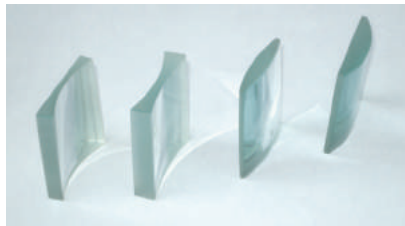
1 Slide Holder (can also be used as a lens holder)

3315-51



## CYLINDRICAL LENSES, GLASS

To focus light along a straight line. Useful for looking at full paths of 'rays' on paper, such as pencils of light emerging from the slits of a comb illuminated by a small lamp.



Made of optically true glass with polished faces and ground edges. Surfaces follow the sides of cylinder(s). Beveled edges.

Dimensions: (h x w), 50mm x 45mm

Power 7D (focal length ~143mm)

Bi-convex	3318-01
Bi-concave	3318-02
Plano-concave	3318-04
Plano-convex	3318-03

Power 14D (focal length ~72mm)

Bi-convex	3318-11
Bi-concave	3318-12
Plano-concave	3318-13
Plano-convex	3318-14

Dimensions: (h x w), 50mm x 50mm

Power 10D (focal length ~100mm)

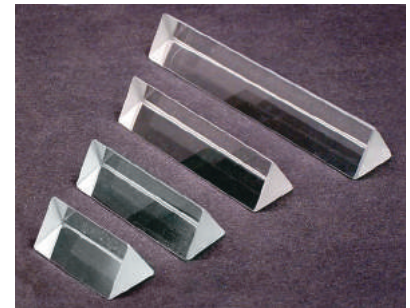
Plano-convex	3318-21
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Power 17D (focal length ~59mm)

Plano-convex	3318-31
Plano-concave	3318-32

## PRISMS

Prisms have several uses in optical systems. For example they can deviate a ray, disperse white light into the visible spectrum or erect an inverted image. Right angle prisms  $90^\circ$ - $45^\circ$ - $45^\circ$  are used for accomplishing a  $90^\circ$  bend due to total internal reflection. Depending on the mode of incidence of light on the inclined face, this prism may have an inverting effect with or without deviation.



## PRISMS, EQUILATERAL, ACRYLIC

For experiments in dispersion and refraction of light.

Face	K	Length	Cat. No.
25mm		25mm	3328-01 61-
25mm		50mm	3328-02 121-
25mm	16	75mm	3328-03 181-
25mm		100mm	3328-04 241-
25mm	331-	150mm	3328-06 361-

## PRISMS, EQUILATERAL, GLASS

Made of clear optical glass.

Face	Length	Cat. No.
25mm	25mm	3329-01
25mm	50mm	3329-02
25mm	75mm	3329-03
25mm	100mm	3329-04
25mm	150mm	3329-05

# LIGHT (OPTICS)

## PRISM, EQUILATERAL, MOUNTED

An optical glass prism mounted on a stand with adjustable height. The prism can be rotated on its own axis by 180° or locked at an angle. Prism dimensions:



Face	Length	Cat. No.
25mm	75mm	3331-03
25mm	100mm	3331-04

## PRISM, RIGHT ANGLE, GLASS

For measuring critical angle and observing total internal reflection. Made of clear optical glass.

Angles 90°-45°-45°. Approximate dimensions are:



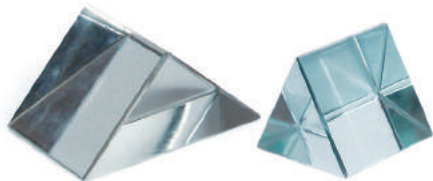
Face	Length	Cat. No.
35mm	25mm	3334-02
35mm	50mm	3334-04

Angles (90°-60°-30°)

Face	Length	Cat. No.
37mm	32mm	3335-01
38mm	38mm	3335-09

## PRISMS, SODA-LIME GLASS

Relatively inexpensive prisms for the students. These are molded from soda-lime glass and may have waves and small bubbles. The sizes are approximate only.



Equilateral prisms

Face	Length	Cat. No.
38mm	38mm	3336-01
50mm	50mm	3336-02

Right angle prism (90°-45°-45°)

Face	Length	Cat. No.
50mm	50mm	3337-01
38mm	38mm	3337-02

## PRISM, TRAPEZOIDAL (45° AND 60° PRISM), ACRYLIC

For studying the laws of optics.

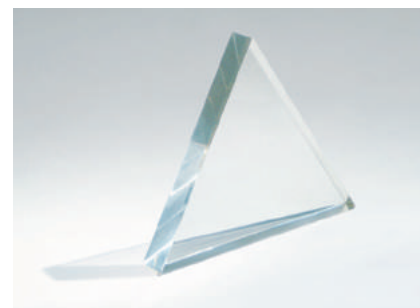
Made of 15mm thick and 32mm wide with two parallel sides 90mm and 40mm long at angles of 45° and 60°. One large surface is frosted enabling to follow the path of light.



3351 -02

## PRISM, EQUILATERAL, GLASS OR ACRYLIC

For index of refraction experiments.



Side	Thickness	Cat. No. Plate Glass	Cat. No. Acrylic
63mm	10mm	3340-02	3342-02
75mm	10mm	3340-04	3342-04
25mm	12mm	3340-06	3342-06
50mm	20mm	3340-08	3342-08

## BLOCK, RECTANGULAR, GLASS (PLATE)

To verify the laws of refraction.

Dimensions: (l x w x h),



114 x 63 x 18mm. Polished on all sides	3345-01
100 x 63 x 18mm. Polished on all sides	3345-03
125 x 65 x 18mm. Polished on all sides	3345-05
70 x 70 x 10mm. With opposite edges frosted and the other two polished	3345-07

# LIGHT (OPTICS)

## BLOCK, RECTANGULAR, ACRYLIC

Dimensions: (l x w x h)



100 x 75 x 20mm. Polished on all sides	3349-02
79 x 27 x 13mm. One face frosted	3349-04
70 x 70 x 9mm. Two opposite edges frosted and the other two polished	3349-06

## OPTICAL PIN

For optical experiments sold in pack of 100.



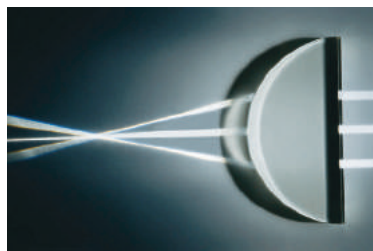
Size	Type	Cat. No.
37 mm	Steel	3345-95
50 mm	Brass	3345-97
75 mm	Steel	3345-96

## BLOCK, SEMICIRCULAR

Diameter 75mm and thickness 12mm

Glass	3353-01
Acrylic	3353-02

Diameter 60mm and thickness 15mm.



Made of Acrylic, with one frosted surface	3353-03
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## RAYBOX KIT

Consists of a 12V vertical filament bulb, fitted in a holder through top of the box. A cylindrical, concave lens, which can create divergent, convergent, or parallel rays, as required, is suspended in front of the bulb and can be moved to-and-fro for focus and fixed in position by a tightening screw on top of the box. Other end of box has triple aperture system. Hinged windows along the sides of the box have mirror surface on their insides, useful for color-mixing experiments. All windows in the box have vertical channels inside and outside to hold slit plates and color filters. A 1.5m electric cord with banana plugs is included. Box size 16.5 L x 7 W x 6cm H, matte-black finish. With instructions.

Optical Accessories set for light box (included):

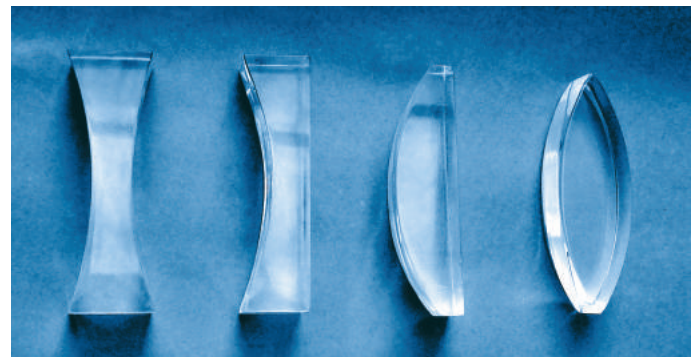


- Five Perspex blocks, free of optical imperfections and sharp edges: 1 rectangle, 1 triangle  $60^{\circ}$ - $60^{\circ}$ - $60^{\circ}$ , 1 triangle  $90^{\circ}$ - $60^{\circ}$ - $30^{\circ}$ , 1 triangle  $90^{\circ}$ - $45^{\circ}$ - $45^{\circ}$ , and 1 semi circle.
- Three Perspex, cylindrical lenses: 1 double convex, and 1 double concave, both with the same radius of curvature; and 1 thick double convex.
- Three mirrors, freestanding: 1 plane (mounted), 1 semi-circular metallic, and 1 parabolic.
- Two slit plates, metal, matte-black: one with three narrow slits at one end, and one narrow slit at the other; the other with four narrow slits at one end, and one wider slit at the other.
- Eight color filters, mounted: 3 primary and 5 secondary colors.
- Eight color cards, mounted.
- Spare bulb, 12V.

3355 -50

## LENSES, ACRYLIC

Dimensions: 90mm long and 15mm thick plate. Bottom surface is frosted.



Bi-convex (center width 25mm)	3352-01
Bi-concave (center width 18mm)	3352-02

Dimensions: 60mm long and 12mm thick. Bottom surface and both edges are frosted.

Double convex (center width 14mm)	3352-03
Double concave (center width 5mm)	3352-04
Plano-convex (center width 11mm)	3352-05
Plano-concave (center width 5mm)	3352-06

# LIGHT (OPTICS)

## DEMONSTRATION LIGHT GUIDE

An S-shape acrylic bar 220x15x15mm, which can be used to demonstrate total internal reflection and help students to understand the principles of optical communications. The bottom of the bar is painted white to aid visibility.

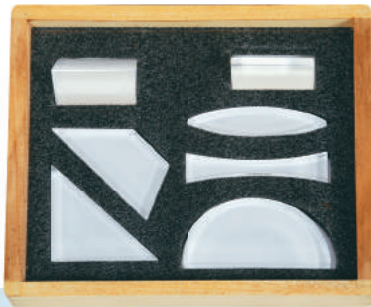


3355-20

## LENS DEMONSTRATION, SET OF SEVEN, ACRYLIC

For seeing the reflection and bending of light as it passes through lenses and prisms. Phenomenon of refraction and internal reflection is also easily visualised.

The base surfaces are painted white for easy visibility of a ray of light. Thickness of the blocks is 10mm except for the last two items noted below.



Set includes the following:

Bi-convex lens 90mm long

Bi-concave lens 90mm long

Semicircular lens 93mm diameter

Trapezoidal block 85 and 30mm opposite faces

Right angle prism 100mm hypotenuse

Right angle prism 32mm hypotenuse and 50mm long

Equilateral prism 25mm face and 50mm long

Supplied in a wooden box.

3355-01

We can also supply lenses with one side frosted.

## ACRYLIC PRISM AND LENS SET OF 7

Consists of the following blocks. Each has a thickness of 25mm and size 70mm. In a wooden case.

75mm



Bi-Concave

Bi-Convex

Rectangular

Semi-circular

Triangle Equilateral

Triangle Right angle ( 90°-45°-45°)

Triangle Right angle ( 90°-60°-30°)

## RIPPLE TANK

To demonstrate the properties of wave motion and effects of reflection, refraction and interference. The tank is of plastic and has a clear acrylic base.

The kit contains

1 Ripple tank 400mm x 400mm with legs and lamp support

1 Ripple bar with two plastic dippers

2 Springs to support the ripple bar

1 Hand stroboscope

1 Halogen lamp 12V 25W

1 Convex lens

1 Concave lens

1 Rectangular block

1 Curved reflector

1 Small barrier

2 Large barrier

3357-00



## MIRRORS, SPHERICAL

For basic experiments in optics. Made of optically true glass, with protected silver coating.

### Concave Mirrors

Diameter	Focal Length	Cat. No.
38mm	100mm	3360-01
	150mm	3360-02
	200mm	3360-03
	250mm	3360-04
	300mm	3360-05
	500mm	3360-06
	1000mm	3360-07
50mm	100mm	3360-21
	150mm	3360-22
	200mm	3360-23
	250mm	3360-24
	300mm	3360-25
	500mm	3360-26
	1000mm	3360-27
75mm	100mm	3360-41
	150mm	3360-42
	200mm	3360-43
	250mm	3360-44
	300mm	3360-45
	500mm	3360-46
	1000mm	3360-47

### Convex mirrors

Diameter	Focal Length	Cat. No.
38mm	100mm	3362-01
	150mm	3362-02
	200mm	3362-03
	250mm	3362-04
	300mm	3362-05
	500mm	3362-06
	1000mm	3362-07
50mm	100mm	3362-21
	150mm	3362-22
	200mm	3362-23
	250mm	3362-24
	300mm	3362-25
	500mm	3362-26
	1000mm	3362-27



75mm	100mm	3362-41
	150mm	3362-42
	200mm	3362-43
	250mm	3362-44
	300mm	3362-45
	500mm	3362-46
	1000mm	3362-47

### MIRROR, SPHERICAL, CONVEX-CONCAVE

Spherical glass mirror, diameter 75mm, focal length 200mm. Metallized coating on one side so that one side acts as a concave mirror and the other as a convex mirror.

3364-01

### LENS HOLDER, WOODEN

Can hold lens upto 75mm diameter.

3364-21



### MIRROR, FLAT STRIPS, UNMOUNTED

For verifying the laws of reflection and other experiments, in optics.



Length x width	Glass Cat. No.	Plastic Cat. No.
25 x 75mm	3366-01	3366-21
40 x 150mm	3366-02	3366-22
50 x 75mm	3366-03	3366-23
75 x 75mm	3366-04	3366-24
75 x 100mm	3366-05	3366-25
100 x 100mm	3366-06	3366-26
100 x 150mm	3366-07	3366-27

# LIGHT (OPTICS)

## MIRROR HOLDER

Hardwood cube with slot to hold mirror strip vertically.

Side 32mm.

3366-80



## NEWTON'S RING APPARATUS

For studying interference fringes due to sunlight or monochromatic light.

Consist of a plano-convex lens, diameter 60mm, and an optically polished (worked) flat glass plate mounted on a ring metal pressure frame with three compression adjusting screws for proper centering of concentric circular Newton rings.



3370-00

## SPECTROSCOPE, DIRECT VISION

For quantitative examination of spectral composition of white light, radiant bodies etc.

Comprises a metal draw-out tube of 20 mm diameter, with an adjustable slit at one end. The light passing through this slit falls on the prism elements and break up into a spectrum. This can be



viewed through an eye piece at the other end of the tube. Fully drawn-out length is 130mm. Supplied in a wooden box.

3372-00

## PERISCOPE

Periscopes, including this one, can help you see around barriers. But what if you want to see something behind you? Submarine periscope operators walk in circles, turning the whole periscope. Why not just rotate the top mirror? Try it with this rotating periscope, and you'll see that the image of everything behind you is upside-down! An elegant demonstration of basic plane mirror reflection, this is also a great way to test student understanding of image formation.



3364-20

## STROBOSCOPE, HAND DRIVEN, SIMPLE MODEL

For optically slowing or completely "stopping" any object in motion and for "measuring" the frequency of periodic motion.

Consists of a black metal disk of 250mm diameter with 12 evenly spaced radial slits extending to its edge, an axis hole for mounting a handle and a finger hole. Handle and mounting screw are included.

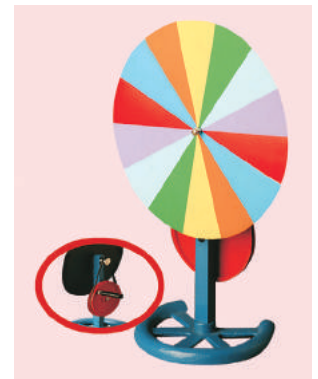
3374-00



## NEWTON'S COLOR DISC

Demonstrates that white light is composed of seven colors by rotating hand-driven wheel. Constructed of sturdy metal.

9496-02



## COLOR PADDLES

Demonstrate the principles of color mixing with this set of 6 clear colored plastic paddles.



Set of 6

9994-06

Set of 18

9994-18

## POWER SUPPLY FOR SPECTRUM DISCHARGE TUBES

Specially designed power supply to safely run spectrum discharge tubes of length approximately 26cm. Encased in a metal body. Spring loaded with clips to connect the tubes securely.

Cat. # 3376-00

## SPECTRUM DISCHARGE TUBES

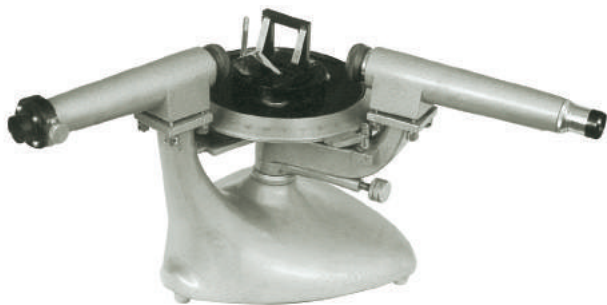
To show spectral lines of pure substances. Mercury and Helium tubes can be used as sources for experiments on the measurement of wave length of light. The gas pressure used results in well-defined emission spectra.

These are glass tubes about 26cm long, central capillary portion about 9-10cm long with electrodes sealed at both ends and connected to lead wires protected by metal caps. Provided with loops welded to caps for electrical connection. Needs an induction coil 5cm spark, or a suitable transformer. Except for Neon and Helium, these can not be used as lamps. Length of capillary portion can be varied as required. For intermittent use.



Type	Cat. No.
Air	3376-01
Argon gas	3376-02
Carbon Dioxide	3376-03
Chlorine gas	3376-04
Helium gas	3376-05
Hydrogen gas	3376-06
Iodine	3376-07
Krypton gas	3376-08
Mercury Vapor	3376-09
Neon gas	3376-10
Nitrogen gas	3376-11
Oxygen gas	3376-12
Water Vapor	3376-13
Xenon	3376-14
Bromine	3376-15

# LIGHT (OPTICS)



## SPECTROMETER, STUDENT

For introducing students to principal type of spectra, determination of wavelength, frequency of emitted light and for quantitative spectrometric measurement of angle of prism, refractive index of the prism material etc. Comprised of a cast base with an integral fixed pillar for the collimator support and a swinging telescopic arm. Both the collimator and the telescope are fitted with an axis adjustment system. The moving telescope arm with a spring loaded vernier moves smoothly over a machine engraved degree plate of diameter 180mm and is graduated  $0-360^\circ \times 1$ . The vernier reads to  $0.1^\circ$  or 6 seconds and allows students to estimate angular positions to  $0.05^\circ$ . Fine adjustment is provided. The collimator and the telescope tubes are fitted with optically coated achromatic objectives of diameter 25mm and have a concealed helical action focusing device. The 10X Ramsden eyepiece has a cross hair reticle. The prism table, diameter 75mm is levelled by three knurled knobs. It is fitted with a diffraction grating holder of aperture  $25 \times 25$ mm and a clamp for holding a prism up to 38mm high. Provided with a magnifying eye glass and a tommy bar for axis adjustment but without prism or diffraction grating. Supplied in a cardboard box.

3380-00

## DIFFRACTION GRATINGS

A replicate grating pressed between clear glass plates. Ideal for classroom demonstration.

Size 50mm x 50mm.

View area: 25mm x 25mm.

Lines/mm	Cat. No.
100	4309-01
300	4309-02
600	4309-03

Size 60mm x 45mm.

View area: 45mm x 30mm.

Lines/mm	Cat. No.
300	4309-04
600	4309-05
1200	4309-06



## DIFFRACTION GRATING SET

A demonstration slide consisting of three gratings with grating constants of 100, 300 and 600 lines/mm respectively. Each has an area of  $9 \times 16$ mm. They are mounted between plane parallel glass plates in a cardboard slide  $90 \times 30$ mm in size.

4309-15

## SPECTROMETER, ADVANCED

Similar to 3380-00 but with enhanced features for obtaining better quantitative results. Consists of a heavy cast base and a pillar for collimator support. The telescope arm moves along a fixed circular plate 150mm diameter graduated in degrees. This plate has a double ended vernier for better and accurate measurements, with a least count of  $30''$ . Fine adjustment is accomplished by using a knob while the coarse adjustment can be done by hand. Both the collimator and the telescope are mounted with an axis adjustment system. The telescope has a 10X Ramsden eyepiece and is fitted with a cross hair reticle. Both the telescope and the collimator are fitted with coated achromatic objectives of 178mm focal length and 32mm diameter, providing light for a brighter and sharper image. The focussing is done by a concealed rack and pinion. The collimator slit 6mm long, is specially designed for retention of initial accuracy during the life of the instrument. The prism table 75mm diameter is held with the help of a clamping screw enabling the table to be rotated in any direction. It has lines and concentric rings marked to assist positioning of prism in relation to levelling screws. It is fitted with a diffraction grating holder of aperture  $25 \times 25$ mm and a clamp for holding prisms upto 38mm high.

Provided with a magnifying eye glass to read the vernier, tommy bar for axis adjustment and flannel cloth. Supplied in a wooden box.



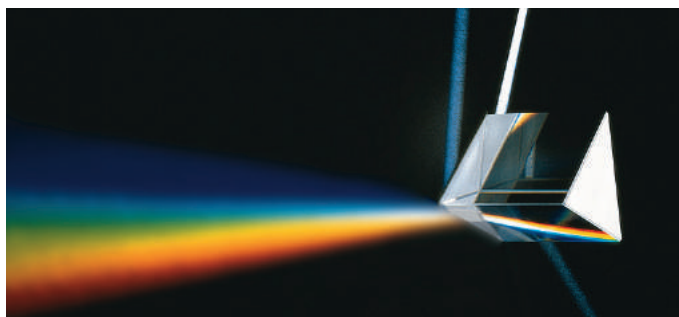
3381-00

## SPECTROMETER PRISM, EQUILATERAL, GLASS

An important accessory for college level spectrometry work.

Dimensions: (face x height),  $32 \times 32$ mm. Individually packed.

Crown Glass	R.I. - 1.52	3384-02
Dense Flint Glass	R.I. - 1.65	3384-01

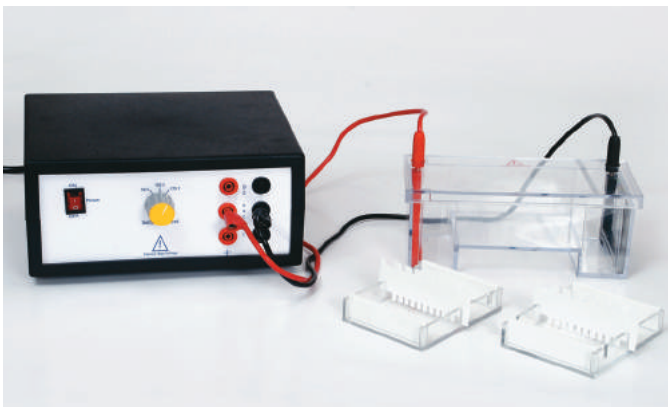




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# MECHANICS

## MASS SET, HEXAGONAL

For general science and physics laboratory work.

All are made of stove enamelled cast iron masses except the 10g and 20g masses which are made of polished brass. Packed in a cardboard box.

Set of 5 masses: one each of 50g,100g, 200g, 500g and 1000g

3402-05

Set of 7 masses: one each of 10g, 20g, 50g,100g, 200g, 500g and 1000g

3402-07

Set of 9 masses: one each of 10g, 50g, 100g, 500g and 1000g and two each of 20g and 200g.

3402-09



## MASSES, HEXAGONAL, SPARE

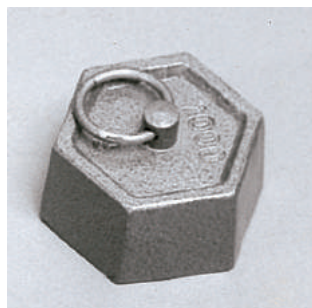
Same as above but sold separately.

Masses	Cat. No.
10g	3403-01
20g	3403-02
50g	3403-03
100g	3403-04
200g	3403-05
500g	3403-06
1000g	3403-07

## MASS WITH RING

Hexagonal cast iron weights with lifting ring.

100g	3403-25
200g	3403-26
500g	3403-27
1000g	3403-28
2000g	3403-29



## MASS SET CYLINDRICAL, WITH HOOK, SET OF NINE

For general science and physics laboratory work.

Supplied in a plastic block. Includes one each of 10g, 50g,100g, two each of 20g, and 200g, (all made of plated brass) and one each of 500g and 1000g (both made of cast iron, enamelled finish).

3406-00



## MASSES WITH HOOKS, SPARE

As included in the above set.

Masses	Cat. No.
10g	3406-01
20g	3406-02
50g	3406-03
100g	3406-04
200g	3406-05
500g	3406-06
1000g	3406-07

## MASS SET ON FLAT BASE

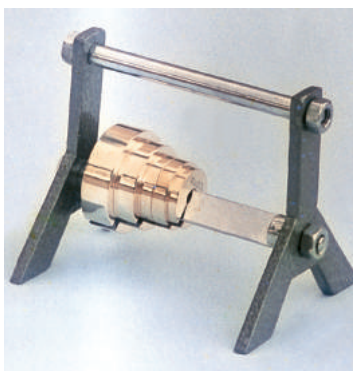
A combination of Steel and brass weights, for weighing objects from 10g upto 1990g in 10g increments. Comprises of 1 each of 1000g, 500g, 200g,50g,20g and 2 each of 100g and 10g. Supplied on plastic tray.

3406-70



## SLOTTED MASSES ON A RACK, BRASS, METRIC

Useful where a known force must be exact as in experiments on force table, moments, and sonometer.



Made from brass. Each mass is stamped with its value. Provided with side supports and nuts for easy assembly. Set of 3 masses: 10g, 50g, and 500g

3410-03

Set of 8 masses: 10g, 20g (2), 50g, 100g, 200g (2), 500g

3410-08

Set of 11 masses: 1g, 2g (2), 10g, 20g (2), 50g, 100g, 200g (2), 500g

3410-11

## SLOTTED MASSES (WEIGHTS) ON A RACK, BRASS, CALIBRATED IN NEWTONS

Identical to the metric mass set described above. Set of 11 masses: 0.1 N(5), 1 N(4), 0.5N, 5N

3410-21

## HANGER, 50g

For hanging slotted masses described in 3410-03, 3410-08 and 3410-11. Made of brass.

3411-50



## SLOTTED WEIGHT SET BRASS WITH HANGER

Each set contains 9 Weights and 1 Hanger

Range	Cat. No.
10g x 9 + 10g Hanger	3411-10
20g x 9 + 20g Hanger	3411-11
50g x 9 + 50g Hanger	3411-12
100g x 9 + 100g Hanger	3411-13



## SLOTTED WEIGHT SET 250G BRASS WITH HANGER

Consists of 2 x 5g, 3 x 10g, 3 x 20g, 2 x 50g and 1 Hanger of 50g

3411-00

## SLOTTED MASSES, SPARE

For slotted masses on rack and 50g hanger. Made of brass with standard slots as supplied on racks.



Mass	Cat. No.
1g	3412-01
2g	3412-02
5g	3412-03
10g	3412-04
20g	3412-05
50g	3412-06
100g	3412-07
200g	3412-08
500g	3412-09

## WEIGHT BOXES, GENERAL PURPOSE

For general laboratory work.

Include one of 1g, 5g, 10g, 50g, 100g, 500g, 1000g and two of 2g, 20g and 200g masses. Total number of masses supplied depends on the range chosen as indicated below.

Plated brass weights (masses) with knob in a wooden case having a hinged lid. Calibrated according to tolerances specified by International Organisation for Legal Metrology, Class M2. Fractional weights are not included.



Range	Number of masses	Cat No.
1-50g	8	3416-08
1-100g	9	3416-09
1-200g	10	3416-10
1-500g	12	3416-12
1-1000g	13	3416-13

Note: we can substitute two 10g masses with one 20g mass and two 50g masses with one 100g mass according to your requirement. We can quote and accept order for other combinations of masses.

# MECHANICS

## WEIGHTS (MASSES) FOR WEIGHT BOXES, SPARE

For above weight boxes

Masses	Cat. No. 10g
1g	3416-31
2g	3416-32
5g	3416-33
10g	3416-34
20g	3416-35
50g	3416-36
100g	3416-37
200g	3416-38
500g	3416-39
1000g	3416-40



## FRACTIONAL WEIGHT

Fractional Weights : 500mg, 200mg and 100mg are made of Stainless Steel : Type-304 and 50mg, 20mg, 10mg, 5mg, 2mg and 1mg are made out of Aluminium foils. They are smooth and free from irregularities to retain cleanliness and accuracy.



3416-50

## MASSES WITH HOOKS ON BOTH SIDES

Made of plated brass.

Masses	Cat. No.
1g	3422-01
2g	3422-02
5g	3422-03
10g	3422-04
20g	3422-05
50g	3422-07
100g	3422-08



Note: Masses of this type upto 2kg can be supplied.

## VERNIER CALIPER, DUAL SCALE

For inside and outside measurement in metric or English units. Ideal for learning precision measurement techniques by using the vernier principle.

Has metric scale to 12.5cm in 1 mm steps and the 10 part vernier reads to 0.1mm.

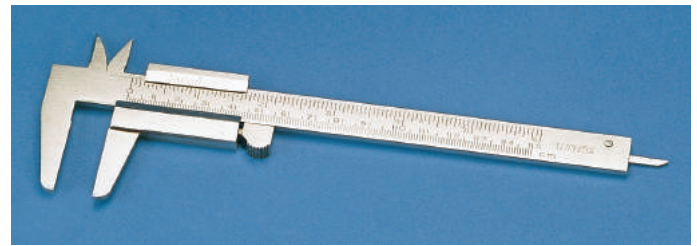


English scale

is graduated to 5in in 1/16in divisions and the 8 part vernier reads to 1/128in. Features a locking pin to secure readings and knurled thumbwheel permits fast, easy measuring. Beveled cross horns are useful for internal measurements. Made of plated steel and packed in a plastic case.

3430-00

## VERNIER CALIPER, DUAL SCALE, IMPROVED DESIGN



For inside, outside, step and depth measurement.

Has metric scale to 15cm in 1mm steps and the 10 part vernier reads to 0.1mm least count. English scale is graduated to 6in in 1/16in divisions and the 8 part vernier reads to 1/128in least count. Verniers are adjustable and can be trued, if desired. Automatic cam locking device allows fine adjustment along the main scale. Made of plated steel and packed in plastic case.

3431 -00

## CALIPERS, DIRECT READING (GRAIN CALIPERS), DUAL RANGE

Two piece brass construction. Reads by vernier to 0.1 mm (1/128in).



Measuring range	Cat. No.
0-75 x 1 mm (0-3 x 1/16 in)	3433-01
0-100 x 1 mm (0-4 x 1/16 in)	3433-02

## VERNIER MICROSCOPE

Vernier microscope (Traveling microscope) has horizontal and vertical scales of stainless metal. The heavy cast iron base is fitted with leveling screws with the top duly machined over which slides a metal carriage. The slide can be clamped at any position by means of clamping screw. Fine adjustment for final reading is with a micrometer screw. A vertical slide operating in a similar way is fitted on the horizontal carriage. The microscope with rack and pinion is fitted on this vertical carriage and can be clamped in a vertical or horizontal position. The stage for placing objects for measurement is fitted with an acrylic plate. Achromatic lenses have been used. The slides travel 165 mm horizontally and 140 mm vertically. Vernier reading 0.01mm. The unit is packed in a wooden case.

3430-51



## METER SCALE

Made of Hard wood, with both edges divided in mm and numbered every 10mm.

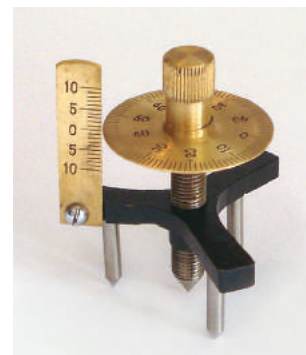
Length	Cat. No.
50cm	3436-70
100cm	3437-80
100cm (with brass end)	3437-82



## SPHEROMETER

Consists of 40mm dial head, divided in 100 parts registering on a vertical scale of 10-0-10mm. Screw pitch 0.5mm

3436-50



## MICROMETER CALIPERS (MICROMETER SCREW GAUGES), METRIC & ENGLISH

For measurement of small outside diameter, thickness etc. Ideal for engineering and technical schools to teach the working of this instrument.

Consists of a frame of solid brass body with a chrome satin finish and a hardened steel screw. Provided with a ratchet and a locknut for accurate readings. Zero adjustment is possible. Pitch of the screw is 0.5mm and the least count is 0.01mm. Micrometers with English scale has pitch of 0.05in and the least count of 0.001in. Packed in a plastic case.



Measuring range	Cat. No.
0-25mm	3436-01
0-25mm (in wooden box)	3436-02
0-1in	3436-03
0-1in (in wooden box)	3436-04

## LEVER BALANCE, BUCHART TYPE

For quick and rough weighing. It has a dual scale 0-250g in 1g and 0-1000g in 5g. The zero setting is with the levelling screw

6454-22



# MECHANICS

## PULL SPRING SCALES (SPRING BALANCES), METRIC, NEWTON & DUAL SCALE

For determining weights by spring elongation which is proportional to the applied force. For laboratory use. Made of strong polystyrene with a flat anodized metal scale. Provided with a zero adjuster, suspension ring and a load hook.



Metric: Capacity	Readability	Cat. No.
100g	2g	3439-01
200g	4g	3439-02
250g	5g	3439-03
500g	10g	3439-04
1000g	20g	3439-05
2000g	40g	3439-06

Newton: Capacity	Readability	Cat. No.
1N	0.02N	3439-11
2N	0.04N	3439-12
2.5N	0.05N	3439-13
5N	0.10N	3439-14
10N	0.20N	3439-15
20N	0.40N	3439-16

Metric and Newton, dual scale One edge of the scale is calibrated in newtons (N) and the other in grams (g).

Capacity N(g)	Readability N(g)	Cat. No.
1/102	0.02/2	3439-21
2/204	0.04/2	3439-22
2.5/250	0.05/5	3439-23
5/510	0.10/2	3439-24
10/1020	0.20/2	3439-25
20/2040	0.40/2	3439-26

## TUBULAR SPRING SCALES

Dual scale spring scale to measure force (Newton) and mass (grams). Clear acrylic body. Easy zero adjustment and color code.

Colour	Scales	Cat. No.
Beige	100g/1N	3439-58
Blue	250g/2.5N	3439-60
Green	500g/5N	3439-62
Brown	1000g/10N	3439-64
Red	2000g/20N	3439-66
White	3000g/30N	3439-68
Yellow	5000g/50N	3439-70



## CAPILLARY TUBE SET (COMMUNICATING CAPILLARIES)

For demonstrating that capillary rise is dependent upon the inner diameter of a tube. Proves that the molecules of a liquid are more attracted to glass than to other liquid molecules.

Consists of four glass capillary tubes of different inner diameters with a large tube serving as reservoir. Mounted on a stand. Height of the tubes is about 15cm.

3447-00



## EQUILIBRIUM TUBES (CONSTANT LEVEL TUBES, COMMUNICATING VESSELS)

For showing that liquid levels are independent of shapes of the containing vessel and liquid will rise to the same level in the vessel, regardless of its shape.

Consists of a reservoir and three tubes of borosilicate glass of same internal diameter but different shapes. Mounted on a stand.

3448-00



## VENTURI APPARATUS

For demonstrating Bernoulli's principle that any restriction in fluid flow results in increased speed and decreased pressure.

Comprised of borosilicate glass tube 18cm (7in) long and 18mm ( $\frac{3}{4}$ in) in diameter with a constriction in the centre and three vertical openings in different sections. Includes three glass manometer tubes and rubber connecting tubes for measuring pressure at three locations. Ends are flared.

3450-00

Note: Venturi tubes of other dimensions and specific wall thickness can be supplied.



## HOOK COLLARS

For suspending spring balances, cords, pendulums and other apparatus from support rods or cross members.



These metal collars are fitted with thumbscrews.

Hook i.d.	13mm	19mm
Cat. No.	3458-01	3458-02

## HOOKE'S LAW APPARATUS

For proving Hooke's Law of Elasticity, i.e. that elongation of an object is directly proportional to the load applied and demonstrating the phenomenon of simple harmonic motion of a vibrating weight, potential energy etc. Consists of an adjustable mirrored scale 15cm long, graduated in millimeters, mounted on a support rod 30cm long fitted on a base. A hook attached to the rod supports a spring and indicator. Provided with a 50g brass hanger. Required slotted weights can be ordered separately.



3453-00

## SPRINGS, EXTENSION STEEL

For demonstration of Hooke's Law and use with Hooke's Law Apparatus.

Closely wound springs of diameter 6mm with loops at both ends. Made of 26SWG wire. Average extension for a 250g load are indicated below. Springs with specific elongations can also be supplied.

Spring length	Net extension	Cat No.
100mm	140mm	3455-01
150mm	250mm	3455-02
220mm	340mm	3455-03



## PLUMB BOB

Made from hexagonal steel rod by carefully machine turning to a sharpened point. Dimensions are approx. (1 x d), 85 x 20mm ( $3\frac{1}{3}$  x  $\frac{25}{32}$  in) and weight approx. 140g. Provided with a screwed end cap with a hole to receive a cord.

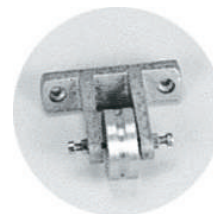


3460-00

## PULLEY, FIXED, FOR MOUNTING ON PLANE SURFACE

Suitable for experiments involving inclined plane where mounting on plane surfaces is required.

Consists of a pulley, diameter 37mm mounted in bracket having two fixing holes for screwing on to a surface. Both parts are made of aluminium.



3464-00

## PULLEY, SINGLE, CLAMP TYPE, BENCH MOUNTING

For clamping on bench tops or boards.

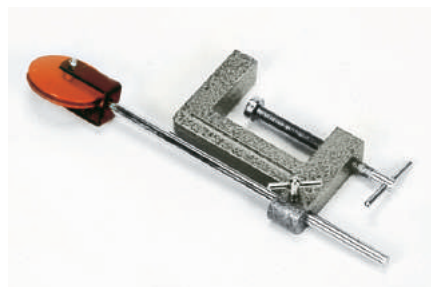
Aluminium pulley, diameter 50mm with V-groove, is mounted on a frictionless cone bearing and fitted on a frame with clamp for fixing to any surface upto 25mm thick with a thumbscrew. Enamelled finish.



3465-00

## PULLEY WITH TABLE CLAMP

Useful for experiments in which a pulley needs to be supported at various heights and angles. Pulley can be removed and used separately. Designed for clamping to table edges up to 45mm thick with a thumbscrew and for supporting a 50mm diameter pulley and rod. Pulley adjusts to 10cm height (minimum) and rotates a full 360°



3467-00



## FORCE TABLE

For performing static force experiments in mechanics such as studying the condition of static equilibrium of a rigid body under the action of forces in a common plane i.e. for the verification of the laws of composition and resolution of forces. Can also be turned into a teaching spectrometer by using appropriate collimator assembly, telescope and a support for prism and grating.

Comprised of an accurately machined aluminium table 40cm in diameter graduated in  $360^\circ$  on its rim. Mounted on a heavy vertical support rod and tripod base fitted with levelling screws. Body under study is a ring in the centre of the table fastened by strings passing over four low friction pulleys attached with the table. Provided with four weight hangers of 50g each and four sets of brass slotted weights (each set consists of the masses: 2 x 10g, 2 x 20g, 4 x 50g, 4 x 100g).

3462-00

## PULLEY WITH ROD

For applications where a pulley is to be supported at various heights and angles. Specially suited for inclined plane experiment. A plastic pulley, diameter 50mm is mounted on a metal frame attached to a plated rod about 10mm in diameter and 15cm long.



3466-00



## FORCE TABLE, ECONOMY MODEL

Similar to our Force Table 3462-00 but with a lighter base and support. The top is made of compressed particleboard. Includes 4 weight hangers of 50g and slotted weights 2x10g, 2x20g, 4x50g, and 4x100g. The pulleys and the clamps are of plastic. Other accessories are as per 3462-00 model.

3462-01

## PULLEY, SINGLE, WITH THREE-WAY ATTACHMENT

For clamping to vertical or horizontal rods and to laboratory tables, boards etc.

Comprised of a specially designed cast bracket which can be clamped on flat surface 38mm thick and hold a supporting rod 13mm diameter. At the rear of the bracket, a light alloy pulley about 70mm diameter is mounted on brass bearings. Includes two clamping screws for fitting to bench and vertical rod support. Hammertone stove enamel finish.



3468-00



## PULLEYS, PLASTIC

Made of rigid colored plastic with deep V-grooves. Balanced for free movement. Pulleys are about 50mm in diameter and are mounted in parallel mode on aluminium strips with hooks at both ends.



## PULLEY, ALUMINIUM, TANDEM, DOUBLE

Two pulleys 50mm and 37mm, with V-grooves, mounted in aluminium frame with a hook at the ends.

3474-14

## PULLEY, ALUMINIUM, TANDEM, TRIPLE

Three pulleys 50mm, 37mm and 25mm diameters with V-grooves mounted in an aluminium frame with a hook at the ends.

3474-15

## PULLEY PLASTIC WITH BEARINGS

These plastic pulleys have ball races mounted on a metal frame for smooth running.

Type	Single	Double	Triple	Quadruple
Cat. No.	3470-01	3470-02	3470-03	3470-04

Type	Cat. No.
Single with hook	3470-20
Double with hook	3470-21
Triple with hook	3470-22
Double in tandem with 2 hooks	3470-23
Triple in tandem with 2 hooks	3470-24

## PULLEY, PLASTIC, TANDEM, DOUBLE

Made of rigid colored plastic with deep V-grooves. Balanced for free movement. Pulleys are about 50mm and 37mm in diameter and are mounted in tandem mode on aluminium strips with hooks at both ends.

3470-05

## PULLEY PLASTIC, TANDEM TRIPLE

Made of rigid colored plastic with deep V-grooves. Balanced for free movement. Pulleys are about 50mm, 37mm and 25mm in diameter and are mounted in tandem mode on aluminium strips with hooks at both ends.

3470-06



## PULLEYS, ALUMINIUM

Pulleys with deep V-grooves are balanced for free movement. Mounted on aluminium frame with hooks at both ends. Diameter 50mm.

Type	Cat. No.
Single	3474-01
Double parallel	3474-02
Triple parallel	3474-03



# MECHANICS

## PULLEY DEMONSTRATION SET

For demonstrating and performing quantitative experiments on fixed and moveable pulleys, trains of fixed and moveable pulleys, the wheel and axle and the capstan etc. Helps understand the concepts of the mechanical advantage, the efficiency of fixed and moveable pulleys, etc.

Comprised of a rectangular laminated wooden base about (1 x d), 20 x 82cm which supports two threaded rods measuring approximately 12.5mm x 81cm in metal flanges and is fitted with a capstan and a screw eye.

Eight clamps (hook collars) are provided for suspending pulleys and cords on an adjustable cross rod approximately 12.5mm x 81cm, held by right-angle clamps.

Supplied with:

- 8 single pulleys
  - 2 triple tandem pulleys
  - 2 quadruple pulleys
  - 1 wheel and axle
  - 7 weight hangers (5 of 50g and 1 each of 10g and 20g)
  - 15 slotted weights (2 each of 10g, 20g, and 50g, 4 each of 100g and 200g and 1 of 500g)
  - 3 right-angle clamps
  - 1 spool of cord
  - 1 tommy bar to tighten the vertical rods and instruction manual
- Rods, pulley and clamps are made of either plated metal or polished aluminium. Slotted weights and weight hangers are made of brass.
- 3472-05



## PULLEY SET, STUDENT

Basically similar to the pulley set described above.

Comprised of a rectangular laminated wooden base approx. 12.5 x 15cm which supports a threaded rod measuring about 12.5mm x 61 cm in a metal flange, fitted with a capstan and a screw eye.

Six clamps (hook collars) are provided for suspending pulleys and cords on an adjustable cross rod approx. 9.5mm x 20cm, held by a right-angle clamp.

Supplied with:

- 8 single pulleys
  - 2 double sheave pulleys
  - 1 wheel and axle
  - 7 weight hangers (5 of 50g and 1 each of 10g and 20g)
  - 9 slotted weights (1 of 10g, 2 of 20g, 1 of 100g, 1 of 500g and 1 of 1000g)
  - 1 right-angle clamp
  - 1 spool of cord
  - 1 tommy bar to tighten the vertical rod and instruction manual.
- Rods, pulley and clamps are made of either plated metal or polished aluminium. Slotted weights and weight hangers are made of brass.

3472-10



## SOLID MATERIAL KIT

To familiarize the pupils with density, hardness, appearance and texture of common materials. The kit comprises of the following different materials in various sizes.



Two each of

Brass 20 x 20 x 50mm

Perspex, glass, slate, aluminum, softwood and marble 20x20x100mm

Iron 40 x 40 x 20mm

Softwood, hardwood, paraffin wax, aluminum, iron and foamed polystyrene 50 x 40 x 30mm

Aluminum 50 x 50 x 80mm

Hardwood 50 x 50 x 200mm

Lead 50 x 50 x 20mm

3473-00

## METAL DISC SET, 25MM, SET OF 8

Metal discs, 25 mm diameter, packed together in a small zip bag. Sent with silica gel to help prevent rust. Contains one each of brass, zinc, bronze, stainless-steel, copper, mild-steel, nickel-silver, and aluminum.

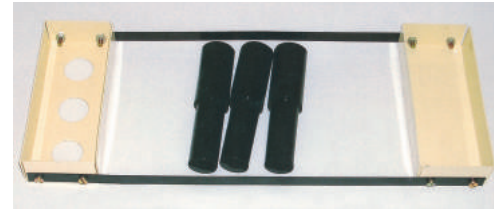


Type	Cat. No.
Stamped	3473-91
Un-stamped	3473-92

## INERTIA BALANCE KIT

For measuring inertial masses and qualitatively understanding the terms, mass and weight. This principle can be used to determine mass under weightless conditions in space flights.

The apparatus consist of two aluminium trays joined together by a pair of spring steel strips attached to their sides. Trays are about 200mm apart. One of the trays (the oscillating tray) is drilled to hold three equal cylindrical masses and the other tray acting as an anchorage is clamped by a C-clamp to a bench. Supplied with three masses and a cord (does not include a C-clamp).



3478-00

## RING AND DISK (MOMENT OF INERTIA APPARATUS)

For studying the dependence of moment of inertia on the distribution of mass, by rolling down a metal ring and wooden disk of the same mass and diameter on an inclined plane or rolling them on a level surface with the same initial impulse. Comprised of a metal ring and a wooden disk of diameter 15cm, thickness 5cm and same mass. When these are rolled down on an inclined plane on a level surface with the same initial impulse, the difference in acceleration can be studied.



3479-00

## HALLS CARRIAGE

This sturdy carriage has a one piece, high-impact plastic body. The machined aluminum wheels and axles are mounted on hardened steel cone bearings for minimum friction and long life.

8211-11



# MECHANICS

## INCLINED PLANE

For determination of the coefficient of kinematic and static friction, mechanical advantage and efficiency of an inclined plane etc.

Comprised of a hardwood inclined plane (l x w), 600 x 100mm fitted with a pulley of diameter 22mm at the free end. It is hinged to a horizontal polished wooden base (l x w), 450 x 100mm, which is fitted with an aluminium arc graduated both vertically and angularly. The inclined plane can be fixed at any angle up to 45° or at a suitable height with a clamping wing nut. Supplied with a cylindrical plated metal roller, two wooden blocks (l x w), 200 x 75mm and 100 x 75mm, a scale pan diameter 75mm, cord and hook.

3481-00



## BICYCLE WHEEL GYROSCOPE

Dramatically demonstrate angular momentum.

Spin this solid rubber bicycle wheel, hold the handles, and try to change its axis of rotation. The faster it spins, the harder it is to tip over! Stand on a Rotating Platform to experiment with gyroscopic precession and learn how satellites steer. Wheel diameter 60 cm.

3479-50



## BALLS, SOLID, HOOKED, DRILLED, SPARE

For physics experiments and demonstrations such as density and volume measurements, pendulum bob, potential energy and conservation experiments, ballistics etc

### SOLID BALLS

Material	Dia 19mm	Dia 25mm
	Cat. No.	Cat. No.
Aluminium	3484-01	3484-21
Brass	3484-02	3484-22
Copper	3484-03	3484-23
Iron	3484-04	3484-24
Lead	3484-05	3484-25
Zinc	3484-06	3484-26
Wood	3484-07	3484-27

### SOLID BALLS WITH HOOK

Material	Dia 19mm	Dia 25mm
	Cat. No.	Cat. No.
Aluminium	3486-01	3486-21
Brass	3486-02	3486-22
Copper	3486-03	3486-23
Iron	3486-04	3486-24
Lead	3486-05	3486-25
Zinc	3486-06	3486-26
Wood	3486-07	3486-27

### SOLID BALLS, DRILLED THROUGH

Material	Dia 19mm	Dia 25mm
	Cat. No.	Cat. No.
Aluminium	3488-01	3488-21
Brass	3488-02	3488-22
Copper	3488-03	3488-23
Iron	3488-04	3488-24
Lead	3488-05	3488-25
Zinc	3488-06	3488-26
Wood	3488-07	3488-27



## BALLS, SOLID, SETS

Set of 14 balls. Two each of: aluminium, brass, copper, iron, lead, zinc and wood. Packed in a sturdy cardboard box.

Diameter	Cat. No.
19mm	3484-10
25mm	3484-30

## BALLS, WITH BRASS HOOK, SETS

Set of 14 balls. Two each of: aluminium, brass, copper, iron, lead, zinc and wood. Packed in a sturdy cardboard box.

Diameter	Cat. No.
19mm	3486-10
25mm	3486-30

## BALLS, WITH BRASS HOOK, SETS

Set of 6 balls. One each of: aluminium, brass, copper, iron, lead and zinc. Packed in a sturdy cardboard box.

Diameter	Cat. No.
19mm	3486-15
25mm	3486-16

## BALLS, DRILLED WITH HOLE, SETS

Set of 14 balls. Two each of: aluminium, brass, copper, iron, lead, zinc and wood. Packed in a sturdy cardboard box.

Diameter	Cat. No.
19mm	3488-10
25mm	3488-30

## PENDULUM BOB

For various applications in a physics laboratory.

A cast iron ball of 79mm diameter with two hooks on opposite ends. Enamel finish.

3497-02



## DENSITY BALL

For demonstrating the effect of temperature on the density of a liquid. Consists of a copper ball about 75mm diameter, properly loaded so that its density is less than that of water and it floats. When the water is heated its density reduces and the ball sinks.

3501-00



## SPECIFIC GRAVITY BOTTLES, UNCALIBRATED

Also called Density Bottles or R.D. Bottles. Recommended for comparison purposes. Also for experience in calibration work.

Each bottle has a perforated stopper (about 1 mm bore) and a ground mouth for a proper fit. Made of borosilicate glass.



Capacity	10mL	25mL	50mL	100mL
Cat. No.	3505-01	3505-02	3505-03	3505-04

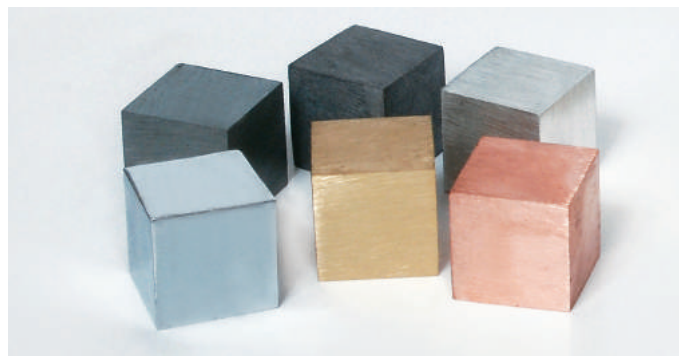
## CUBE, VARIOUS NON-METAL, SIDE 20mm

Type	Wood	Acrylic	Marble
Cat. No.	3508-01	3508-02	3508-03

## CUBES OF SIX METALS, SETS

Includes one cube each of aluminium, brass, copper, iron, lead, and zinc without hook. Packed in a cardboard box.

Cube Side	10mm	20mm	25mm	32mm
Cat. No.	3510-01	3510-02	3510-03	3510-04



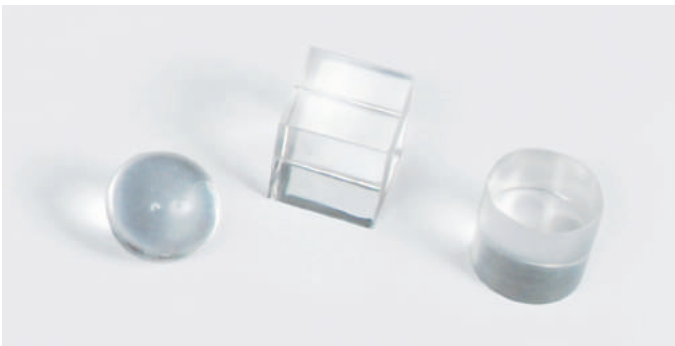
# MECHANICS

## CUBES, VARIOUS METALS, SIDE 10 AND 20mm

Material	Side 10mm	Side 20mm
	Cat. No.	Cat. No.
Aluminium	3510-11	3510-21
Brass	3510-12	3510-22
Copper	3510-13	3510-23
Iron	3510-14	3510-24
Lead	3510-15	3510-25
Zinc	3510-16	3510-26

## CUBES, CYLINDERS AND BALLS, ACRYLIC

Made of clear acrylic .



	Cat. No.
Cubes, Side 25mm	3515-00
Ball, Diameter 25mm	3516-00
Cylinder, Diameter x height, 25 x 25mm	3517-00

## SPECIFIC GRAVITY BLOCK WITH HOOK

For showing that specific gravity depends on the nature of the material being tested.

These cubes are carefully machined to 32mm on each side. Provided with a brass hook.



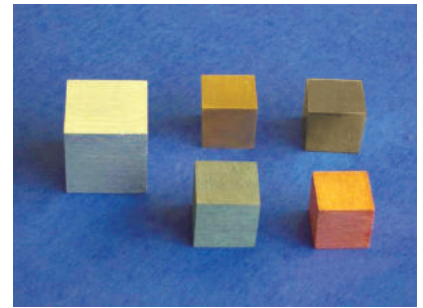
Material	Cat. No.
Aluminium	3520-01
Brass	3520-02
Iron	3520-03
Lead	3520-04
Copper	3520-05
Zinc	3520-06

## EQUAL MASS CUBE SET/5

Cube set includes 20g mass each of aluminum, brass, copper, iron and zinc.

Demonstrate inverse relationship between density and volume of equal mass metal cube

3523-02



## DENSITY CYLINDER SET (EQUAL MASS)

To prove the inverse relationship between density and length of cylinders of equal mass and diameter.

This set consists, of one each of machine turned cylinders of diameter 12.5mm, of equal masses, approx. 50g, of metals aluminium, lead, copper, brass, and zinc having the same diameter. Packed in a cardboard box.

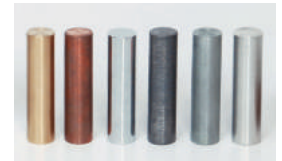
3523-00



Note: Similar density cylinders made of materials like nylon, polyvinyl chloride & polyethylene can also be supplied.

## CYLINDER SET, METALS

Set of six cylinders of aluminium, brass, copper, iron, lead and zinc. Packed in a cardboard box.

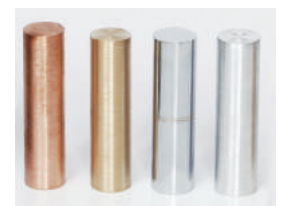


d x h	10 x 30mm	10 x 40mm
Cat. No.	3525-01	3525-02

## CYLINDER SET, METALS

Set of four cylinders of (d x h), 50mm x 13mm, one each of aluminium, brass, copper, and steel. Packed in a cardboard box.

3528-00



## CYLINDER FOR DENSITY DETERMINATION, ALUMINIUM

The cylinder measures 75mm long x 25mm diameter with a suspension hook.

3530-00



## BUCKET AND CYLINDER (ARCHIMEDES PRINCIPLE SET)

To demonstrate that a body submerged in water loses weight equal to the volume of water it displaces.

Consists of two brass pieces of equal volume. A solid cylinder 60mm long with a suspension hook at one end and a close fitting hollow bucket with a suspension loop at one end and a hook (handle) at the other end. Overall extended length is about 160mm.

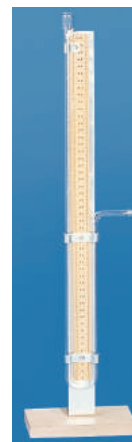
3534-00



## OPEN MANOMETER

A multiple-use manometer for accurate measurement of gas pressure. Consists of a borosilicate glass manometer tube with a 50cm arm having funnel top and a 26cm arm with riffle for easy connection to rubber tubing. Mounted on a wooden board fixed over a metal stand.

3542-00



## OVERFLOW CAN

For determining the volume of an irregularly shaped body when used in conjunction with a catch bucket. Suitable for density cylinders, sinkers and Archimedes principle devices. Made of Aluminium. The spout is properly angled to accurately measure displaced liquid. Hammer tone finished.



## PRESSURE SYRINGE (EQUAL TRANSMISSION OF FLUID PRESSURE APPARATUS)

Demonstrates that liquid pressure is transmitted equally in all directions. Consists of a borosilicate glass bulb, of 50mm diameter with holes, fitted with a piston for compressing liquids. Total height about 250mm.

3544-00



d x h	Cat. No.
65 x 120mm	3536-01
125 x 225mm	3536-02

## OVER FLOW CAN, GLASS

For easy viewing of the experiment. Made of borosilicate glass with capacity of 500mL

3536-10



## ANEROID BAROMETER, WALL MOUNTING

With 100mm dia, graduated 960-1065 x 1hPa with a reset pointer.

3548-55



## ANEROID BAROMETER, DEMONSTRATION MODEL

It is housed in a transparent plastic case, allowing the action to be demonstrated with the help of a rubber bellow. The dial is 100mm diameter.

3548-60



## DEMONSTRATION MANOMETER

For measuring the pressure of gases. Suitable for moderate pressures.

Consists of a borosilicate glass U-tube, diameter 25mm and 50cm high, open at both ends. Has one riffled arm for easy connection to rubber tubing. Mounted on a wooden board fixed on a metal stand. A metric scale is fitted between the arms of the tube. It is recommended to use colored water for greater visibility in a lecture hall.

3540-00



## PRESSURE GAUGE

Bourdon gauge on stand with tubulure for connection. Transparent back.

3448-30



# MECHANICS

## BOYLE'S LAW APPARATUS

Apparatus for the recording of pressure verses volumes and for investigating Boyle's Law.

The vertical tube is part – filled with the colored liquid and sealed. The trapped air is then compressed progressively, with pressure (p) and volume (v) readings taken at each stage. Before each pair of readings is taken, the liquid should be allowed to settle so that the heat caused by the compressions is dissipated.

The air is trapped in a long, graduated vertical tube. This scale is in arbitrary units.

These can be taken as indicating the volume of the trapped air.

Pressure is applied by using a bicycle pump (or similar) and can be read off the gauge provide.

This gauge is calibrated

in both kg/cm and p.s.i. A reservoir under the gauge ensures that the pressure reaching the trapped air does not fluctuate too violently.

The vertical tube will withstand the pressures required for the demonstration. However replacement of the bicycle pump with a foot pump might result in pressures greater than the apparatus can stand.

3548-21

## BOYLE'S LAW APPARATUS

For obtaining precise readings of volume of a gas for a range of pressures.

The apparatus consists of two borosilicate glass tubes, closed at the top and joined by rubber pressure tubing at the lower open ends. Both tubes are mounted on a sliding bracket which can be locked at any position on a two-rod frame, fitted on a wooden board. A meter stick graduated from 0-100cm x 1mm and figured every centimeter on both sides is fixed in the centre of the board. Provided with enamelled finished cast base with levelling screws. Supplied without mercury.

3548-00



## BOYLE'S LAW APPARATUS

(Elasticity Of Gases)

For experimentation with the elastic properties of a measured quantity of gas enclosed in an air tight syringe.

3548-11



## KINETIC THEORY MODEL

This apparatus gives an excellent visual demonstration of a difficult concept; it shows a qualitative representation of the behavior of a gas as its molecules gain energy. The kinetic theory model also allows the illustration of various aspects of the kinetic theory of gases.

Operating Voltage: 6 to 12V  
Dimension: 190 x 190 x 530mm

3548-60



## FORTINS BAROMETER

Has a dual scale of 640-810mm and 25-32 inches with least count of 0.05mm and 0.002 inches respectively. It is suitable for altitudes upto 600 m. The mercury cistern has a adjusting screw and fiucial setting point. Supplied w/o mercury

3548-51



## GUINEA AND FEATHER APPARATUS (FREE FALL IN VACUUM APPARATUS)

For demonstrating that heavy or light objects fall at the same rate in a vacuum. Made of a transparent tube (d x h), 100cm x 37mm, with rubber end caps, one of which has a nozzle and stopcock for connecting to a vacuum pump (not included). Provided with a simulated coin and a feather.

3550-00





## LEVER KIT

Consist of 5 wooden beams 600 x 44mm and marked every 38mm. Each beam has a groove across the center to indicate the fulcrum point. Also included are 4 wooden fulcrums and 40 square metal blanks of 25mm side.



3550-25

## BAR BREAKING APPARATUS

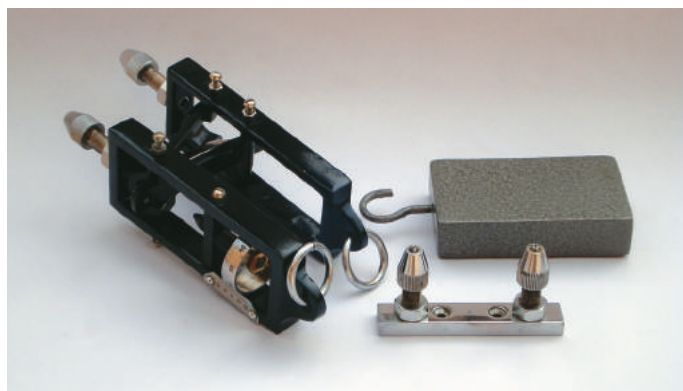
A heavy cast iron frame with slotted end pillar to carry a thick steel bar. This bar is threaded at one end for large tensioning nut. I also has hole at other end to accommodate a cast iron breaking bar. Supplied with 6 breaking bars.



3550-35

**YOUNGS MODULUS** Consists of a spirit level mounted across 2 pillars, with one end resting on the point of a micrometer screw. The pillars are supported by steel wires by means of two ceiling brackets. The micrometer has a vernier scale 5mm on either side of zero. Accurate upto 0.01mm

3550-70



## LEVER CLAMP (KNIFE EDGE CLAMP)

For fitting standard meter sticks used in setting up a demonstration balance to study principles of levers, moments, torque etc.. Made of spot welded steel. Designed for fastening to meter sticks by means of knurled set screw and easy viewing of the meter stick. Provided with a removable metal wire stirrup which serves as a weight hanger when placed in an inverted position.



3552-00

## C-CLAMPS

For clamping two apparatuses together or securing an apparatus to a table top. Also useful for setting up rod mounted pulleys.



Cast iron enamelled frame. Plated screw and vise type nut.

Jaw opening	50mm(2")	75mm(3")	100mm(4")
Cat. No.	3554-01	3554-02	3554-03

## WHEEL AND AXLE

For determining the mechanical advantage and demonstrating the principle of conservation of energy.

Consists of four-step wooden wheel of 35, 50, 65 and 105mm diameters fitted with ball bearings, turning on a single, plated steel rod which can be clamped to a support stand using a right angle clamp. Each wheel has a flat groove to accept several turns of a cord with a small hole at each groove for holding a knotted cord. Can be fitted to a support stand with a right-angle clamp (not included). Recommended for use with nylon twine.



3556-00

## HAND TALLY COUNTER

Four digit counter that tallies upto 9999. With single click action and zero re-set knob.



3561-30

## SPECIFIC GRAVITY SET

Consists of 300mL aluminum catch bucket, aluminum overflow can with angled spout and three hooked cubes of different metals. For use in finding the volume, density and specific gravity of an object.

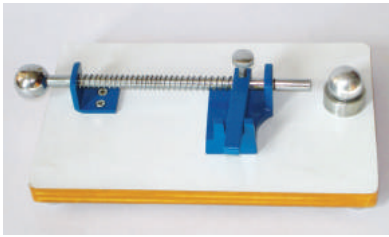


3536-25

# MECHANICS

## VERTICAL ACCELERATION DEMONSTRATOR (FALLING BODIES APPARATUS, PROJECTILE APPARATUS)

To show that a body launched horizontally will fall vertically at the same rate as a similar freely falling body. Consists of a push button activated spring-loaded launcher with holes for two steel balls 19mm diameter acting as projectiles. Mounted on a wooden block (l x w x h), 180 x 60 X 30mm. Designed to project one ball forward and the other to fall freely.



3558-00

## NEWTON'S SECOND LAW

Consists of spring-loaded metal device and two steel balls.

Demonstrates that a ball released vertically will hit the floor at the same speed of a ball released horizontally.



3557-00

## DOUBLE CONE AND INCLINE

For the dramatic and puzzling visualization of the effect of change of centre of gravity of an object. Consists of a pair of wooden double ended cones, a wooden diverging bar 0 to 10cm wide, serving as an inclined plane. When the double cone is set on the bars of the inclined plane the cone appears to roll up the plane violating the law of gravity. This is possible because the axis of the cone is actually moving downward due to a widening of the track.



3560-00

## STOP CLOCK

For all kind of laboratory timing experiments. Dial diameter 100mm. With start/stop and zero re-set levers. The winding key is at the rear.



3561-10

## STOP WATCH, ANALOG, 15 MINUTE, 1/10 SECOND, SINGLE ACTION

Dial is divided into 30 seconds with 1/10 second graduations. Has 0 to 15 minute registry. Easy to read numerals. Housed in a plated metal case with a glass covered dial. Mechanical 15 jewel lever movement. Start, stop, and reset operations are accomplished by a single button by successive depressions. Rewinding is done using anti-clockwise crown movement every eight hours. Supplied in a high impact plastic case. No batteries required.



3561 -00

## STOP WATCH, ANALOG, 60 MINUTES, 1/5 SECOND, INTERRUPTION TYPE

Dial is divided into 60 seconds with 1/5 second graduations. Has 0 to 60 minute registry. Easy to read numerals. Housed in a plated metal case with a glass covered dial. Mechanical 15 jewel lever movement. Can be started, stopped and restarted by depressing the crown. A second side button resets the hand to zero. Rewinding is done by anti-clockwise crown movement every eight hours. Supplied in a high impact plastic case. No batteries required.



3561-01

## GEOMETRICAL SOLID SET OF 10

These solids demonstrate the relationships between volume, size and shape. This set contains 10 pieces which are made of wood.

3563-00



## WANKEL ENGINE, DEMONSTRATION MODEL

This unit demonstrates the principle of operation of the Wankel engine with its circulating piston. It is cutaway to show the internal construction details. Mounted on a base.

3569-13

3569-13



## PETROL ENGINE TWO STROKE, DEMONSTRATION MODEL

This model represents the internal structures and operating principle of an air cooled two stroke engine. The model is a cast alloy construction.

3569-01

3569-01

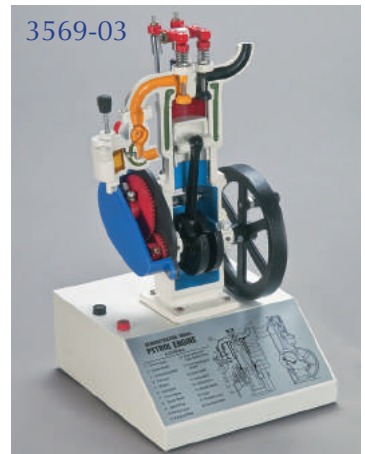


## PETROL ENGINE FOUR STROKE, DEMONSTRATION MODEL

Same as above but with chain drive from crank shaft for cam operated inlet and exhaust valve.

3569-03

3569-03



## DIESEL ENGINE TWO STROKE DEMONSTRATION MODEL

This model represents the internal structure and operating principle of two stroke diesel engine. The model is cast alloy construction.

3569-05

## DIESEL ENGINE FOUR STROKE, DEMONSTRATION MODEL

Same as above but with chain drive from crank shaft for cam operated jerk pump and inlet exhaust valves.

3569-07

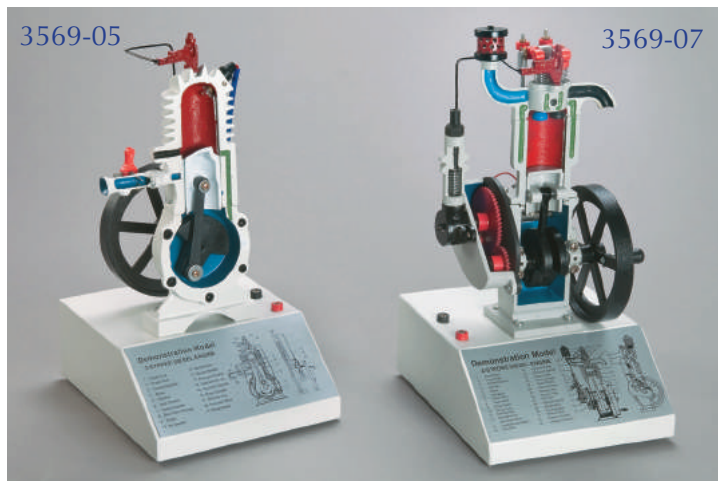
## STEAM ENGINE SECTIONAL DEMONSTRATION MODEL

Locomotive design showing cross section of several parts as positioned, clearly visible through air tight glass front and movement of these parts are smooth enough to demonstrate working even by blowing, mounted on heavy metal base.

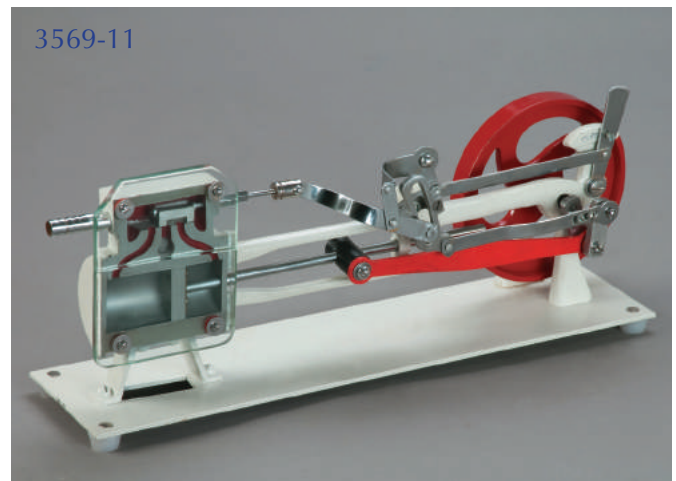
3569-11

3569-05

3569-07



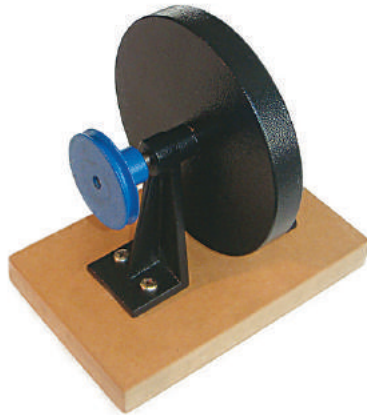
3569-11



# MECHANICS

## FLY WHEEL UNIT

The unit is the component part of the clear demonstration of the conversion of electrical energy into kinetic energy and back again when used in conjunction with the motor units and the lamp unit. The flywheel is of 115mm dia. The shaft has an aluminum pulley 44mm dia fitted on board size 150 x 100 x 10mm.



3572-01

## HEAD OF WATER UNIT

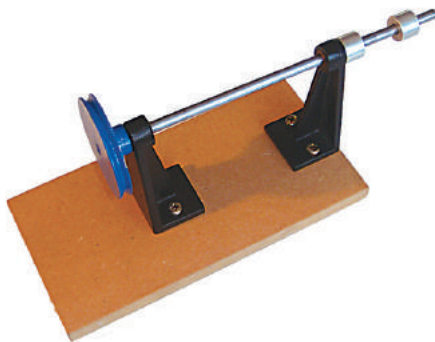
Used in conjunction with the turbine/pump unit to provide an open or closed system in demonstrating the conversion of Electrical energy to kinetic energy in the pump and from potential energy in the head of water. Supplied with two vessels of 80mm dia and tubes. The upper platform has 38mm dia hole to allow it to use as a single reservoir.



3572-02

## LINE SHAFT UNIT

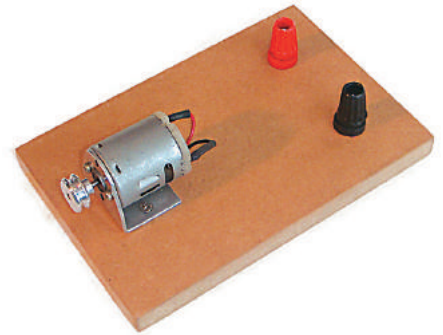
The line shaft is used to show the conversion from electrical energy, via mechanical, to potential energy by winding up a mass on a cord. The falling mass drives the generator and produces the power to light up a lamp showing the reversal of the conversion cycle. Base size is 200 x 100 x 10mm.



3572-03

## MOTOR GENERATOR UNIT LARGE

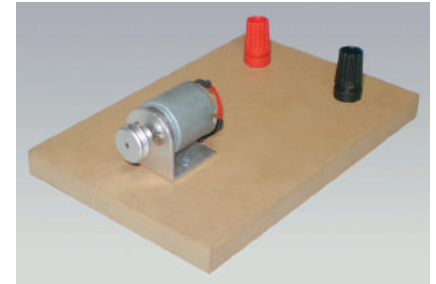
A high quality motor used for driving the dynamo, fitted with a 12mm diameter pulley. Electrical connection is via 4mm sockets. The motor operates between 2 and 6V DC. The base size is 146 x 100 x 10mm.



3572-04

## MOTOR GENERATOR UNIT SMALL

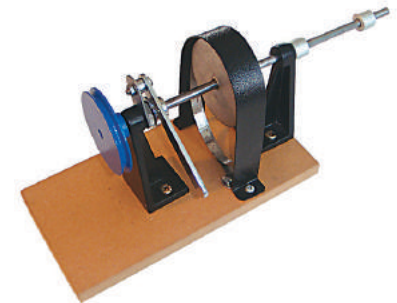
A high quality unit basically supplied to compare the power output and input against the larger version detailed above. The motor is fitted with a 12mm diameter pulley and is operated between 1.5 to 4.5V DC. The base dimensions are 146 x 100 x 10mm



3572-05

## SPRING UNIT

To show the conversion of potential energy stored in the twisted bands of rubber into electrical energy.

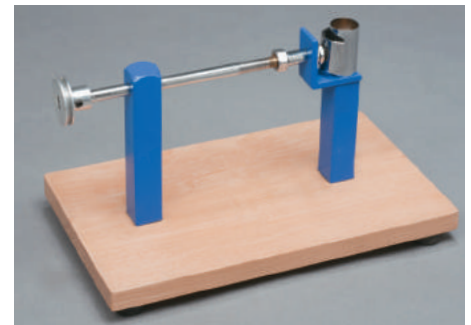


3572-06

## FRICTION CALORIMETER

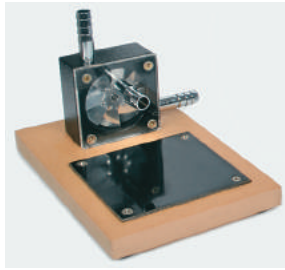
This unit demonstrates the conversion of electrical energy to heat via friction on the outside of a rotating vessel.

3572-07



## WATER TURBINE/PUMP UNIT

For use as a water turbine to drive a generator or for use as pump driven by a motor and raising a head of water to produce potential energy. Two inlet tubes (for turbine and pump operation) and one outlet tube are provided. A shaft is attached to the turbine and drives a 15mm pulley.



3572-08

## SOLAR CELL, MOUNTED

A solar panel (selenium photovoltaic cell) is mounted on a metal frame. The assembly has 4mm socket terminals for output. The output energy is sufficient to run a small motorized fan, buzzer or LED. A pair of leads with banana plugs at the end is provided.

Supplied without the motor/fan, buzzer or the LED

3572-28

## ACCESSORIES FOR SOLAR CELL

(connections can be made through 4mm sockets)

Integrated unit with motor/fan, buzzer and a LED mounted on a single plate.

3572-30

Motor with fan

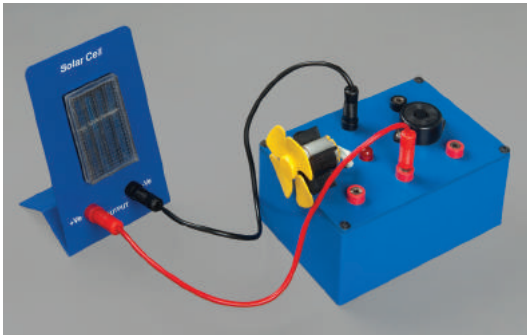
3572-31

Buzzer

3572-32

LED

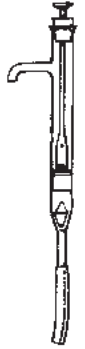
3572-33



## LIFT PUMP- MODEL

With glass valves. Un-mounted

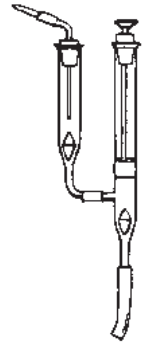
3580-01



## FORCE PUMP- MODEL

With glass inlet and outlet valves. Un-mounted.

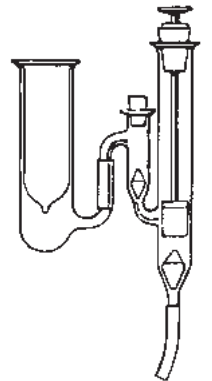
3580-03



## HYDRAULIC PRESS- BRAMAH - MODEL

With glass valves. Un-mounted

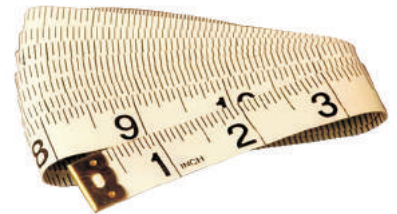
3580-05



## MEASURING TAPE

Reinforced plastic measuring tape. Measures one side 60" and the other side 1520 mm.

3966-00



## MEASURING TAPE

Measuring tape 3 M/10 ft, metal, retractable.

Metal tape in plastic housing. 13 mm wide and 10 ft./3m long.

8777-30



# SOUND

## TUNING FORKS, ALUMINUM

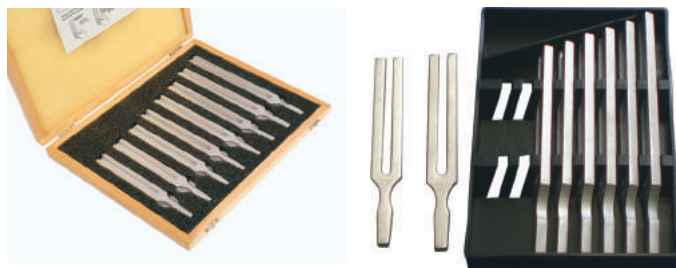
For demonstrating the relationship between sound and vibrations, the energy transfer between resonating systems and as a source of standard frequencies.

Milled from non-rusting non-magnetic aluminium bar stock. Plain shank form. Stamped with the musical scale note sounded by the fork and the frequency in Hz at the base of the tine of each fork. Lengths vary.

Frequency, Hz	Cat. No.
128	3610-02
256	3610-04
288	3610-06
320	3610-08
341.3	3610-10
384	3610-12
426.6	3610-14
480	3610-16
512	3610-18
271	3610-19
304	3610-21
362	3610-23
406	3610-24
456	3610-25

## TUNING FORKS, SET OF EIGHT, ALUMINUM

Includes tuning forks of frequencies from 256 to 512Hz listed above.



Wooden Case	3610-00
Plastic Case	3610-01

## TUNING FORKS, SET OF EIGHT, ALUMINUM WITH HAMMER

Includes tuning forks of frequencies from 256 to 512 Hz listed above. In a fitted wooden case.



7020-40

## TUNING FORKS, SET OF THIRTEEN, ALUMINUM

Includes tuning forks of frequencies from 256 to 512 Hz listed above. as in 3610-00. It also includes 271, 304, 362, 406, 456 Hz. In a wooden box.

3610-80

## TUNING FORKS, SET OF THIRTEEN, ALUMINUM WITH HAMMER

Includes tuning forks of frequencies from 256 to 512 Hz listed above. as in 3610-00. It also includes 271, 304, 362, 406, 456 Hz. In a wooden box.

3610-81

## TUNING FORKS, STEEL

Individually constructed of forged steel. Plain shank form. Stamped with the musical scale note sounded by the fork and the frequency in Hz at the base of the tine of each fork. Lengths vary. Chrome plated.



Frequency, Hz	Cat. No.
128	3620-02
256	3620-04
288	3620-06
320	3620-08
341.3	3620-10
384	3620-12
426.6	3620-14
480	3620-16
512	3620-18

## TUNING FORKS, SET OF EIGHT, STEEL

Includes tuning forks of frequencies from 256 to 512Hz listed above. In a styrofoam Box.

3620-00

## STRIKING Mallet (TUNING FORK HAMMER)

For activating tuning forks. Made of wood with a rubber surface.



3623-00

## TUNING FORK STEEL WITH BALL END

Frequency for 440 Hz



## ADJUSTABLE TUNING FORK

This high-quality, aluminium tuning fork delivers fine tones in 7 frequencies. Features adjustable weights for obtaining the following tones: C 128, D 144, E 160, F 170.7, G 192, A 213.3 and B 240. Scale letters are all clearly defined on stem.

Overall length is 200mm.

7120-40



## SYMPATHETIC DIFFERENTIAL FORKS

A combination tuning fork set that allows two demonstrations. Without the weights, one fork responds to the vibrations of the other, illustrating sympathetic vibration at distances. With the weights, one fork can be tuned 1 or more cps different, and both, when struck, will produce beats of startling clarity. These are extra heavy (32mm wide) chrome plated steel forks mounted in hardwood resonators.

Mallet included.

7120-90



## DOPPLER EFFECTS DEMONSTRATION

Consists of three drilled, aluminium tuning forks, tethering cord and a rubber striking mallet. Effectively demonstrates the change in pitch as the vibrating tuning forks are whirled toward and away from user.



3623-50

## RESONANCE APPARATUS

For experimental determination of the wave length and velocity of sound in air by locating resonance positions of an air column.

Consists of a graduated neutral glass tube (1 x d), 900 x 25mm, connected by a rubber tubing and pinch cock to an aluminium water reservoir, securely mounted to a metal support. The reservoir can be raised or lowered for adjusting the length of the air column. A tuning fork is required. (not supplied).

3628-00



## ORGAN PIPE

A simple wooden organ pipe with mouth piece whistle and a sliding piston to vary length. Demonstrates the change in frequency with air column.

3628-10



# SOUND

## BELL IN JAR

Electric bell operating on 3-6 volts AC/DC, suspended in bell jar 200x103 mm, height x diameter. Complete with wire and terminals for connection.

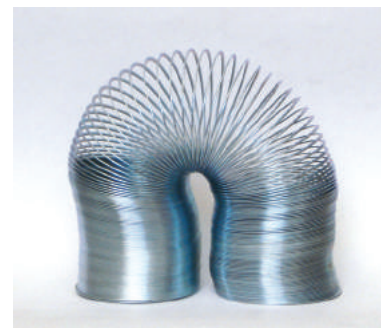
3634-51



## SPRING SLINKY

For simple wave studies.

Edge wound spring.



Closed Length	Diameter	Extended length	Cat No.
150mm	75mm	Approx 20m	3638-01
60mm	75mm	Approx 8m	3638-02

## SONOMETER, WOOD, TABLE MODEL

For verifying the laws of vibrating strings, frequency comparisons with vibrating bodies and determination of the frequency of a tuning fork by tuning a string in unison with it. Consists of a hollow wooden resonance chamber measuring (l x w x h), 115 x 12 x 8cm, with two meter scales graduated in millimeters. One end of a brass and a steel wires is fixed on the edge of the resonance chamber and the other end of the wires are pegged with a tensioning key. Pulley and hook provided for the third steel wire to be tensioned by masses. Two movable bridges are also provided. Weights not included.

3634-01



## SNAKY SPRING (WAVE DEMONSTRATION)

To study and demonstrate wave motion. Closely wound spring 20mm dia. is 2m long and can be extended upto 10m.

3640-00



## SONOMETER ON BOARD

Mounted on a solid MDF board 1090x100mm with rubber feet. It has 2 steel wires attached to two 0-50N spring scales and corresponding wrest pins at the other end. Also supplied along are two small and one large bridge. Two set of spare steel wires are also included.

3634-10



## WEIGHTS FOR SONOMETER

Four slotted iron masses of 500g each on a 500g iron hanger.

3635-02



## KUNDT'S APPARATUS (TUBE)

For demonstrating formation of stationary longitudinal waves in air or gases and for determining the wavelength and velocity of sound in metal rods, air and other gases. Consists of a glass tube about 1000mm long and 30mm in diameter, which is closed at one end with a cork. The tube rests on wedge supports securely fastened by coil springs and mounted on a base. A 90cm long aluminium rod having a terminal disk of diameter slightly less than that of the glass tube acting as a piston in the glass tube. The aluminium rod is rigidly clamped in the middle, on a metal post. Lycopodium powder (not supplied) can be used to show nodal points.

3644-02



3644-02

## LYCOPodium POWDER

Required in Kundt's tube for determining the velocity of sound in air. Pack of 100g.

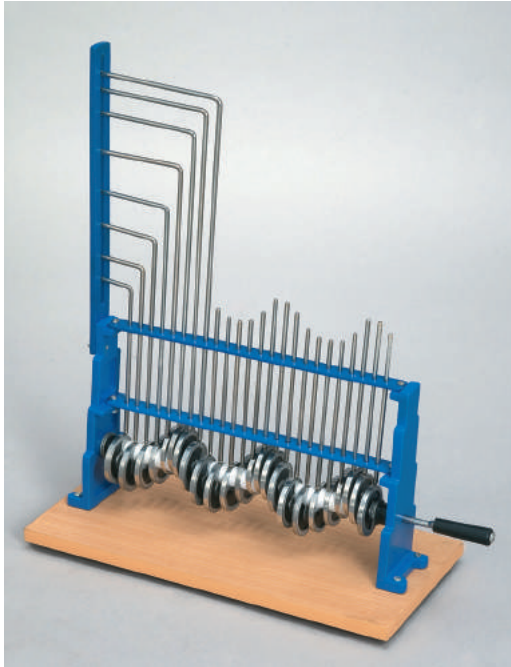
3644-04



## WAVE MOTION

For demonstrating longitudinal and transverse motion. Consisting of a number of centric aluminium discs supporting series of metal rods, joined to a handle. On revolving the handle simulation of waves can be obtained on rods running in metal guide.

3640-50



## STETHOSCOPE, BOWLES, DIAPHRAGM TYPE

A simple and sturdy instrument for students to detect feeble sounds like heart beats.

Consists of a chestpiece, latex Y-tube, plated brass binurals with plastic earpieces.

3646-02

## STETHOSCOPE, FORD

For detecting heart beats and chest sounds using double tube configuration. Can be safely used by younger students.

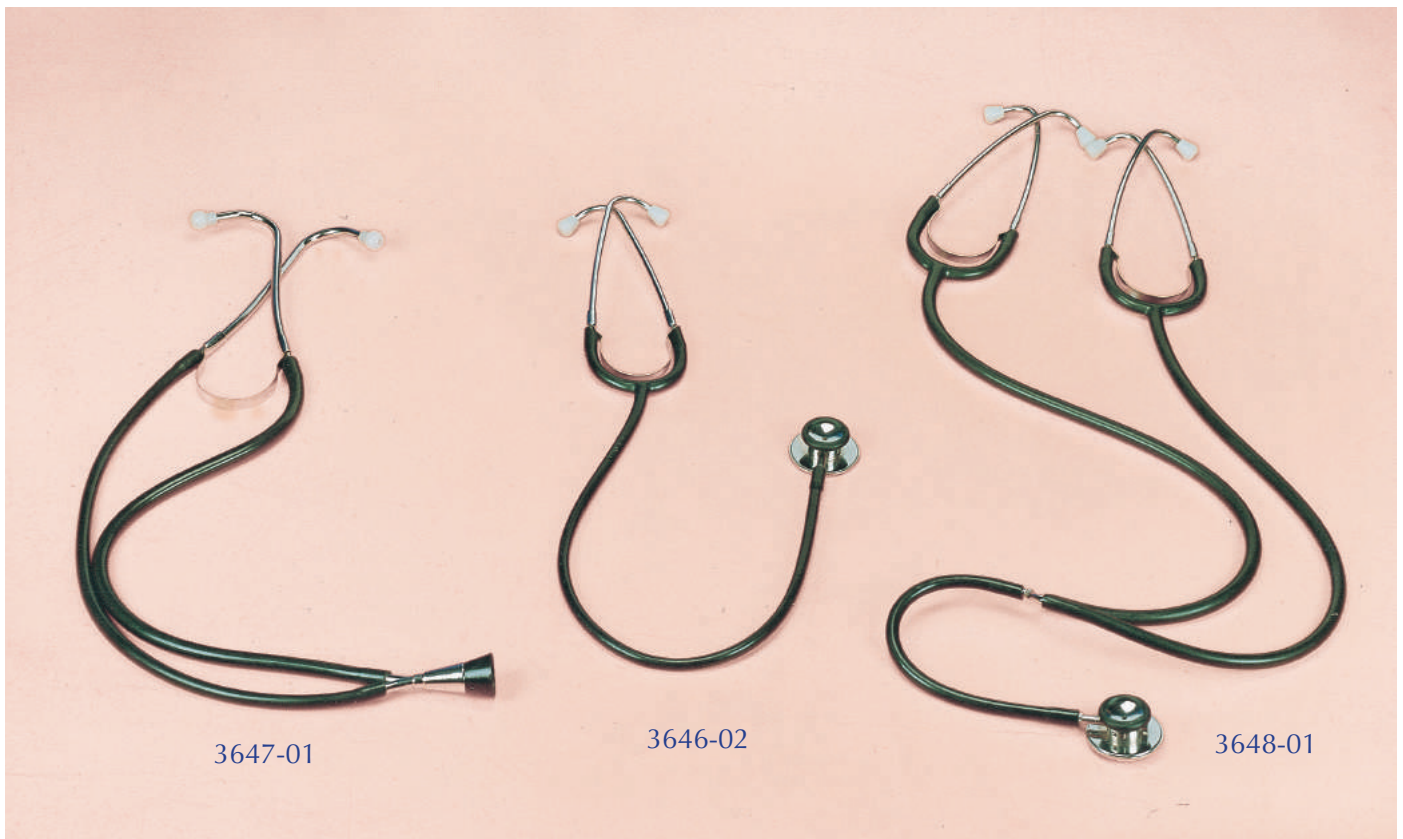
Consists of a black bell dual stem plastic chestpiece, a head set of plated brass binaurals with plastic earpieces and black latex Y-tubing connector.

3647-01

## STETHOSCOPE, TEACHING

For simultaneous listening of heart sounds by the student and instructor or two students, through a single chest piece. Consists of a Bowles chestpiece, dual head sets of plated brass binaurals with plastic earpieces, black latex extension and Y-tubing connector.

3648-01



3647-01

3646-02

3648-01

# LABORATORYWARE

## TONGS CRUCIBLE

For handling or manipulating hot crucibles and similar apparatus. Corrugated tips for easy handling. Riveted joint. Finger openings are large enough for firm grip. Overall length about 200mm.



Material	With Bow	Without Bow
Plated steel	2020-01	2020-51
Brass	2020-02	2020-52
Stainless steel	2020-03	2020-53

## TONGS, BEAKER

Designed to hold liquid filled beakers from 50mL to 600mL capacity.

Made of plated steel rod with plastic tubing covered jaws. Finger grips are large enough for thumb and two fingers. About 280mm long.



2024-01

## TONGS, BEAKER

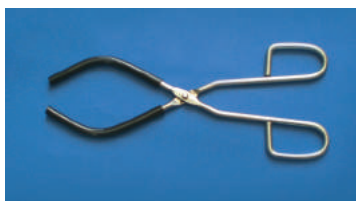
For holding beakers from 100mL upto 1500mL capacity. The jaws are covered with replaceable PVC tubing. Overall length 360mm. Made of plated steel.



2024-11

## TONGS, BEAKER

For holding beakers from 50mL upto 2000mL capacity. The jaws are covered with replaceable PVC sleeves. Overall length 250mm. Made of plated steel.



2024-21

## TONGS, BEAKER

For holding beakers from 50mL up to 2000mL capacity. The jaws are covered with replaceable PVC sleeves. Overall length 300mm. Made of plated steel



2024-23

## TONGS, FLASK

For holding flasks from 100mL up to 2000mL capacity. The jaws are covered with replaceable PVC sleeves. Overall length 250mm. Made of plated steel.



2024-51

## TEST TUBE CLAMP, STODDARD'S, WITH FINGER GRIPS

For tubes from 0.6mm to 3.1 mm outer diameter. Made of plated spring steel wire. Has self-closing jaws with finger grips. About 16cm long.



2030-01

## TEST TUBE CLAMP, STODDARD'S, WITHOUT FINGER GRIPS

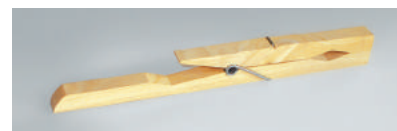
Similar to the above Test Tube Holder 2030-01 but without finger grips



2030-02

## TEST TUBE CLAMP, WOODEN

For tubes from 10mm to 19mm diameter. With a steel spring. Jaws open by thumb pressure. Smooth finish. Length about 180mm.



2031-01

## TEST TUBE HOLDER, CROSS PATTERN

For handling test tubes from 12 to 40mm outer diameter. Made from rolled brass strip with a spring clip. Mounted in a polished wooden handle. Overall length about 220mm.



2032-01

## TEST TUBE RACK, POLYPROPYLENE

Replacement for wood and metal racks. For six test tubes. Has six openings of 25mm diameter on top plate, with hemispherical wells and drying pins. Open side for clear viewing. Dimensions: (l x w x h), 240 x 70 x 90mm.



2035-01 

# LABORATORYWARE

## TEST TUBE RACK, ABS POLYMER

The lower plate has rounded wells with drain holes. Convenient hand grips on both sides.

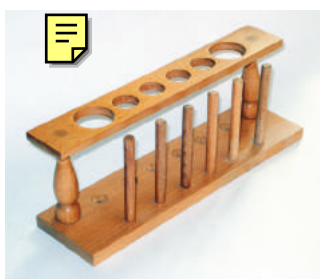


No. of holes	Dia of tube	Cat. No.
12	25mm	2035-11
20	19mm	2035-12
31	12mm	2035-13
18	25mm	2035-15
12	18mm	2035-17

## TEST TUBE SUPPORT, WOODEN, SIX PLACES

Made of kiln dried wood. Has six openings of 24mm diameter and six drying pins. Measures (l x w x h), 240 x 70 x 90mm. Oil finished.

2035-21



## TEST TUBE SUPPORT, WOODEN, TWELVE PLACES

Has twelve openings of 20mm diameter. Measures (l x w x h), 200 x 140 x 70mm. Made of kiln dried wood. Oil finished.

2035-22



## TEST TUBE STAND Z ALUMINIUM

'Z' pattern with three rows of holes, manufactured in corrosion-resistant aluminium sheet 5 holes are 28 mm diameter, 6 holes are 19 mm diameter and 8 holes are 13 mm diameter.

Dimensions: 200 x 120 x 90 mm.

2035-50



## SLOTTED BASE

For holding flat object upright. Cast iron, enamelled base with steel thumbscrew. Distance between the jaws is 3.4cm and the height of the jaw is 4cm. Dimensions: (l x w), 9.5 x 7.5cm.

2043-00



## SUPPORT RINGS, CAST IRON

For use on support rods, lattices etc., upto 13mm (1/2 in) diameter.

With integral bossheads. Distance from center of ring to center of bosshead is 10.5cm (4 1/4 in). Brass thumbscrew. Enamel finish.



Ring i.d.	Cat. No.
50mm (2in)	2038-01
62mm (2 1/2 in)	2038-02
75mm (3in)	2038-03
100mm (4in)	2038-04
125mm (5in)	2038-05

## SUPPORT PLATE (TABLE/SHELF) WITH CLAMP

Consists of a flat circular cast iron plate with integral bosshead and plated thumbscrew. Inside diameter of the rim 127mm (5in). Can be clamped to rods up to 16mm diameter.

2040-00



## SUPPORT RINGS, EXTENSION (PLAIN EXTENSION RINGS)

For use with clamp holders.

Made of zinc plated steel wire of diameter 8mm (5/16 in), and with shank about 30cm (12in) long. Approximate ring diameters are:



Diameter	Cat. No.
50mm (2in)	2042-01
75mm (3in)	2042-02
100mm (4in)	2042-03
125mm (5in)	2042-04
150mm (6in)	2042-05

## LAB JACK

To provide stable support for laboratory equipment. These jacks have a screw operated scissor action mechanism.

Plate size	Cat. No.
125 x 125mm	6464-20
150 x 150mm	6464-24
200 x 200mm	6464-28



# LABORATORYWARE

## SUPPORT STAND, RECTANGULAR, CAST IRON BASES

Rugged base for stability. Base drilled and tapped on the edge (except the 300 x 150mm base, which has two holes). Plated steel rod can be unscrewed from the base for storage. Chemical-resistant, baked enamel finish. Undercoated.



Base size (l x w) mm (in)	Rod size (d x l) mm (in)	Cat. No.
150 x 100 (6 x 4)	10 x 450 ( $25/64$ x 18)	2050-01
200 x 125 (8 x 5)	10 x 500 ( $25/64$ x 20)	2050-02
225 x 150 (9 x 6)	12 x 600 ( $1/2$ x 24)	2050-03
300 x 150 (12 x 6)	12 x 900 ( $1/2$ x 36)	2050-04

## SUPPORT STANDS, RECTANGULAR, STEEL BASES

Consists of a base made from 3mm thick steel sheet with rubber feet for stability. The base has a hole drilled, close to the edge (except the 300 x 150mm base, which has two holes). Supplied with a plated steel rod which can be easily screwed to the base for storage. Which has black enamel finish with an undercoating on the bottom. Rubber sleeve provided to cover the edges of the base.



Base size (l x w) mm (in)	Rod size (d x l) mm (in)	Cat. No.
150 x 100 (6 x 4)	10 x 450 ( $25/64$ x 18)	2051-01
200 x 125 (8 x 5)	10 x 500 ( $25/64$ x 20)	2051-02
225 x 150 (9 x 6)	12 x 600 ( $1/2$ x 24)	2051-03
300 x 150 (12 x 6)	12 x 900 ( $1/2$ x 36)	2051-04

## SUPPORT STANDS, RECTANGULAR, STAINLESS STEEL

Similar to 2051 above but made of high grade stainless steel to prevent corrosion. Size of base 200 x 125mm. Rod size 600 x 12.5mm.

2051-06



## TRIPOD BASES WITH RODS

Heavy cast iron base with three point support for stability. It is drilled and threaded to accommodate a plated steel rod. The base is finished with chemical-resistant enamel paint. Size is the distance from the center of the base to the end of the tripod foot.



Size mm (in)	Rod size (d x l) mm (in)	Cat. No.
100 (4)	10 x 500 ( $25/64$ x 20)	2054-01
150 (6)	12 x 900 ( $1/2$ x 36)	2054-02

## TRIPOD STANDS, SINGLE RING

For supporting small objects over a burner such as crucibles, evaporating dishes etc.

Consists of a hammertone finished cast iron circular ring diameter 100mm (4in), with three threaded and detachable plated legs which are sloped outward for stability. Shipped unassembled.



Overall height mm (in)	Cat. No.
150 (6)	2056-01
230 (9)	2056-02

## RING STAND

Comprised of a cast enamel finished ring o.d. about 11.5cm supported on three detachable, plated steel legs about 20cm high.

2056-11

## RING STAND

As above but with plated ring.

2056-12

## TRIPOD STAND WITH CONCENTRIC RINGS

For supporting various sizes of crucibles, and apparatus.

Consists of a circular tripod stand with two removable concentric rings. The plated steel legs are detachable and sloped outwards for stability. Outer diameter of the ring is 150mm (6in) and overall height is 220mm ( $8 \frac{5}{8}$ in). Black enamel finish. Shipped unassembled.

2057-01



# LABORATORYWARE

## TRIPOD STAND, PLATED TOP

Triangular shape top with each side approximately 125mm (5in) and detachable legs sloped outwards for stability. Overall height is approximately 220mm (8 <sup>5</sup>/<sub>8</sub>in). Made of plated steel.

2058-01



## TRIPOD STAND, STAINLESS STEEL WIRE

Provided with optional plastic sheet

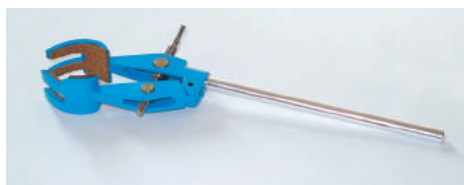
Side x height	Cat. No.
130 x 150mm	2058-06
130 x 200mm	2058-07



## CLAMP EXTENSION, FOUR-PRONG

For providing a firm grip on objects of diameter from 2mm to 90mm. Four pronged clamp of cast alloy with brass thumbscrew and cork lined jaws. Overall length approximately 240mm.

2062-01

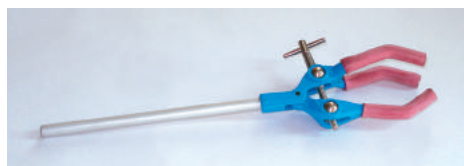


## CLAMP, EXTENSION, RUBBER COVERED JAWS

For ensuring a firm grip on small round or irregularly shaped objects.

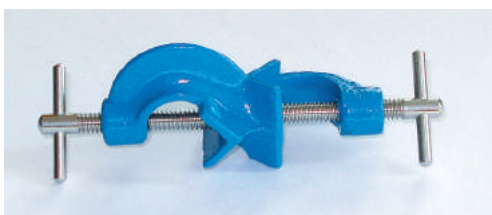
Three pronged aluminium die-cast clamp with brass thumbscrew. Jaws are covered with replaceable rubber tube, which open from 3-90mm. Overall length approximately 250mm.

2062-02



## CLAMP HOLDER, RIGHTANGLE

For connecting two rods at right angles forming L or T shape. Made of die-cast alloy with plated brass thumbscrews. It can accept or be clamped to rods up to 18mm diameter.



2063-01

## ALCOHOL BURNER (LAMP), GLASS

Suitable for student use.

Made of molded soda glass with tightly fitting sealed brass cap. Alcohol is poured by removing threaded brass wick holder. Equipped with a glass cap for extinguishing the flame and to prevent evaporation of alcohol. Capacity about 125mL.

2066-01



## ANGULAR ALCOHOL BURNER

Angular shape allows it to be used while tilted. Glass with brass cap.

2066-11



## REPLACEMENT WICKS

Bag of 12.

2066-12

## BUNSEN BURNER FOR PROPANE GAS, SIMPLE

A heavy base with brass mixing pipe 13mm diameter and a 9mm diameter serrated gas inlet tube.

2066-02



## BURNER, TECLU, FOR PROPANE GAS

For obtaining a very hot flame, suitable for glass work and soldering.

Consists of a plated brass tube (h x o.d.), 105 x 13mm with threaded disc valve for adjustment of the air/gas mixture. Conical mixing section. Base diameter about 80mm and overall height 120mm. Serrated inlet tube diameter 9mm. Suitable for propane gas.

2066-03



# LABORATORYWARE

## BUNSEN BURNER, PROPANE GAS

Uses a device for combining a flammable gas with controlled amounts of air before ignition; it produces a hotter flame than would be possible using the ambient air and gas alone. The Bunsen Burner consists of a metal tube on a base with a gas inlet at the lower end of the tube, which has an adjusting valve; opening in the sides of the tube can be regulated by a collar to admit as much air as desired. The mixture of air and gas (optimally about 1 part gas to 3 parts air) is forced by gas pressure to the top of the tube, where it is ignited with a match. It burns with a pale blue flame, the primary flame, seen as a small inner cone, and a secondary, almost colourless flame, seen as a larger, outer cone, which results when the remaining gas is completely oxidized by the surrounding air. Die casted Zinc base.



2066-05

Note : All Bunsen Burners can be supplied for coal gas also.

## BURNER WING TOPS

For obtaining broad, fishtail flame that heats large area and smoothly bends glass. Also useful for flame tests and paint stripping.

Made of brass. Fits over a range of burner mixing tubes.



Outer diameter mm (in)	Cat No.
11( $\frac{7}{16}$ )	2067-01
13( $\frac{1}{2}$ )	2067-02
16( $\frac{5}{8}$ )	2067-03
18( $\frac{11}{16}$ )	2067-04

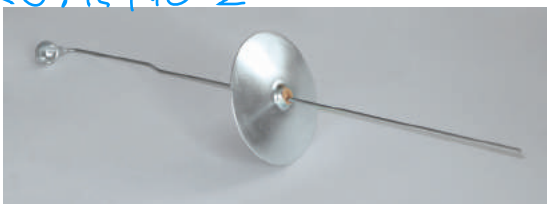
## DEFLAGRATING SPOON WITH DISC

For proving the 'supporter of combustion' role of gases like oxygen and chlorine by helping burning of appropriate substances as sulphur, phosphorous etc.

Consists of a cup of diameter 18mm welded to a wire handle about 380mm long. A disc of 75mm diameter is provided for safety. It has a cork in the centre to hold the handle at the desired length. Made of plated steel.

COYK NO 2

2073-01



## WOOD SPLINTS

For identification of oxygen and similar gases which support combustion.



2070-01

## COMBUSTION SPOON, NUFFIELD

Similar to 2073-01 and recommended for use in test tube of size (l x d), 150 x 24mm. Diameter of the spoon is 6mm and overall length approximately 210mm. Made of stainless steel. Supplied without disc and test tube.



2073-05

## MAGNESIUM RIBBON

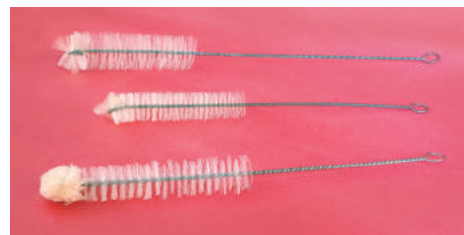
For combustion experiments. Thickness 0.03mm. Flammable solid. Cannot be shipped by Postal Service. Sold only to businesses.



Pack of	Cat No.
25g	2074-02
31g	2074-01

## BRUSHES, TEST TUBE

Nylon bristles, fan shaped at one end on a twisted galvanised iron wire.



Brush size (d x l)	Overall Length (mm)	Cat. No.
12 x 75	200	2080-11
18 x 90	230	2080-12
35 x 100	280	2080-13
13 x 65	320	2080-01
18 x 110 (with cotton tip)	230	2080-05

# LABORATORYWARE

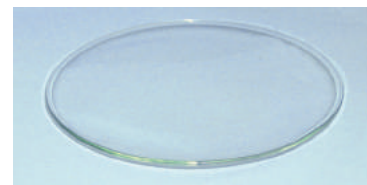
## LABORATORY SCOOP, (CHEMICAL SCOOP), WATCH GLASS "SCOOPULA"

For scooping out small or large amounts of chemicals from bottles etc.. Made of stainless steel. Has semicircular cross section with one pointed end and one blunt end. Length about 165mm (6 4/2 in). Without handle.

2084-01



Made of heavy wall plate glass, with fired edges.



Diameter	Cat. No.
50mm	2086-01
65mm	2086-02
75mm	2086-03
90mm	2086-04
100mm	2086-05
125mm	2086-06
150mm	2086-07

## SPATULA, NUFFIELD

Made of stainless steel. Pressed into one bent flat end, raised center section and 20mm long scoop at the other end. Overall length is about 140mm and about 7mm wide middle strip.

2084-04



## SPATULAS, DOUBLE ENDED

Made of stainless steel sheet. One end is a flat spatula and the other bent into a spoon form.

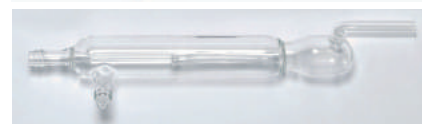


## FILTER PUMP (ASPIRATOR)

For vacuum filtration and other low vacuum laboratory applications.



With 9mm serrated inlet nozzles. Designed to prevent flooding and turbulence.



Overall length	Flat end (l x w)	Cat. No.
205mm	34 x 17mm	2084-09
145mm	26 x 17mm	2084-10

## SPATULA, MICRO

Made of stainless rod which is pressed into thin flat double blades at both ends. One end is a flat strip (l x w), 60 x 8mm and the other has a rounded angle end about (l x w), 60 x 8mm. Overall length about 20cm.

2084-14



Material	Cat. No.
Borosilicate glass	2089-01
Brass	2089-02
Stainless steel	2089-03

## SPATULA TRULA

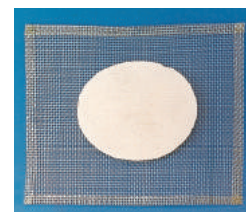
Made of stainless steel. Overall length is about 176mm and about 18mm wide.

2084-02



## WIRE GAUZE SQUARES

Made of galvanized/stainless steel woven wire with edges carefully turned over.



## CORK BORER SHARPENER

For sharpening hollow cork borers from 5 to 22mm in diameter. Consists of a brass cone to fit the borer, with a hinged steel blade ground to sharpen the cutting end of the borer. Mounted in a wooden handle. Total length, 190mm.

2095-00



Size (plain type) Galvanized			
in (cm)	4 (10)	5 (13)	6 (16)
Cat. No.	2210-01	2210-02	2210-03
Size (with ceramic center) Galvanized			
in (cm)	4 (10)	5 (13)	6 (16)
Cat. No.	2210-11	2210-12	2210-13
Size (plain type) Stainless Steel			
in (cm)	4 (10)	5 (13)	6 (16)
Cat. No.	2210-31	2210-32	2210-33
Size (with ceramic center) Stainless Steel			
in (cm)	4 (10)	5 (13)	6 (16)
Cat. No.	2210-41	2210-42	2210-43

# LABORATORYWARE

## NICKEL CRUCIBLE

Capacity	Top Dia	Cat No.
30mL	40mm	2273-51
50mL	45mm	2273-52
70mL	50mm	2273-53



## LID FOR NICKEL CRUCIBLE

Capacity	Cat No.
30mL	2273-57
50mL	2273-58
70mL	2273-59

## LITMUS PAPER

In pack of 100 loose leaves.

Type	Cat. No.
Blue	2091-01
Red	2091-02



## PH PAPER TEST STRIPS

Pack of 100 test strips with color code key to match Ph from 1-14.

2092-10



## FILTER PAPER

High quality neutral filter paper, suitable for normal filtration. Contains very low ash content. Available in packs of 100.

Size (cm)	Cat. No.
9	4741-01
11	4741-02
12.5	4741-03
15	4741-04
18	4741-05



## SAND BATH

Galvanized iron, shallow form, 140mm dia. Supplied in pack of 10.

2275-00



## PIPET FILLER, RUBBER

Useful for safely drawing liquids in a pipet. It is chemically resistant.

Capacity	Cat No.
Medium (approx. 50mL)	6388-60
Large (approx. 100mL)	6388-80



## PIPET BULB

Capacity (approx.)	Cat. No.
Small 1mL	6388-11
Medium 2mL	6388-12
Large 3mL	6388-13
Extra Large 10 mL	6388-14



## CORK BORERS SET

Made of plated sharpened brass tubing with attached handles including a steel punch. Diameters of the holes made, start with 5mm increasing as shown in the following data table.



Set of	3	6	9
Size Nos.	1-3	1-6	1-9
Cat. No.	2093-01	2093-02	2093-03

Note:

Borer size no.	Approx. diameter of the holes, mm (in)
1	5 ( $\frac{13}{64}$ )
2	6 ( $\frac{1}{4}$ )
3	8 ( $\frac{19}{64}$ )
4	9 ( $\frac{11}{32}$ )
5	10 ( $\frac{25}{64}$ )
6	11 ( $\frac{7}{16}$ )
7	13 ( $\frac{1}{2}$ )
8	15 ( $\frac{39}{64}$ )
9	16 ( $\frac{21}{32}$ )

## CORK PRESS

For tapering, softening for boring and reducing corks up to 30mm diameter for exact fit. Made of cast iron. Rotary form. Mounted on wooden base.

2096-00





# LABORATORYWARE

## CENTRIFUGE HAND

Hand driven, as the name suggests. It has an integral clamp for fixing on to a table. With plastic/metal buckets to hold up to 15mL glass tube.

2 tubes	2101-01
4 tubes	2101-02



## CENTRIFUGE ELECTRIC

It houses a 220V/50Hz electric motor with a spindle that can take a swing-out or angle-head rotor. The motor speed can be varied in steps by a rotary switch. With a 30 minute timer. We can also provide a safety device that shuts off the motor when the lid is open.

2101-11



## GAS JAR

Made of Soda glass and with ground top flange. Without Cover.

Size	Cat. No.
150 x 50mm	2073-10
200 x 50mm	2073-11
250 x 50mm	2073-12



## GAS JAR COVER

Ground on one side.

50mm	2073-50
75mm	2073-51
100mm	2073-52

## BURET CLAMP ECONOMY

Light weight aluminium cast body with spring loaded clips for securely holding burets. Has a 20mm hole at the back to connect up to 18mm ring stand rod.

For 1 Buret	2062-05
For 2 Buret	2062-15



## FUNNEL STAND WOODEN

Complete with holder with screw/knob hard wood base polished.

For 1 Funnel	2062-30
For 2 Funnel	2062-31



## BURET STAND WOODEN

Hard wood base clamp and holder with screw nicely polished.

For 1 Buret	2062-32
For 2 Buret	2062-33



## PIPETTE STAND WOODEN

Wooden polished, to hold 12 pipettes horizontally. height 23cms, width 26cms, and depth 12cms (approx size)

2062-50



## RUBBER TUBE

High grade, medium wall rubber tubing for general laboratory use. Available in rolls of 10 meters.



ID (mm)	Wall Thickness (mm)	Cat No.
4	1	6388-01
5	1.5	6388-02
6	1.5	6388-03
7	1.5	6388-04
8	1.5	6388-05
9	2	6388-06
10	2	6388-07
12	2.5	6388-08

# LABORATORYWARE

## RUBBER STOPPER

Rubber stoppers are commonly used with laboratory glassware, mainly because of their non-reactivity.

Not recommended for use with food or beverages.



## CORKS STOPPERS

Natural cork, long form.



No.	Top Dia (mm)	Bottom Dia (mm)	Height (mm)	SOLID	ONE HOLE	TWO HOLE
000	9	6	16	6320-01	XX	XX
0	13	9	15.5	6320-02	6330-02	XX
1	14	11	18.5	6320-03	6330-03	XX
2	16.5	13	20	6320-04	6330-04	6340-04
3	19	14	21	6320-05	6330-05	6340-05
4	21	15	22	6320-06	6330-06	6340-06
5	22.5	17.5	23	6320-07	6330-07	6340-07
6	24.5	20	24	6320-08	6330-08	6340-08
7	26	20	27.5	6320-09	6330-09	6340-09
8	26.5	21	27.5	6320-10	6330-10	6340-10
9	28	21.5	31	6320-11	6330-11	6340-11
10	30	26	33	6320-12	6330-12	6340-12
11	33.5	30	33.5	6320-13	6330-13	6340-13
12	34.5	30	34.5	6320-14	6330-14	6340-14
13	38.5	31	37	6320-15	6330-15	6340-15
14	41.5	32	42.5	6320-16	6330-16	6340-16
15	43.5	34	40.5	6320-17	6330-17	6340-17
16	45	35	36.5	6320-18	6330-18	6340-18
17	49.5	40	40.5	6320-19	6330-19	6340-19
18	53.5	48	33.5	6320-20	6330-20	6340-20
19	58	44	45	6320-21	6330-21	6340-21
20	60	51	56.5	6320-22	6330-22	6340-22

Size No.	Length (mm)	Top (mm)	Bottom (mm)	Cat No.
000	13	6	4	6350-01
00	13	8	5	6350-02
0	13	10	7	6350-03
1	16	11	8	6350-04
2	17	13	9	6350-05
3	19	14	10	6350-06
4	20	16	11	6350-07
5	22	17	12	6350-08
6	24	19	13	6350-09
7	25	21	15	6350-10
8	27	22	17	6350-11
9	29	24	18	6350-12
10	31	25	20	6350-13
11	31	27	21	6350-14
12	31	29	22	6350-15
13	31	30	24	6350-16
14	31	32	25	6350-17
15	31	33	27	6350-18
16	38	35	27	6350-19
17	38	36	30	6350-20
18	38	38	31	6350-21
19	38	40	33	6350-22
20	38	41	34	6350-23
21	38	43	36	6350-24
22	38	45	38	6350-25
23	38	46	39	6350-26
24	38	48	41	6350-27

## HOFFMAN CLIP

For tubing up to 25mm diameter, particularly for regulating flow. It is very strong for its size and is designed to be installed without disconnecting the ends of the tubing.

6310-01



## MOHR'S CLIP

Pinch cock, nickel plated iron, flat jaws for compressing flexible tubing.

6310-05



# LABORATORYWARE

## LABCOAT

Made of Cotton Polyester Available in following sizes:

Size	Cat No.
Small	6350-01
Medium	6350-02
Large	6350-03



## MEASURING CYLINDERS

Single piece, with raised numerical graduations. Resistant to most common acids, bases and solvents. Has a broad base for stability. All sizes have pouring spouts. Does not have meniscus. Autoclavable to 130°C.



Capacity	(Polypropylene) Cat. No.	(TPX-clear) Cat. No.
10mL	2203-01	2203-31
25mL	2203-02	2203-32
50mL	2203-03	2203-33
100mL	2203-04	2203-34
250mL	2203-05	2203-35
500mL	2203-06	2203-36
1000mL	2203-07	2203-37
2000mL	2203-08	

## KIPPS APPARATUS , PLASTIC AND GLASS

A PTFE stopcock is provided for the release of H<sub>2</sub>S gas. Supplied with thistle funnel and delivery tube.



## BEAKERS, GRIFFIN, POLYPROPYLENE

Single piece, molded of translucent plastic, with raised numerical graduations on the inside. Resistant to most common acids, bases and solvents. Has a broad base for stability. All sizes have pouring spouts. Does not have meniscus. Autoclavable to 130°C.



Capacity	Plastic	Borosilicate Glass
250mL	2111-02	2111-12
500mL	2111-04	2111-14
1000mL	2111--06	2111-16

Capacity	Cat. No.
50mL	2205-01
100mL	2205-02
250mL	2205-03
500mL	2205-04
1000mL	2205-05
2000mL	2205-06

## CAVITY TILE (SPOTTING TILE), POLYPROPYLENE

Substitute for porcelain tiles. Made of strong, white, unbreakable plastic and has 12 depressions. Washable.



2200-01

## STAINING JAR (STAINING DISH), POLYPROPYLENE

For staining microscope slides with dyes or chemicals. Has five grooves to hold 10 standard (1 x w), 75 x 25mm slides back to back in erect position. With domed threaded screw cap. Approximately 114mm high.

2202-01



## BEAKERS WITH HANDLE, GRIFFIN, TALL FORM (PITCHERS) POLYPROPYLENE

Raised graduations in liters and milliliters. Flat stable base. Translucent.



Capacity	500mL	1000mL	2000mL
Cat No.	2207-01	2207-02	2207-03

# LABORATORYWARE

## FUNNELS, POLYPROPYLENE

For conveniently pouring liquids in containers. Translucent.



Diameter	50mm	60mm	75mm	100mm
Cat. No.	2209-01	2209-02	2209-03	2209-04

## POWDER FUNNELS, POLYPROPYLENE

These funnels are best suited for transferring powdered reagents. The unique feature of these funnels is its parallel stem that minimizes bridging of powder. These funnels are steam autoclavable.



Particular	Inside Dia	Stem Length	Cat. No.
65mm	65	22	2213-02
80mm	78	30	2213-04
100mm	100	33	2213-06
150mm	145	30	2213-08

## FUNNEL HOLDER

Made of polypropylene these corrosion free funnel holders can hold funnels with dia 75mm to 150mm. The extra plate provided can be placed to hold funnels of dia 25 to 75mm. Two tapered wedges are provided to ensure firm grip on rods of 10-12mm.



2280-00

## PIPET STAND (HORIZONTAL)

This detachable stand can hold 12 pipets, 6 on each side, in a horizontal position. Moulded in Polypropylene, this autoclavable stand has two sides which are attached to each other with three metallic rods coated with Polypropylene. This stand can be easily disassembled for space saving storage.



2215-00

## PIPET STAND (VERTICLE)

This is a stable, non-corrosive, detachable stand which can hold 28 pipets with maximum dia 14mm. The heavy base measures 225mm in diameter and a Polypropylene coated square rod measuring 375 mm in length is screwed into the base. The top disc that can be fixed on the rod has holes for holding pipettes while the lower one has pilot holes where the pipette tips rest and liquids drain down to the base. These discs can be adjusted on the rod according to the length of the pipette. The arrows provided on the discs should be kept parallel to ensure that corresponding holes are being centered.



2215-01

## BURET

This buret has a transparent body and a leakproof stopcock fitted with a self lubricating PTFE plug. Each Buret is individually calibrated to give maximum accuracy. It is unaffected by dilute mineral acids ~ bases except Hydrofluoric Acid & Ammonium Hydroxide. The pH range of 1-14 is ideal and can be used up to 5% wt/wt of acids or 30% bases.

Material: Polymethyl Methacrylate

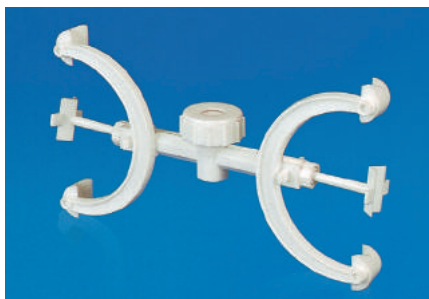
Capacity	Cat. No.
25mL	2229-01
50mL	2229-02



# LABORATORYWARE

## FISHER CLAMP

These clamps are moulded in Polypropylene making it completely corrosion-proof. The spring loaded jack in the middle provides a vice like grip to the Buret and prevents it from slipping. Two tapered wedges are provided to ensure firm on rods having dia 10-12mm.



Particulars	Cat. No.
Single	2275-00
Double	2275-01

## PIPETTE PUMP

The knurled thumb wheel can be rotated to draw up or dispense liquids while the releaser may be pushed in for zip-quick emptying. The moulded chuck has a silicon rubber collet inside to hold various pipets of standard sizes. It resists acids & alkalis and can be easily disassembled for thorough cleaning.



Material: Acrylonitrile Butadiene Styrene

Capacity	Cat. No.
2mL	2235-02
10mL	2235-10
25mL	2235-25

## DROPPING BOTTLES

Blown in Low Density Polyethylene, Dropping Bottles dispense small uniform drops of liquids when pressed lightly.

Capacity	Cat. No.
60mL	2238-60
125mL	2238-12



## REAGENT BOTTLES (NARROW MOUTH)

These Narrow Mouth Reagent Bottles are available in Polypropylene as well as Polyethylene. The PP bottles are rigid, translucent and have excellent clarity. These bottles can be autoclaved filled as well as empty. On the other hand, the Polyethylene bottles too have excellent strength and are unbreakable. The Polypropylene cap has a built in seal ring to make these bottles leakproof.

Material: Low Density Polyethylene & Polypropylene

Capacity	Cat. No.
60mL	2245-60
125mL	2245-12
250mL	2245-25
500mL	2245-50
1000mL	2245-10



## REAGENT BOTTLES (WIDE MOUTH)

These Wide Mouth Reagent Bottles are available in Polypropylene as well as Polyethylene. The PP bottles are rigid, translucent and have excellent clarity. These bottles can be autoclaved filled as well as empty. On the other hand, the Polyethylene bottles too have excellent strength and are unbreakable. The Polypropylene Cap has a built in seal ring to make these bottles leakproof.

Material: Low Density Polyethylene & Polypropylene

Capacity	Cat. No.
60mL	2246-60
125mL	2246-12
250mL	2246-25
500mL	2246-50
1000mL	2246-10



## WASH BOTTLES

Solutions can be poured easily by squeezing the bottle lightly. The cap is fitted with a flexible polyethylene delivery tube which can be aimed wherever required.

Capacity	Cat. No.
250mL	2265-25
500mL	2265-50
125mL	2265-12



# LABORATORYWARE

## WASH BOTTLES (NEW TYPE)

The distinguishing feature in these bottles is the built in delivery tube making it a one piece Wash Bottle. These Bottles are graduated on the outer surface to give an approximate idea about the volume of solution filled or dispensed.



Capacity	Cat. No.
250mL	2266-25
500mL	2266-50
125mL	2266-12

## CONICAL FLASK

Made of Polypropylene, these cone shaped flasks are rigid, translucent & autoclavable.



Capacity	Cat. No.
100mL	2270-10
250mL	2270-25
500mL	2270-50

## SPATULA

Moulded in Polypropylene, spatula consists of a spoon on one side while the other end is a flat construction with a knife edge. This edge is helpful in breaking up crystals of different salts while the spoon is used to draw salts from the containers.

Length	Cat. No.
150mm	2084-31
200mm	2084-32



## FLASK STAND

Can hold round bottom flasks up to 10L

Material: Polypropylene

2124-00



## ATOMIC MODEL SET

These sets consist of moulded balls of different colors and sizes along with connecting lugs of different sizes. These sets are very helpful in modelling different organic & inorganic compounds. SENIOR SET: This set consists of 185 lugs & 370 balls of prescribed colors & sizes. Packed in a moulded box having separate space for every particular color & size of ball. JUNIOR SET: This set consists of 37 connecting lugs & 75 balls of different colors & sizes packed in a moulded box.

Material: Polystyrene

Particulars	Cat. No.
Senior Set	2120-00
Junior Set	2120-01

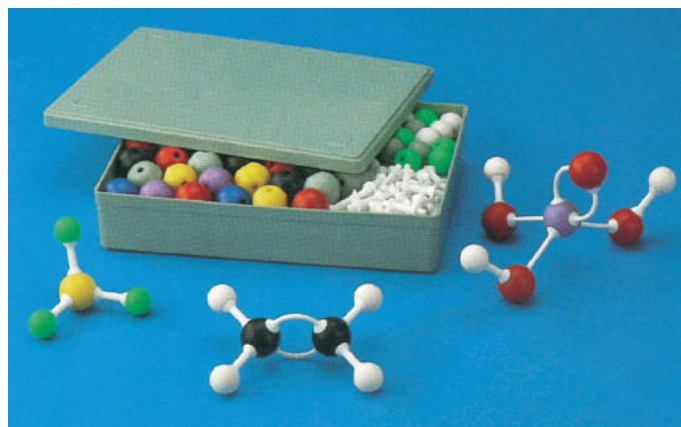


## ATOMIC MODEL SET (NEW DESIGN)

This set consists of moulded balls of different colors & sizes along with connectors of different sizes. The sizes & shapes of the balls & connecting lugs have been designed in accordance with internationally acceptable standards.

Material: Polystyrene

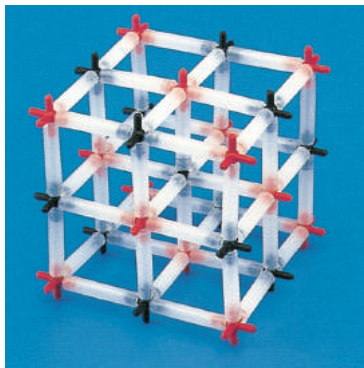
Particulars	Cat. No.
Senior Set	2120-05
Junior Set	2120-06



# LABORATORYWARE

## CRYSTAL MODEL SETS

These Crystal Model Sets contain different colored jacks (Red, Black & White) & connectors (long & short) in a prescribed number to be joined together in an illustrated way to form structures like Diamond, Graphite & Sodium Chloride.



Material: Polyethylene

Particulars	Cat. No.
Diamond	2121-01
Sodium Chloride	2121-02
Graphite	2121-03

## SEPARATORY FUNNEL

This pear shape flask is fitted with a self lubricating, push fitted PTFE plug.

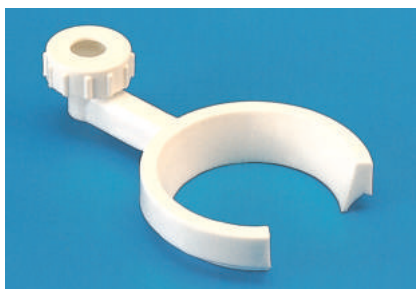


Material: Polypropylene

Capacity	Cat No.
100mL	2126-01
250mL	2126-02
500mL	2126-05.

## SEPARATORY FUNNEL HOLDER

Made of polypropylene these corrosion free holder provide clear view and allows unobstructed placement of the separatory funnel. Two tapered wedges are provided to ensure firm grip on rods of 10-12mm.



Material: Polypropylene

2126-20

## SILICA-WARE



Translucent Silica-ware. Withstands up-to 800° C

### CRUCIBLES WITH LID

Cat. No.	Capacity mL
2273-01	15
2273-02	25
2273-03	50
2273-04	100

### CRUCIBLES WITHOUT LID

Cat. No.	Capacity mL
2273-11	15
2273-12	25
2273-13	50
2273-14	100

## BASINS

With spout. Round Bottom

Cat. No.	Capacity mL	Diameter mm
2273-21	35	50-55
2273-22	70	70-75
2273-23	100	80-85
2273-24	150	90-95
2273-25	200	98-103

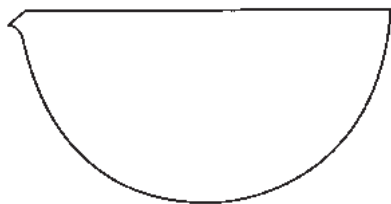
# PORCELAINWARE

## EDUCATIONAL GRADE PORCELAIN WARE

All dimensions in this section are nominal only

### EVAPORATING BASINS (CRYSTALLIZING), CHINA DISHES, (PORCELAIN)

With spout. Glazed inside and outside except on rim. Round bottom.

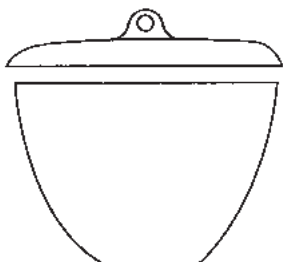


Rim dia.	Volume	Cat. No.
50mm	30mL	5301-01
60mm	40mL	5301-02
75mm	80mL	5301-03
85mm	125mL	5301-04
100mm	175mL	5301-05
110mm	250mL	5301-06
125mm	450mL	5301-07
150mm	600mL	5301-08
200mm	1000mL	5301-09
250mm	2000mL	5301-10
300mm	3000mL	5301-11

### CRUCIBLES, WIDE FORM, PORCELAIN

For use at temperatures up to 800°C. Glazed inside and outside except for outside bottom surface. With lid.

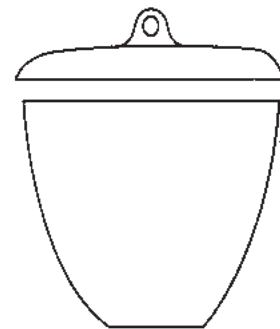
Capacity	Cat. No.
5mL *	5302-01
10mL	5302-02
15mL	5302-03
18mL	5302-04
25mL	5302-05
30mL	5302-06
50mL	5302-07
80mL	5302-08
100mL	5302-09
200mL	5302-10
*Without lid	



### CRUCIBLES, TALL FORM, PORCELAIN

For use at temperatures up to 800°C. Glazed inside and outside except for outside bottom surface. With lid.

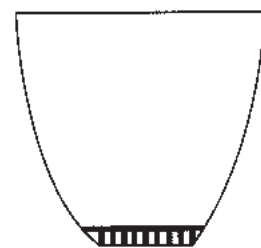
Capacity	Cat. No.
10mL	5303-01
15mL	5303-02
18mL	5303-03
25mL	5303-04
30mL	5303-05
50mL	5303-06
80mL	5303-07
100mL	5303-08



### CRUCIBLES, FILTERING, GOOCH, PORCELAIN

For use at temperatures up to 800°C. With perforated bottom. Glazed inside and outside except for outside bottom surface, without lid.

Capacity	Cat. No.
20mL	5304-01
25mL	5304-02
30mL	5304-03
50mL	5304-04
100mL	5304-05



### FILTER DISCS FOR GOOCH CRUCIBLES, PORCELAIN

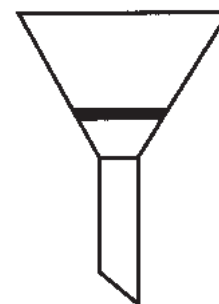
Without lid.

Diameter	Cat. No.
20mm	5305-01
25mm	5305-02

### FUNNELS, HIRSCH, PORCELAIN

With integral perforated plate and conical sides. Tapered stem. Glazed inside and outside except for rim.

Diameter	Cat. No.
25mm	5306-01
35mm	5306-02
50mm	5306-03
60mm	5306-04
75mm	5306-05
100mm	5306-06



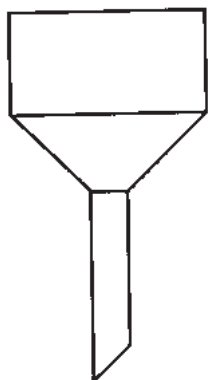


# PORCELAINWARE

## FUNNELS, BUCHNER, PORCELAIN

With an integral perforated plate and straight sides. Glazed inside and outside except for rim. Slightly tapered stem.

Diameter	Cat. No.
60mm	5307-01
75mm	5307-02
85mm	5307-03
90mm	5307-04
100mm	5307-05
110mm	5307-06
125mm	5307-07
150mm	5307-08
200mm	5307-09
250mm	5307-10
300mm	5307-11



## SPOTTING PLATES, PORCELAIN

Suitable for observing color reactions. Extensively used in semi-micro chemistry. Glazed top and sides. Depressions are 22mm in diameter and 8mm deep.



Number of depressions	6	12
Cat. No.	5310-01	5310-02

## MERCURY TROUGHS, PORCELAIN



Shape	Cat. No.
Round form	5311-01
Oval form	5311-02

## PESTLE AND MORTAR SETS, PORCELAIN

With pouring lip. Glazed outside and rough inside. Footed bottom for stability. Pestles are oversized for hand comfort and are unglazed on the bottom. Larger sizes have wooden handles.

Outer Dia	Cat. No.
60mm	5308-01
75mm	5308-02
100mm	5308-03
115mm	5308-04
125mm	5308-05
150mm	5308-06
175mm	5308-07
200mm	5308-08
250mm	5308-09
300mm	5308-10
350mm	5308-11



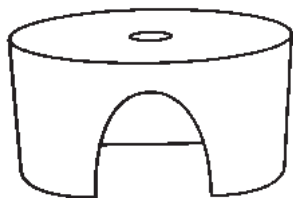
## POROUS POTS, EMPTY, PORCELAIN

For use with voltaic cells. Unglazed porcelain cylindrical cups.



Height x diameter	Cat. No.
75 x 35mm	5312-01
100 x 25mm	5312-02
120 x 25mm	5312-03
150 x 50mm	5312-04
160 x 60mm	5312-05

## BEEHIVE SHELVES, PORCELAIN

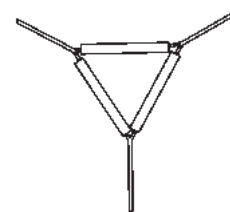


Diameter	75mm	85mm	100mm
Cat. No.	5309-01	5309-02	5309-03

## CRUCIBLE TRIANGLES (CLAY PIPE TRIANGLES), PORCELAIN

For supporting crucibles and dishes when heating on gas burner etc.

With pipe stems on galvanized iron wire triangles.



Side length	50mm	60mm	75mm
Cat. No.	5313-01	5313-02	5313-03

# GLASSWARE

ALL GLASS MENTIONED HEREIN IS BOROSILICATE GLASS, UNLESS OTHERWISE MENTIONED.

## SOCKETS, SINGLE (ROLLED SHOULDER)

Cat. No.	Socket
G500001	7/16
G500002	10/19
G500003	12/21
G500004	14/23
G500005	19/26
G500006	24/29
G500007	29/32
G500008	34/35
G500009	40/38
G500010	45/40
G500011	50/42
G500012	55/44



## CONE, DOUBLE (PLAIN END)

Cat. No.	Cone Size
G500115	10/19
G500116	14/23
G500117	19/26
G500118	24/29
G500119	29/32
G500120	34/35



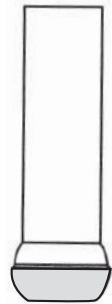
## CONES, SINGLE (PLAIN END)

Cat. No.	Cone Size
G500101	7/16
G500102	10/19
G500103	12/21
G500104	14/23
G500105	19/26
G500106	24/29
G500107	29/32
G500108	34/35
G500109	40/38
G500110	45/40
G500111	50/42
G500112	55/44



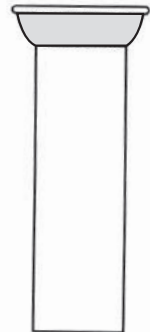
## SPHERICAL BALL JOINT

Cat. No.	Cup Joint (male)
G500030	S13
G500031	S13
G500032	S19
G500033	S29
G500034	S35
G500035	S41



## SPHERICAL CUP JOINT

Cat. No.	Cup Joint (female)
G500130	S13
G500131	S13
G500132	S19
G500133	S29
G500134	S35
G500135	S41



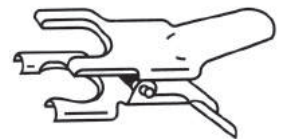
## SOCKETS, DOUBLE (ROLLED SHOULDER)

Cat. No.	Socket Size
G500015	7/16
G500016	10/19
G500017	14/23
G500018	19/26
G500019	24/29
G500020	29/32
G500021	34/35



## JOINTS CLIPS, METAL

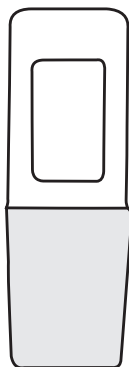
Cat. No.	To Fit Spherical Joint Size	To Fit Flat Flange Joint Size
G500140	S13	-
G500141	S19	-
G500142	S29	-
G500143	S35	-
G500144	S41	-



# GLASSWARE

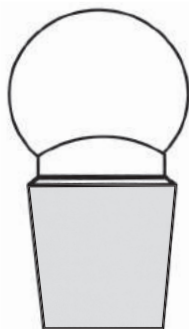
## STOPPERS, HOLLOW

Cat. No.	Cone
G582704	10/19
G582701	14/23
G582702	19/26
G582703	24/29
G582705	29/32
G582706	34/35



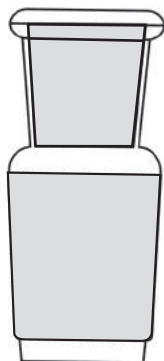
## STOPPERS SOLID, PENNY OR FLAT HEAD

Cat. No.	Cone
G582720	10/19
G582721	14/23
G582722	19/26
G582723	24/29
G582724	29/32
G582725	34/35



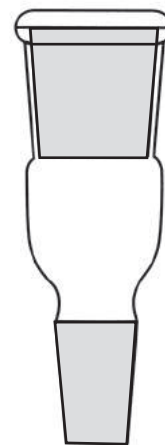
## REDUCTION, ADAPTERS

Cat. No.	Socket Size	Cone Size
G580301	14/23	19/26
G580302	14/23	24/29
G580303	14/23	29/32
G580304	19/26	24/29
G580305	19/26	29/32
G580306	19/26	34/35
G580307	19/26	40/38
G580308	19/26	45/40
G580309	19/26	55/44
G580310	24/29	29/32
G580311	24/29	34/35
G580312	24/29	40/38
G580313	24/29	45/40
G580314	24/29	50/42
G580315	24/29	55/44
G580316	24/29	34/35
G580317	24/29	40/38
G580318	34/35	40/38
G580319	34/35	50/42
G580320	34/35	55/44
G580321	40/38	55/44



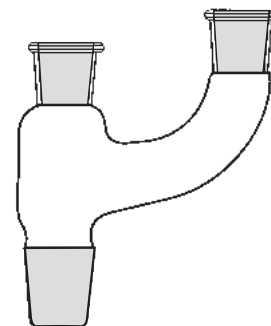
## EXPANSION, ADAPTERS

Cat. No.	Socket Size	Cone Size
G580201	19/26	14/23
G580202	24/29	14/23
G580203	24/29	19/26
G580204	29/32	19/26
G580205	29/32	24/29
G580206	34/35	19/26
G580207	34/35	24/29
G580208	34/35	29/32
G580209	40/38	24/29



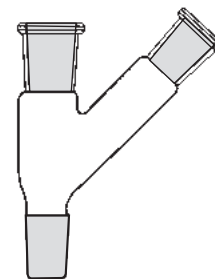
## MULTIPLE ADAPTERS, WITH TWO NECKS PARALLEL

Cat. No.	Socket Size	Cone Size
G580501	14/23	14/23
G580502	19/26	19/26
G580503	19/26	24/29
G580504	24/29	24/29
G580505	19/26	34/35
G580506	29/32	29/32



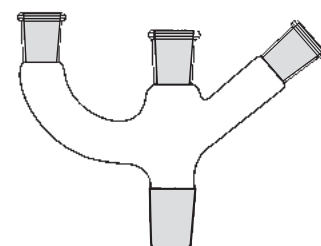
## MULTIPLE ADAPTERS, WITH TWO NECKS. ONE VERTICAL & ONE AT 45°

Cat. No.	Socket Size	Cone Size
G580515	19/26	19/26
G580516	19/26	24/29
G580517	19/26	34/35



## MULTIPLE ADAPTERS, WITH THREE NECKS. TWO PARALLEL & ONE AT 45°

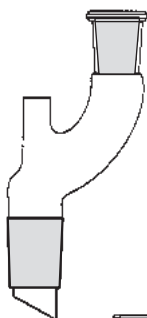
Cat. No.	Socket Size	Cone Size
G580520	19/26	24/29
G580521	19/26	29/32
G580522	19/26	34/35
G580523	19/26	45/40
G580524	19/26	55/44



# GLASSWARE

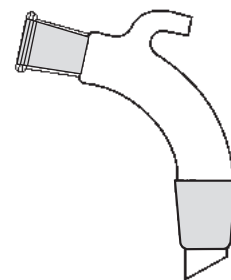
## SWAN NECK ADAPTERS

Cat. No.	Socket Size	Cone Size
G580528	19/26	19/26
G580529	19/26	24/29
G580530	24/29	24/29
G580531	24/29	34/35



## BENDS, WITH VENT

Cat. No.	Socket Size	Cone Size
G581101	14/23	14/23
G581102	19/26	19/26
G581103	19/26	24/29
G581104	24/29	24/29
G581105	34/35	34/35



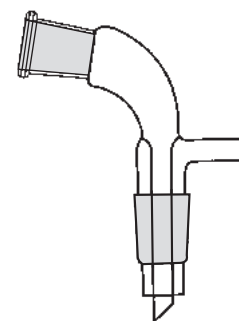
## DELIVERY ADAPTERS, STRAIGHT

Cat. No.	Socket Size
G580815	14/23
G580816	19/26
G580817	24/29
G580818	34/35



## BENDS, WITH VACUUM CONNECTION

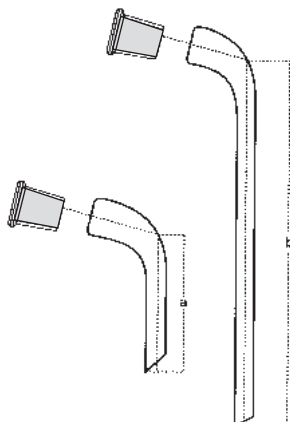
Cat. No.	Socket Size	Cone Size
G581201	14/23	14/23
G581202	19/26	19/26
G581203	19/26	24/29
G581204	24/29	24/29
G581205	24/29	34/35
G581206	34/35	34/35



## BENDS, PLAIN

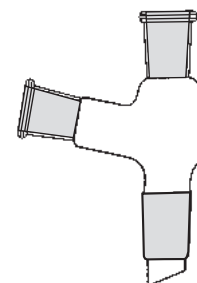
### SHORT STEM

Cat. No.	Socket Size	Approx. Length 'b' mm
G580801	14/23	65
G580802	19/26	65
G580803	24/29	65
G580804	29/32	65



## BENDS, SOCKET TO CONE WITH VERTICAL SOCKET

Cat. No.	Socket Size	Cone Size
G581115	14/23	14/23
G581116	19/26	19/26
G581117	19/26	24/29

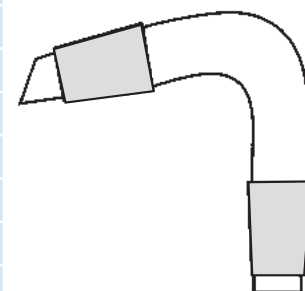


### LONG STEM

Cat. No.	Socket Size	Approx. Length 'b' mm
G580701	10/19	120
G580702	14/23	190
G580703	19/26	200
G580704	24/29	200
G580705	29/32	200

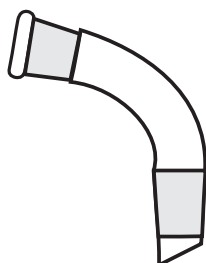
## RECOVERY BENDS, SLOPING

Cat. No.	Cone Size to fit flask	Cone Size to fit condenser
G581120	14/23	14/23
G581121	24/29	14/23
G581122	19/26	19/26
G581123	24/29	19/26
G581124	29/32	19/26
G581125	34/35	19/26
G581126	24/29	24/29
G581127	34/35	24/29
G581128	55/44	24/29
G581129	34/35	34/35



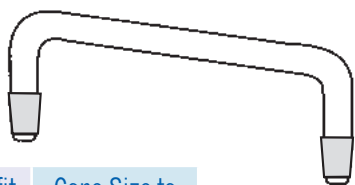
## BENDS, PLAIN SOCKET TO CONE

Cat. No.	Socket Size	Cone Size
G581001	19/26	19/26
G581002	19/26	24/29
G581003	24/29	24/29



# GLASSWARE

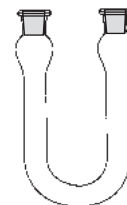
## RECEIVER BENDS, VERTICAL



Cat. No.	Cone Size to fit flask	Cone Size to fit condenser
G581135	14/23	14/23
G581136	19/26	19/26
G581137	24/29	14/23
G581138	24/29	24/29
G581139	34/35	34/35

## U TUBE, WITH SOCKETS

Cat. No.	Socket
G581170	14/23
G581171	19/26

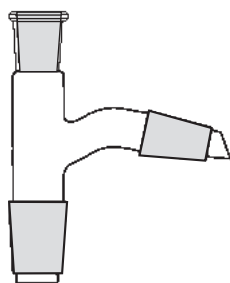


## DRYING TUBE

Cat. No.	Cone
G5811503	14/23
G5811501	19/26
G5811502	24/29

## STILLHEADS PLAIN, WITH THERMOMETER SOCKET

Cat. No.	Cone Size to fit flask	Cone Size to fit condenser
G582601	14/23	14/23
G582602	19/26	19/26
G582603	24/29	19/26
G582604	29/32	19/26
G582605	34/35	19/26
G582606	24/29	24/29
G582607	34/35	24/29
G582608	55/44	24/29
G582609	34/35	34/35
G582610	55/44	34/35



## THERMOMETER, POCKET

Cat. No.	Cone
G581601	14/23
G581602	19/26
G581603	24/29
G581601	34/35



## AIR LEAK TUBE/GAS INLET TUBE

Cat. No.	Cone
G581403	14/23
G581401	19/26
G581402	24/29
G581404	34/35



## SPLASH HEAD, ADAPTER

Cat. No.	Cone Size to fit flask	Cone Size to fit condenser
G581150	19/26	24/29



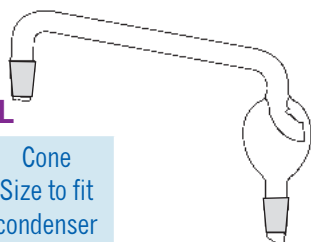
## TEST TUBE WITH SOCKET, WITHOUT STOPPER

Cat. No.	Cone	O.D. mm	Overall Length (mm)	Capacity (mL)
G500401	10/19	14	100	5
G500402	12/21	16	100	10
G500403	14/23	18	100	14
G500404	14/23	18	125	16
G500405	14/23	18	150	19
G500406	19/26	22	100	19
G500407	19/26	22	150	31
G500408	24/29	28	150	54
G500409	24/29	28	200	75
G500410	34/35	40	250	195

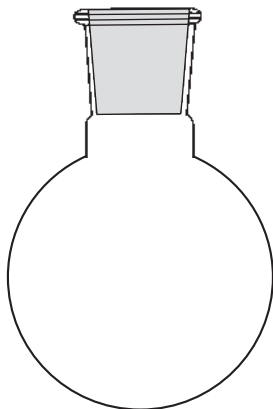


## SPLASH HEADS, VERTICAL

Cat. No.	Cone Size to fit flask	Cone Size to fit condenser
G581155	19/26	19/26
G581156	24/29	19/26
G581157	34/35	19/26
G581158	24/29	24/29
G581159	34/35	24/29



# GLASSWARE



**FLASK ROUND BOTTOM,  
SHORT NECK**

Cat. No.	Nominal Capacity ml	Socket Size
G582303	50	19/26
G582302	50	24/29
G582305	100	19/26
G582306	100	24/29
G582315	100	29/32
G582316	100	34/35
G582317	150	19/26
G582307	150	24/29
G582318	150	29/32
G582319	150	34/35
G582320	250	19/26
G582308	250	24/29
G582321	250	29/32
G582322	250	34/35
G582323	500	19/26
G582309	500	24/29
G582324	500	29/32
G582325	500	34/35
G582310	1000	24/29
G582326	1000	29/32
G582327	1000	34/35
G582328	2000	24/29
G582329	2000	29/32
G582330	2000	34/35
G582331	5000	45/40

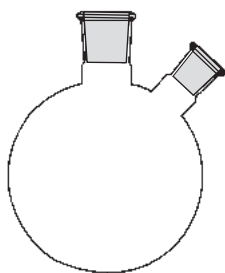


**FLASK FLAT BOTTOM,  
SHORT NECK**

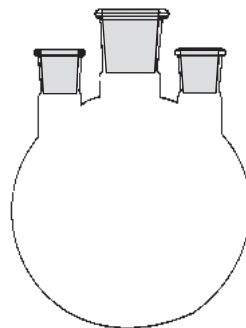
Cat. No.	Nominal Capacity mL	Socket Size
G582350	50	19/26
G582351	50	24/29
G582352	100	19/26
G582353	100	24/29
G582354	100	29/32
G582355	100	34/35
G582356	150	19/26
G582357	150	24/29
G582358	150	29/32
G582359	150	34/35
G582360	250	19/26
G582361	250	24/29
G582362	250	29/32
G582363	250	34/35
G582364	500	19/26
G582365	500	24/29
G582366	500	29/32
G582367	500	34/35
G582368	1000	24/29
G582369	1000	29/32
G582370	1000	34/35
G582371	2000	24/29
G582372	2000	29/32
G582373	2000	34/35
G582374	5000	45/40

# GLASSWARE

## FLASKS ROUND BOTTOM, TWO NECKS



Cat. No.	Nominal Capacity mL	Socket Size
G500201	100	24/29
G500202	100	24/29
G500203	250	24/29
G500204	250	24/29
G500205	500	24/29
G500206	500	24/29
G500207	1000	24/29
G500208	1000	24/29
G500209	2000	34/35

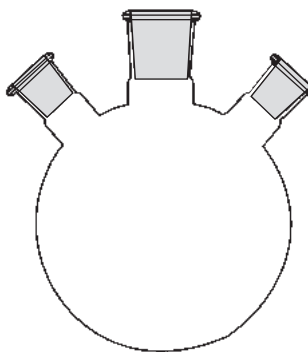


## THREE NECKS PARALELL

Cat. No.	Nominal Capacity mL	Centre Socket	Side Socket
G500250	250	24/29	19/26
G500251	250	29/32	14/23
G500252	500	24/29	19/26
G500253	500	29/32	14/23
G500254	500	29/32	19/26
G500255	1000	24/29	19/26
G500256	1000	29/32	19/26
G500257	1000	34/35	19/26
G500258	1000	34/35	24/29
G500259	1000	45/40	19/26
G500260	2000	24/29	19/26
G500261	2000	29/32	19/26
G500262	2000	29/32	29/32
G500263	2000	34/35	19/26
G500264	2000	34/35	24/29
G500265	2000	45/40	29/32
G500266	3000	34/35	19/26
G500267	3000	34/35	24/29
G500268	5000	34/35	24/29

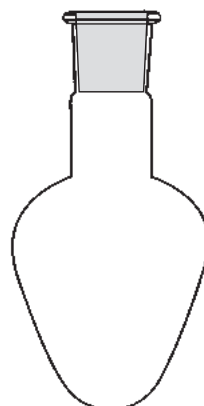
## FLASKS, ROUND BOTTOM, THREE NECKS- CENTER NECK AND TWO ANGLED SIDE NECKS

Cat. No.	Nominal Capacity mL	Centre Socket	Side Sockets
G500220	100	19/26	14/23
G500221	100	24/29	24/23
G500222	100	24/29	19/26
G500223	250	19/26	19/26
G500224	250	24/29	14/23
G500225	250	24/29	19/26
G500226	250	29/32	14/23
G500227	250	29/32	19/26
G500228	500	24/29	14/23
G500229	500	24/29	19/26
G500230	500	29/32	14/23
G500231	500	29/32	19/26
G500232	1000	24/29	14/23
G500233	1000	24/29	19/26
G500234	1000	29/32	19/26
G500235	1000	29/32	29/32
G500236	1000	34/35	19/26
G500237	2000	24/29	19/26
G500238	2000	34/35	19/26
G500239	3000	34/35	19/26



## FLASK PEAR SHAPE, SINGLE NECK

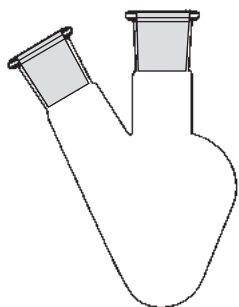
Cat. No.	Nominal Capacity mL	Side Socket
G582004	5	10/19
G582005	5	14/23
G582006	10	10/19
G582007	10	14/23
G582008	25	10/19
G582009	25	14/23
G582001	50	14/23
G582010	50	19/26
G582002	100	14/23
G582003	100	19/26
G582011	100	24/29



## FLASK, ROUND BOTTOM,

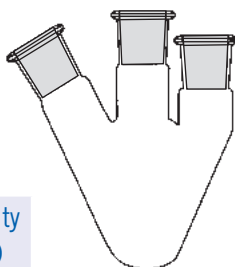
# GLASSWARE

## FLASKS PEAR SHAPE, TWO NECK



Cat. No.	Nominal Capacity mL	Centre Socket	Side Socket
G582201	50	14/23	14/23

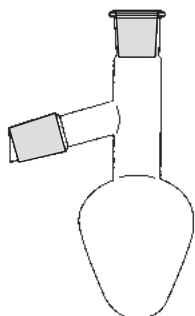
## FLASKS, PEAR SHAPE, THREE NECK



Cat. No.	Socket	Cone	Capacity (mL)
G582103	14/23	14/23	25
G582101	14/23	14/23	50
G582102	14/23	14/23	100

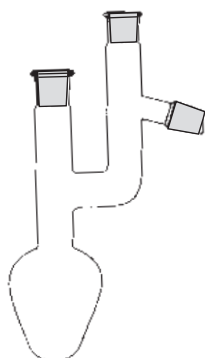
## FLASKS, PEAR SHAPE, DISTILLATION

Cat. No.	Nominal Capacity mL	Centre Socket	Side Socket
G500301	10	14/23	14/23
G500302	25	14/23	14/23
G500303	50	14/23	14/23
G500304	100	14/23	14/23



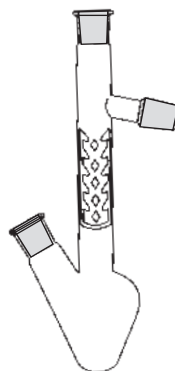
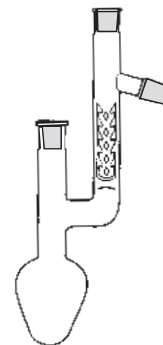
## FLASK, PEAR SHAPE, CLAISEN

Cat. No.	Nominal Capacity mL	Socket Size	Cone Size
G500311	10	14/23	14/23
G500312	25	14/23	14/23
G500313	50	14/23	14/23
G500314	100	14/23	14/23



## FLASK, PEAR SHAPE, CLAISEN-VIGREUX

Cat. No.	Nominal Capacity mL	Socket Size	Cone Size
G500320	25	14/23	14/23
G500321	50	14/23	14/23
G500322	100	14/23	14/23



## FLASKS, PEAR SHAPE VIGREUX WITH SIDE NECK

Cat. No.	Nominal Capacity mL	Main Socket	Side Socket	Side Cone
G500325	25	14/23	10/19	14/23
G500326	50	14/23	10/19	14/23
G500327	100	14/23	10/19	14/23

## FLASKS, FLORENTINE

Cat. No.	Nominal Capacity mL	Socket Size
G500330	50	29/32
G500331	100	24/29
G500332	100	29/32
G500333	250	24/29
G500334	250	29/32
G500335	500	24/29
G500336	500	29/32
G500337	1000	24/29
G500338	1000	29/32





# GLASSWARE

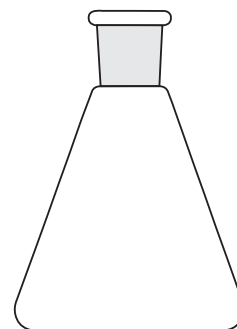
## FLASKS, KJELDAHL

Cat. No.	Nominal Capacity mL	Approx. Overall height mm	Socket Size
G500340	50	162	19/26
G500341	100	165	19/26
G500342	100	265	24/29
G500343	300	295	24/29
G500344	500	305	24/29
G500345	800	325	24/29



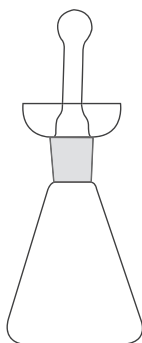
## FLASKS, CONICAL, ERLLENMEYER

Cat. No.	Nominal Capacity mL	Socket Size
G581915	5	10/19
G581916	5	14/23
G581917	10	10/19
G581918	10	14/23
G581919	25	10/19
G581920	25	14/23
G581921	25	19/26
G581901	50	14/23
G581902	50	19/26
G581922	50	24/29
G581903	100	14/23
G581904	100	19/26
G581923	100	24/29
G581924	100	29/32
G581925	150	19/26
G581926	150	24/29
G581927	150	29/32
G581905	250	19/26
G581906	250	24/29
G581928	250	29/32
G581929	250	34/35
G581907	500	19/26
G581908	500	24/29
G581930	500	29/32
G581931	500	34/35
G581932	1000	24/29
G581933	1000	29/32
G581934	1000	34/35
G581935	2000	29/32
G581936	2000	34/35



## FLASKS, IODINE

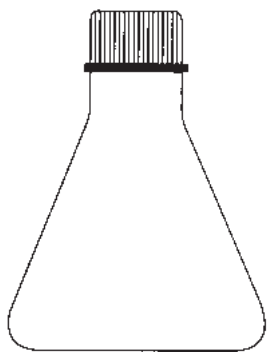
Cat. No.	Nominal Capacity mL	Joint Size	Min. Cup Capacity mL
G500345	250	24/29	20
G500346	250	29/32	20
G500347	500	24/29	20
G500348	500	29/32	20



## FLASKS CONICAL

With screw cap and teflon liner

Cat. No.	Capacity
G581940	25
G581941	50
G581942	100
G581943	150
G581944	250
G581945	500
G581946	1000
G581947	2000



## ADAPTORS, CONE/SCREW THREAD

Cat. No.	Socket Size	Thread
G580401	14/23	13
G580402	19/26	13
G580403	24/29	13



# GLASSWARE

## TUBES CULTURE MEDIA, ROUND BOTTOM

With screw cap & teflon liner

Cat. No.	Capacity mL	O.D.x Length (mm)
G500420	5	15 x 75
G500421	10	15 x 125
G500422	15	15 x 150
G500423	25	18 x 150
G500424	30	25 x 100
G500425	45	25 x 150
G500426	60	25 x 200
G500427	100	32 x 200



## CENTRIFUGE TUBE, CONICAL BOTTOM, PLAIN

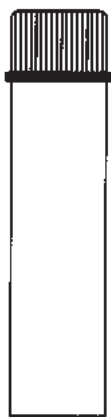
Cat. No.	Capacity mL	Height x O.D. (mm)
G552603	3	76 X 10
G552605	5	100 X 13
G552610	10	110 X 15
G552612	12	110 X 16
G552615	15	120 X 17
G552625	25	125 X 22
G552650	50	125 X 28



## TUBES CULTURE MEDIA FLAT BOTTOM

With screw cap & teflon liner

Cat. No.	Capacity mL	O.D.x Length (mm)
G500430	5	18 x 45
G500431	10	25 x 57
G500432	30	25 X 95
G500433	40	25 X 145



## CENTRIFUGE TUBE, WITH SCREW CAP, PLAIN. CONICAL BOTTOM

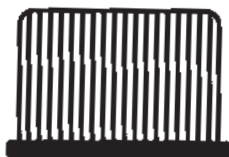
Cat. No.	Capacity mL	Height x O.D. (mm)
G552630	10	110 X 15
G552631	15	120 X 17



## SCREW CAP FOR CULTURE TUBES

With teflon liner

Cat. No.	Size (mL)
G500440	15
G500441	18
G500442	25



## CENTRIFUGE TUBE, WITH SCREW CAP, GRADUATED. CONICAL BOTTOM

Cat. No.	Capacity mL	Height x O.D. (mm)
G552540	10	110 X 15
G552541	15	120 X 17



## CENTRIFUGE TUBE, CONICAL BOTTOM, GRADUATED

Cat. No.	Capacity mL	Height x O.D. (mm)
G552505	5	100 x 13
G552510	10	110 x 15
G552525	15	120 x 17
G552530	25	125 x 22
G552535	50	125 x 28



## CENTRIFUGE TUBE, PLAIN WITH INTERCHANGEABLE STOPPER. CONICAL BOTTOM

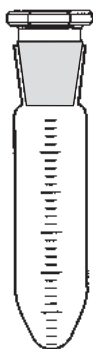
Cat. No.	Capacity mL	Height x O.D. (mm)
G552635	5	100 x 13
G552636	10	110 x 15
G552637	15	120 x 17
G552638	25	125 x 22
G552639	50	125 x 28



# GLASSWARE

## CENTRIFUGE TUBE, GRADUATED, WITH INTERCHANGEABLE STOPPER. CONICAL BOTTOM

Cat. No.	Capacity mL	Length x O.D. (mm)
G552548	5	100 x 13
G552549	10	110 x 15
G552550	15	120 x 17
G552551	25	125 x 22
G552552	50	125 x 28



## TEST TUBES, ROUND BOTTOM, WITH RIM, PLAIN

Cat. No.	Capacity mL	Length x O.D. (mm)	Wall Thickness
G500455	3	10 x 75	1.0
G500456	5	12 x 75	1.0
G500457	8	12 x 100	1.0
G500458	10	15 x 125	1.2
G500459	25	18 x 150	1.2
G500460	50	25 x 150	1.2
G500461	75	25 x 200	1.2



## CENTRIFUGE TUBE, ROUND BOTTOM, GRADUATED

Cat. No.	Capacity mL	Length x O.D. (mm)
G552555	12	16 x 110
G552556	30	24 x 110
G552557	40	28 x 110
G552558	50	30 x 110
G552559	100	45 x 110
G552560	200	55 x 116



## TEST TUBES, ROUND BOTTOM, WITHOUT RIM, PLAIN

Cat. No.	Capacity mL	Length x O.D. (mm)	Wall Thickness
G500462	3	10 x 75	1.0
G500463	5	12 x 75	1.0
G500464	8	12 x 100	1.0
G500465	10	15 x 125	1.2
G500466	25	18 x 150	1.2
G500467	50	25 x 150	1.2
G500468	75	25 x 200	1.2



## TEST TUBE, ROUND BOTTOM, WITH SCREW CAP, GRADUATED

Cat. No.	Size (mm)	Cap. (mL)	Sub. Div. (mL)
G500440	100 x 12	5	0.1
G500441	125 x 16	10	0.1
G500442	150 x 22	25	0.5
G500443	200 x 25	50	1.0



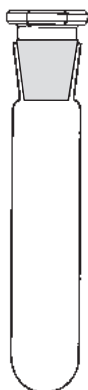
## TEST TUBES, ROUND BOTTOM, WITH RIM, GRADUATED

Cat. No.	Capacity mL	Length x O.D. (mm)
G500470	3	10 x 75
G500471	5	12 x 75
G500472	8	12 x 100
G500473	10	15 x 125
G500474	25	18 x 150
G500475	50	25 x 150
G500476	75	25 x 200



## TEST TUBE, ROUND BOTTOM, WITH INTERCHANGEABLE STOPPER

Cat. No.	Length x Dia. (mm)
G500445	100 x 12
G500446	125 x 15
G500447	150 x 18
G500448	150 x 25
G500449	200 x 25
G500450	200 x 32
G500451	200 x 38



# GLASSWARE

## BURETS, MOHR

For educational institutions and general laboratory work.

With a tooled tip for 16mm i.d. flexible rubber tubing. Calibrated at 20 C as per tolerances shown. Supplied with pinch cock, rubber tubing and glass jet.



With straight bore ground-in PTFE key stopcock.



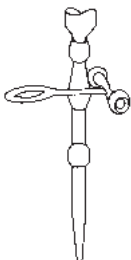
Capacity mL	Subdivision mL	Tol.+ mL	Cat. No.
25	0.10	0.10	G550502
50	0.10	0.10	G550505
100	0.20	0.20	G550510

Capacity mL	Subdivision mL	Tol.+ mL	Cat. No.
25	0.10	0.10	G550922
50	0.10	0.10	G550925
100	0.20	0.20	G550930

## PINCH COCK ATTACHMENT

For Mohr's buret as described above

G550600



## BURETS, WITH SCREW TYPE PTFE STOPCOCK

With a Rotaflow type PTFE stopcock which ensures a leakproof seal, finer flow control, elimination of lubrication and absence of plug seizure.



## BURETS STRAIGHT, WITH STOPCOCK, GEISSLER TYPE

For educational institutions and general laboratory work.

With straight bore ground-in glass key stopcock.



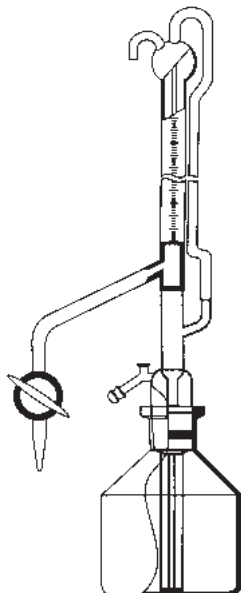
Capacity mL	Subdivision mL	Tol.+ mL	Cat. No.
50	0.10	0.10	G551205
100	0.20	0.20	G551210

Capacity mL	Subdivision mL	Tol.+ mL	Cat. No.
25	0.10	0.10	G550902
50	0.10	0.10	G550905
100	0.20	0.20	G550910

# GLASSWARE

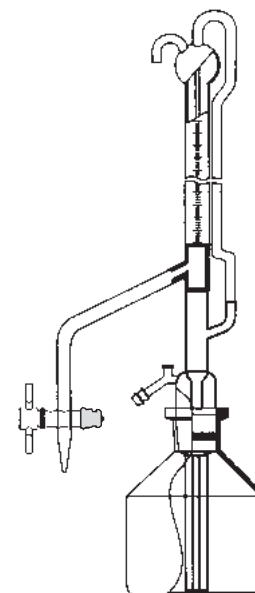
## BURETS AUTOMATIC ZERO,

Mounted on reservoir. With rubber bellow. Glass stopcock.



## BURETS AUTOMATIC ZERO.

Mounted on reservoir. PTFE key stopcock. With rubber bellow.

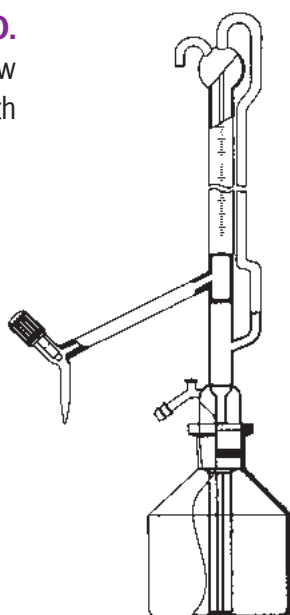


Cat. No.	Capacity mL.	Sub. Div. mL.	Tolerance $\pm$ mL.
G551220	10	0.05	0.05
G551221	25	0.10	0.10
G551222	50	0.10	0.10
G551223	100	0.20	0.20

Cat. No.	Capacity mL.	Sub. Div. mL.	Tolerance $\pm$ mL.
G551240	10	0.05	0.02
G551241	25	0.10	0.05
G551242	50	0.10	0.05
G551243	100	0.20	0.10

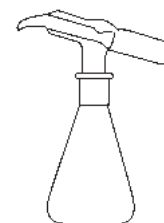
## BURETS AUTOMATIC ZERO.

Mounted on reservoir. With screw type Rotaflow stopcock. With rubber bellow.



## PIPETS, AUTOMATIC, QUICK ACTING (TILT MEASURE), GLASS

For rapid transfer of liquids with limited accuracy with a conical flask and an interchangeable ground glass joint.



Head capacity (mL)	Flask capacity (mL)	Cat. No.
1	100	G551801
2	100	G551802
5	250	G551805
10	250	G551810
20	500	G551820
25	500	G551825

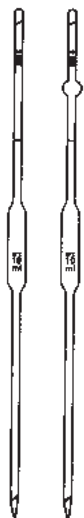
Cat. No.	Capacity mL.	Sub. Div. mL.	Tolerance $\pm$ mL.
G551230	10	0.05	0.05
G551231	25	0.10	0.10
G551232	50	0.10	0.10
G551233	100	0.20	0.20

# GLASSWARE

## BULB PIPETS

With one mark.

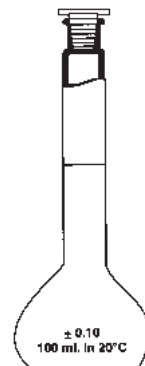
Cat. No.	Capacity mL.	Tolerance $\pm$ mL.	Colour Code
G551840	1	0.015	Blue
G551841	2	0.020	Orange
G551842	5	0.030	White
G551843	10	0.040	Red
G551844	20	0.060	Yellow
G551845	25	0.060	Blue
G551846	50	0.100	Red
G551847	100	1.160	Yellow



## VOLUMETRIC FLASKS

With one graduation mark, polyethylene stopper.

Cat. No.	Capacity mL.	Tolerance $\pm$ mL.	Stopper Size
G500501	5	0.05	7/16
G500502	10	0.05	10/19
G500503	25	0.80	10/19
G500504	50	0.12	12/21
G500505	100	0.20	14/23
G500506	200	0.30	14/23
G500507	250	0.30	14/23
G500508	500	0.50	19/26
G500509	1000	0.80	24/29
G500510	2000	1.20	24/29



## GRADUATED PIPETS

Graduated with zero at the top

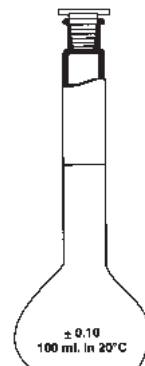
Cat. No.	Capacity mL.	Sub. Div. mL	Tolerance $\pm$ mL.	Colour Code
G551860	0.1	0.01	0.01	Green
G551861	0.2	0.01	0.01	Blue
G551862	0.5	0.02	0.01	Yellow
G551863	1.0	0.01	0.01	Yellow
G551864	1.0	0.10	0.01	Yellow
G551865	2.0	0.02	0.02	Black
G551866	2.0	0.10	0.02	Black
G551867	5.0	0.05	0.05	Red
G551868	5.0	0.10	0.10	Red
G551869	10.0	0.10	0.10	Orange
G551870	25.0	0.20	0.20	White



## VOLUMETRIC FLASKS

With one graduation mark, glass stopper.

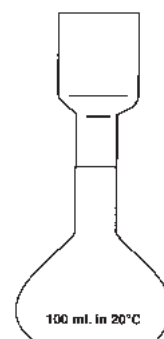
Cat. No.	Capacity mL.	Tolerance $\pm$ mL.	Stopper Size
G500520	5	0.05	7/16
G500521	10	0.05	10/19
G500522	25	0.80	10/19
G500523	50	0.12	12/21
G500524	100	0.20	14/23
G500525	200	0.30	14/23
G500526	250	0.30	14/23
G500527	500	0.50	19/26
G500528	1000	0.80	24/29
G500529	2000	1.20	24/29



## KOHLRAUSH FLASKS (MUG FLASK)

With cup at the top.

Cat. No.	Capacity mL
G500540	50
G500541	100
G500542	200

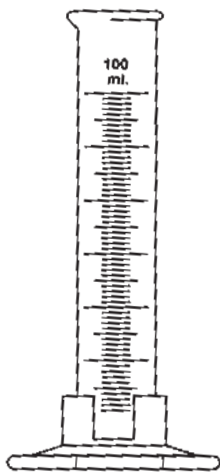


# GLASSWARE

## MEASURING CYLINDERS

With plastic base and protection collar

Cat. No.	Capacity mL	Sub. Div. mL
G556520	5	0.1
G556521	10	0.2
G556522	25	0.5
G556523	50	1.0
G556524	100	1.0
G556525	250	2.0



## SEPARATING FUNNELS

With glass stopcock. Conical shape

Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55003	G555003	30
GP55006	G555006	60
GP55012	G555012	125
GP55025	G555025	250
GP55050	G555050	500
GP55055	G555055	1000
GP55058	G555058	2000



## MEASURING CYLINDERS

Hexagonal base for better stability

Cat. No.	Capacity mL	Sub. Div. mL
G556501	5	0.1
G556503	10	0.2
G556505	25	0.5
G556507	50	1.0
G556510	100	1.0
G556511	250	2.0
G556512	500	5.0
G556513	1000	10.0
G556514	2000	20.0



## SEPARATING FUNNELS

With screw Rotaflow stopcock. Conical shape

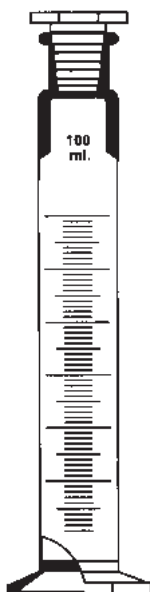
Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55060	G555060	30
GP55061	G555061	60
GP55062	G555062	125
GP55063	G555063	250
GP55064	G555064	500
GP55065	G555065	1000
GP55066	G555066	2000



## MEASURING CYLINDERS

With hexagonal glass base and interchangeable polyethylene stopper

Cat. No.	Capacity	Sub. Div. mL
G556530	5	0.1
G556531	10	0.2
G556532	25	0.5
G556533	50	1.0
G556534	100	1.0
G556535	250	2.0
G556536	500	5.0
G556537	1000	10.0
G556538	2000	20.0



## SEPARATING FUNNELS

With PTFE key stopcock. Conical shape.

Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55070	G555070	30
GP55071	G555071	60
GP55072	G555072	125
GP55073	G555073	250
GP55074	G555074	500
GP55075	G555075	1000
GP55076	G555076	2000

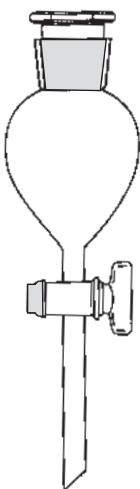


# GLASSWARE

## SEPARATING FUNNELS

With glass stopcock. Globe/pear shape

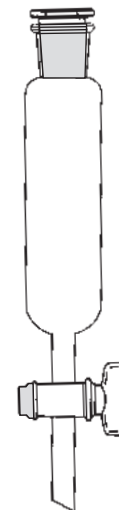
Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55103	G555103	30
GP55106	G555106	60
GP55112	G555112	125
GP55125	G555125	250
GP55150	G555150	500
GP55155	G555155	1000
GP55158	G555158	2000



## DROPPING FUNNELS CYLINDRICAL

With polyethylene stopper and glass stopcock

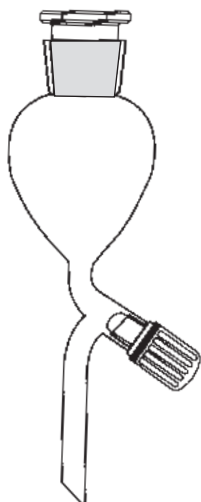
Cat. No.	Capacity mL
G555201	50
G555202	100
G555203	150
G555204	250
G555205	500
G555206	1000



## SEPARATING FUNNELS

With screw Rotaflow globe/pear shape

Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55160	G555160	30
GP55161	G555161	60
GP55162	G555162	125
GP55163	G555163	250
GP55164	G555164	500
GP55165	G555165	1000
GP55166	G555166	2000



## DROPPING FUNNELS CYLINDRICAL, GRADUATED

With polyethylene stopper and glass stopcock

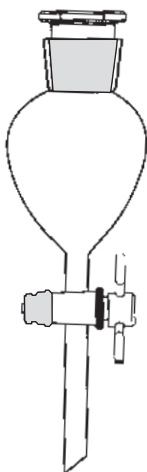
Cat. No.	Capacity mL
G555250	50
G555251	100
G555252	150
G555253	250
G555254	500
G555255	1000



## SEPARATING FUNNELS

With PTFE key stopcock. Globe/pear shape

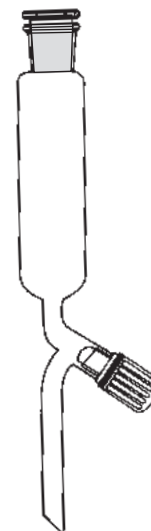
Cat. No. Polyethylene Stopcock	Cat. No. Glass Stopcock	Capacity mL
GP55170	G555170	30
GP55171	G555171	60
GP55172	G555172	125
GP55173	G555173	250
GP55174	G555174	500
GP55175	G555175	1000
GP55176	G555176	2000



## DROPPING FUNNELS CYLINDRICAL

With Rotaflow stopcock & polyethylene stopper

Cat. No.	Capacity mL
G555207	50
G555208	100
G555209	150
G555210	250
G555211	500
G555212	1000



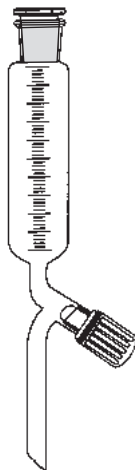


# GLASSWARE

## DROPPING FUNNELS CYLINDRICAL GRADUATED

With Rotaflow stopcock & polyethylene stopper

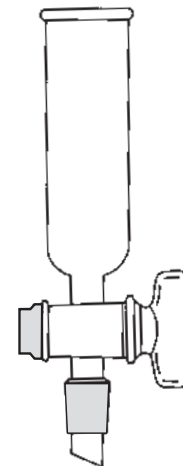
Cat. No.	Capacity mL
G555257	50
G555258	100
G555259	150
G555260	250
G555261	500
G555262	1000



## DROPPING FUNNELS, CYLINDRICAL, OPEN TOP

With glass stopcock. Stem with cone

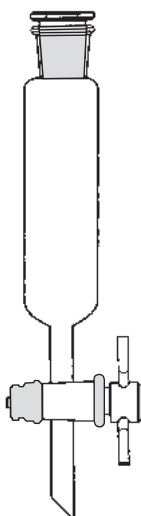
Cat. No.	Capacity mL	Cone
G555280	50	19/26
G555281	100	19/26
G555282	100	24/29
G555283	250	19/26
G555284	250	24/29



## DROPPING FUNNELS CYLINDRICAL

With PTFE key & polyethylene stopper

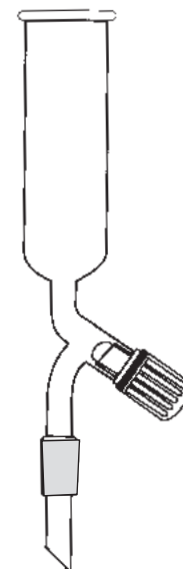
Cat. No.	Capacity mL
G555213	50
G555214	100
G555215	150
G555216	250
G555217	500
G555218	1000



## DROPPING FUNNELS, CYLINDRICAL, OPEN TOP

With Rotaflow stopcock. Stem with cone

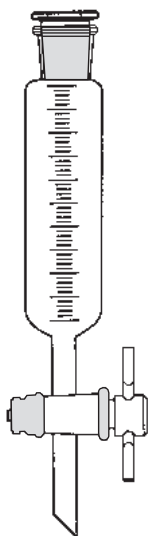
Cat. No.	Capacity mL	Cone
G555285	50	19/26
G555286	100	19/26
G555287	100	24/29
G555288	250	19/26
G555289	250	24/29



## DROPPING FUNNELS CYLINDRICAL GRADUATED

With PTFE key & polyethylene stopper

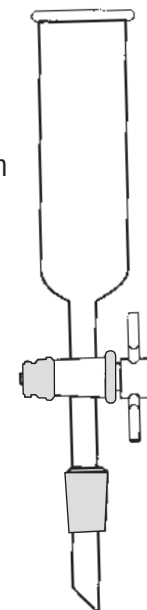
Cat. No.	Capacity mL
G555265	50
G555266	100
G555267	150
G555268	250
G555269	500
G555270	1000



## DROPPING FUNNELS, CYLINDRICAL, OPEN TOP

With screw type PTFE key stopcock. Stem with cone

Cat. No.	Capacity mL	Cone
G555290	50	19/26
G555291	100	19/26
G555292	100	24/29
G555293	250	19/26
G555294	250	24/29

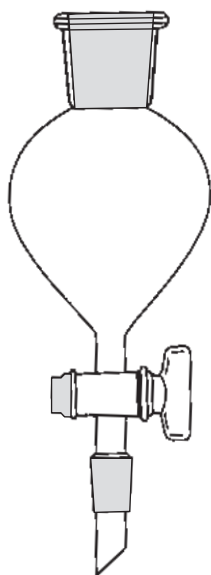


# GLASSWARE

## SEPARATING FUNNELS, PEAR SHAPE

With socket, without stopper. Glass stopcock. Cone on stem

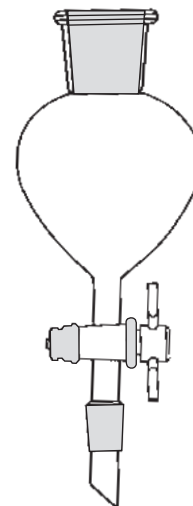
Cat. No.	Capacity mL	Socket	Cone
G555180	25	14/23	14/23
G555181	50	14/23	14/23
G555182	50	19/26	19/26
G555183	100	14/23	14/23
G555184	100	19/26	19/26
G555185	250	14/23	14/23
G555186	250	19/26	19/26
G555187	500	19/26	19/26
G555188	500	24/29	24/29
G555189	1000	19/26	19/26
G555190	1000	24/29	24/29



## SEPARATING FUNNELS, PEAR SHAPE

With socket, without stopper. Screw type PTFE key stopcock. With cone on stem

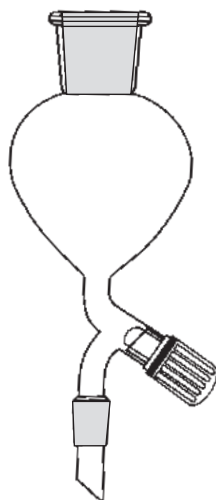
Cat. No.	Capacity mL	Socket	Cone
G555142	25	14/23	14/23
G555143	50	14/23	14/23
G555144	50	19/26	19/26
G555145	100	14/23	14/23
G555146	100	19/26	19/26
G555147	250	14/23	14/23
G555148	250	19/26	19/26
G555149	500	19/26	19/26
G555152	500	24/29	24/29
G555153	1000	19/26	19/26
G555154	1000	24/29	24/29



## SEPARATING FUNNELS, PEAR SHAPE

With socket, without stopper. Rotaflow stopcock. Cone on stem

Cat. No.	Capacity mL	Socket	Cone
G555130	25	14/23	14/23
G555131	50	14/23	14/23
G555132	50	19/26	19/26
G555133	100	14/23	14/23
G555134	100	19/26	19/26
G555135	250	14/23	14/23
G555136	250	19/26	19/26
G555137	500	19/26	19/26
G555138	500	24/29	24/29
G555139	1000	19/26	19/26
G555140	1000	24/29	24/29



## DROPPING FUNNELS CYLINDRICAL

With socket, without stopper. Glass stopcock. Cone on stem

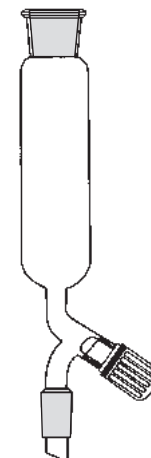
Cat. No.	Capacity mL	Socket	Cone
G555220	25	14/23	14/23
G555221	50	14/23	14/23
G555222	100	14/23	14/23
G555223	100	19/26	19/26
G555224	250	19/26	19/26
G555225	500	19/26	19/26
G555226	1000	19/26	19/26



## DROPPING FUNNELS CYLINDRICAL

With socket, without stopper. Rotaflow stopcock. Cone on stem

Cat. No.	Capacity mL	Socket	Cone
G555230	25	14/23	14/23
G555231	50	14/23	14/23
G555232	100	14/23	14/23
G555233	100	19/26	19/26
G555234	250	19/26	19/26
G555235	500	19/26	19/26
G555236	1000	19/26	19/26



# GLASSWARE



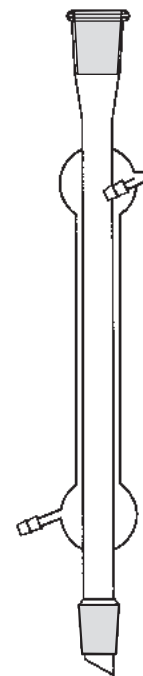
## AIR CONDENSERS

Cat. No.	Socket	Cone	Effective Length mm
G610001	14/23	14/23	200
G610002	19/26	19/26	200
G610003	24/29	24/29	250
G610004	19/26	19/26	400
G610005	24/29	24/29	500
G610006	34/35	34/35	500
G610007	19/26	19/26	600
G610008	24/29	24/29	750
G610009	-	19/26	750
G610010	-	24/29	750
G610011	-	19/26	1000
G610012	-	24/29	1000



## LIEBIG CONDENSERS

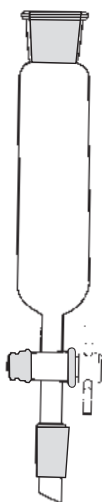
Cat. No.	Socket	Cone	Effective Length mm
G610020	14/23	14/23	150
G610021	19/26	19/26	200
G610022	24/29	24/29	200
G610023	19/26	19/26	300
G610024	24/29	24/29	300
G610025	19/26	19/26	350
G610026	24/29	24/29	350
G610027	19/26	19/26	400
G610028	24/29	24/29	400
G610029	24/29	24/29	500
G610030	24/29	24/29	600
G610031	24/29	24/29	750
G610032	34/35	34/35	500
G610033	34/35	34/35	600
G610034	34/35	34/35	750
G610035	34/35	34/35	900
G610036	-	19/26	300
G610037	-	24/29	350
G610038	-	34/35	250



## DROPPING FUNNELS CYLINDRICAL

With socket, without stopper. Screw type PTFE key stopcock. With cone on stem

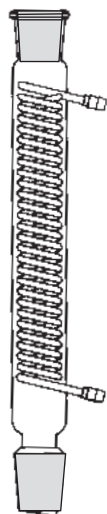
Cat. No.	Capacity mL	Socket	Cone
G555237	25	14/23	14/23
G555238	50	14/23	14/23
G555239	100	14/23	14/23
G555240	100	19/26	19/26
G555241	250	19/26	19/26
G555242	500	19/26	19/26
G555243	1000	19/26	19/26



# GLASSWARE

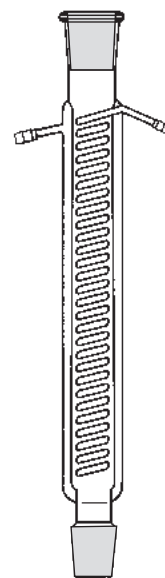
## COIL CONDENSERS (GRAHAM)

Cat. No.	Socket	Cone	Effective Length mm
G610040	14/23	14/23	150
G610041	19/26	19/26	200
G610042	19/26	19/26	250
G610043	24/29	24/29	250
G610044	19/26	19/26	300
G610045	24/29	24/29	300
G610046	24/29	24/29	400
G610047	24/29	24/29	500
G610048	34/35	34/35	500
G610049	34/35	34/35	600



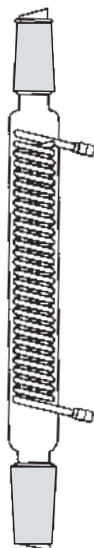
## COIL CONDENSERS (JACKETED)

Cat. No.	Socket	Cone	Effective Length mm
G610060	19/26	19/26	150
G610061	24/29	24/29	150
G610062	-	34/35	150
G610063	-	40/38	150v
G610064	19/26	19/26	200
G610065	24/29	24/29	200
G610066	19/26	19/26	300
G610067	24/29	24/29	300
G610068	24/29	24/29	400
G610069	34/35	34/35	400
G610070	34/35	34/35	500



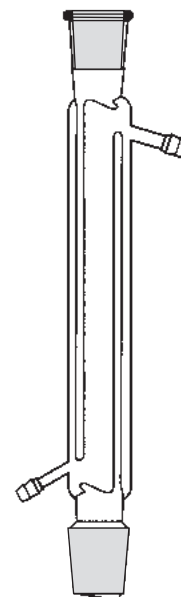
## COIL CONDENSERS (REVERSIBLE)

Cat. No.	Socket	Cone	Effective Length mm
G610055	-	19/26 & 24/29	150
G610056	-	24/29 & 24/29	150
G610057	-	24/29 & 34/35	150



## DAVIES CONDENSERS (DOUBLE SURFACE)

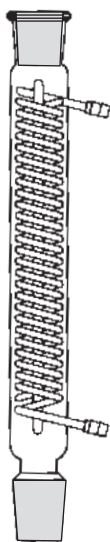
Cat. No.	Socket	Cone	Effective Length mm
G610080	19/26	19/26	150
G610081	24/29	24/29	150
G610082	19/26	19/26	200
G610083	24/29	24/29	200
G610084	29/32	29/32	200
G610085	-	19/26	200
G610086	-	24/29	200
G610087	-	34/35	200
G610088	-	19/26	250
G610089	19/26	19/26	250
G610090	24/29	24/29	250
G610091	19/26	19/26	300
G610092	24/29	24/29	300
G610093	24/29	24/29	400
G610094	24/29	24/29	500
G610095	34/35	34/35	500
G610096	34/35	34/35	600



## COIL CONDENSERS (DOUBLE)

With common inlet

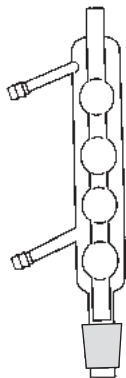
Cat. No.	Socket	Cone	Effective Length mm
G610071	19/26	19/26	200
G610072	24/29	24/29	200
G610073	34/35	34/35	350
G610074	34/35	34/35	450
G610075	34/35	34/35	600



# GLASSWARE

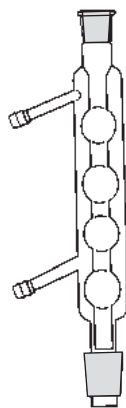
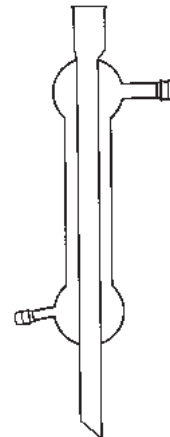
## ALLIHN CONDENSERS (BULB CONDENSER)

Cat. No.	Socket	Cone	Effective Length mm
G610101	-	19/26	200
G610102	-	24/29	200
G610103	-	29/32	200
G610104	-	34/35	200
G610105	-	40/38	200
G610106	-	50/42	200
G610107	-	50/42	250
G610108	19/26	19/26	200
G610109	24/29	24/29	200
G610110	19/26	19/26	300
G610111	24/29	24/29	300
G610112	24/29	24/29	400
G610113	24/29	24/29	500
G610114	34/35	34/35	500
G610115	34/35	34/35	600
G610116	34/35	34/35	750



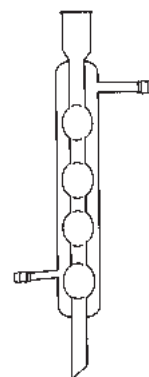
## LIEBIG CONDENSERS

Cat. No.	Effective Length mm
G554320	200
G554330	300
G554340	400
G554350	500
G554360	600



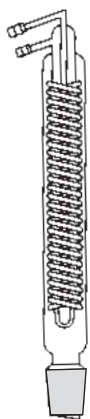
## ALLIHN CONDENSERS (BULB CONDENSER)

Cat. No.	Effective Length mm
G554461	200
G554462	300
G554463	400
G554464	500
G554465	600



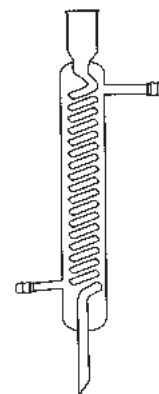
## FRIEDRICHS CONDENSERS

Cat. No.	Socket	Cone	Effective Length mm
G610120	19/26	19/26	150
G610121	24/29	24/29	200
G610122	24/29	24/29	250



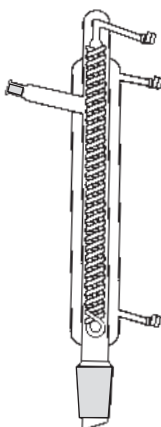
## COIL CONDENSERS (GRAHAM CONDENSER)

Cat. No.	Effective Length mm
G554420	200
G554430	300
G554440	400
G554450	500
G554460	600



## ETHER CONDENSERS

Cat. No.	Socket	Cone	Effective Length mm
G610124	19/26	24/26	150
G610125	24/29	24/29	200
G610126	24/29	24/29	250



# GLASSWARE

## FRACTIONATING COLUMNS, VIGREX

Cat. No.	Socket	Cone	Effective Length mm
G610127	24/29	24/29	360
G610128	24/29	24/29	600
G610129	29/32	29/32	360
G610130	34/35	34/35	750



## FRACTIONATING COLUMNS, PLAIN

Designed for use with various type of column packing

Cat. No.	Socket	Cone	Effective Length mm
G610135	24/29	24/29	250
G610136	24/29	24/29	500
G610137	24/29	24/29	750
G610138	34/35	24/29	250
G610139	34/35	24/29	500
G610140	34/35	34/35	600



## FRACTIONATING COLUMNS, DUFTON

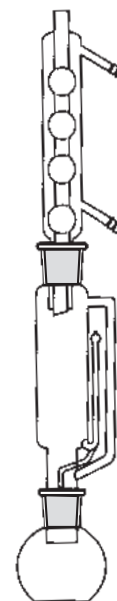
Cat. No.	Socket	Cone	Effective Length mm
G610131	24/29	19/26	150
G610132	24/29	19/26	300
G610133	24/29	24/29	150
G610134	24/29	24/29	300



## SOXHLET EXTRACTION APPARATUS

Consists of flask, extractor and condenser

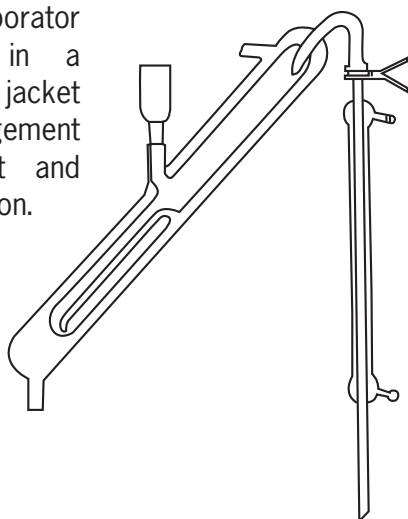
Cat. No.	Extractor Capacity mL	Extractor Socket	Extractor Cone	Flask Cap mL
G610201	20	24/29	1/26	50
G610202	40	29/32	24/29	100
G610203	60	34/35	24/29	150
G610204	100	34/35	24/29	250
G610205	100	40/38	24/29	250
G610206	200	50/42	24/29	500
G610207	400	50/42	24/29	1000
G610208	600	50/42	24/29	2000
G610209	1000	55/44	34/35	3000
G610210	2000	55/44	34/35	5000
G610211	3000	55/44	34/35	10000



## MARKHAM SEMI-MICRO DISTILLATION UNIT

This still has the evaporator vessel enclosed in a combined steam jacket and trap: an arrangement which is compact and accelerates distillation.

For ease of assembly and storage, it is fitted with a spherical ground glass joint between the distillation vessel and condenser.



G999001

## EXTRACTORS, SPARE

Cat. No.	Capacity mL	Socket	Cone
G610215	20	24/29	19/26
G610216	40	29/32	24/29
G610217	60	34/35	24/29
G610218	100	34/35	24/29
G610219	100	40/38	24/29
G610220	200	50/42	24/29
G610221	400	50/42	24/29
G610222	600	50/42	24/29
G610223	1000	55/44	34/35
G610224	2000	55/44	34/35
G610225	3000	55/44	34/35



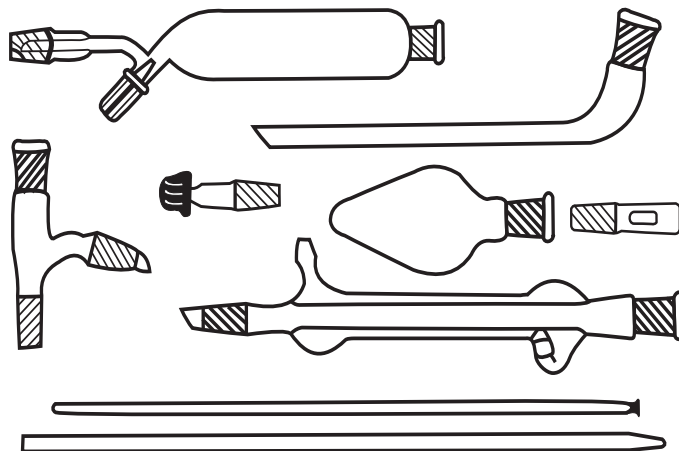
# GLASSWARE

## CHEMISTRY SET

The set comprises nine items of glassware and is packed in a styrofoam box. This greatly simplifies the problem of checking equipment as well as providing safe storage and transit. Std. joints are 19/26.

G602019

Components	Socket Size	Cone Size
Pear shaped flask, 50mL	19/26	-
Stopper	-	19/26
Dropping funnel, 50mL	19/26	19/26
Stillhead	19/26	19/26
Liebig condenser	19/26	19/26
Screw cap adapter	-	19/26
Air leak/steam inlet tube	-	19/26
Receiver adapter bent	19/26	-
Thermometer -10 to 360	-	-



## CHEMISTRY SET

The set comprises nine items of glassware and is similar to the set above except that joints std. joints are 14/23.

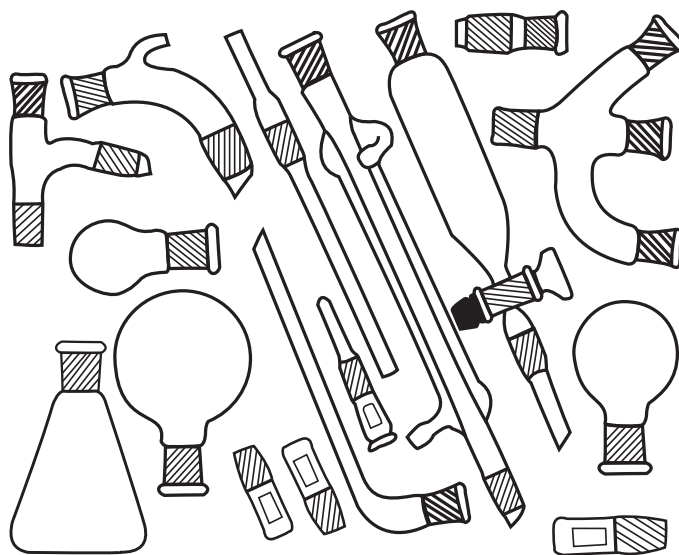
G602027

## CHEMISTRY SET

For student use in preparative organic chemistry up to the 150g scale, this includes all the necessary equipment to allow a wide range of preparations to be carried out. It is also invaluable for industrial laboratories where the amount of preparative work is not great and may occur at infrequent intervals. For such applications, this set has the advantage of covering an extensive field of possible work although occupying little space when not in use. The set is packed in a Styrofoam box.

G602034

Components	Socket Size	Cone Size
Stillhead	14/23	19/26
Receiver adapter	19/26	24/29
Air leak/steam inlet tube	-	19/26
Liebig condenser	19/26	19/26
Dropping funnel, 100mL	19/26	19/26
Reduction adapter	19/26	24/29
Multiple adapter	19/26	24/29
Flask R.B., 250mL	24/29	-
Flask Erlenmeyer, 250mL	24/29	-
Flask R.B., 250mL	24/29	-
Stopper	-	19/26
Stopper	-	19/26
Thermometer pocket	-	14/23
Receiver adapter, bent	19/26	-
Flask R.B., 100mL	24/29	-
Stopper	-	24/29



# GLASSWARE

## CHROMATOGRAPHY COLUMNS

With integral sintered disc, without stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500901	15	10
G500902	20	15
G500903	30	15
G500904	40	20
G500905	40	30
G500906	50	30
G500907	50	40
G500908	60	40
G500909	100	40



## CHROMATOGRAPHY COLUMNS

With integral sintered disc and PTFE key stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500931	15	10
G500932	30	10
G500933	30	20
G500934	45	20
G500935	45	30
G500936	60	30



## CHROMATOGRAPHY COLUMNS

With integral sintered disc and glass stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500911	15	10
G500912	20	15
G500913	30	15
G500914	40	20
G500915	40	30
G500916	50	30
G500917	50	40
G500918	60	40
G500919	100	40



## CHROMATOGRAPHY COLUMNS, PLAIN

Without stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500938	20	10
G500939	30	15
G500940	50	20
G500941	60	25
G500942	60	40
G500943	100	50
G500944	115	100
G500945	180	100



## CHROMATOGRAPHY COLUMNS

With integral sintered disc and screw type Rotaflow stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500921	15	10
G500922	20	15
G500923	30	15
G500924	40	20
G500925	40	30
G500926	50	30
G500927	50	40
G500928	60	40
G500929	100	40



## CHROMATOGRAPHY COLUMNS, PLAINS

With glass stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500948	20	10
G500949	30	15
G500950	50	20
G500951	60	25
G500952	60	40
G500953	100	50
G500954	115	100
G500955	180	100



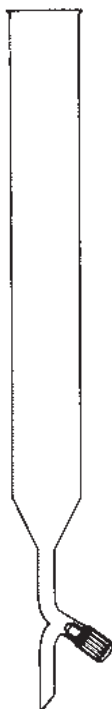


# GLASSWARE

## CHROMATOGRAPHY COLUMNS, PLAIN

With screw type Rotaflow stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500958	20	10
G500959	30	15
G500960	50	20
G500961	60	25
G500962	60	40
G500963	100	50

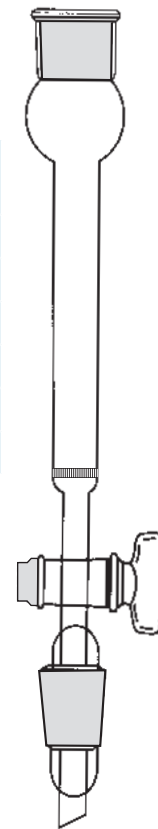


## CHROMATOGRAPHY COLUMNS

With integral sintered disc, stopcock, socket and cone

Cat. No.	Bore (mm)	Effe. Le. (cm)	Socket	Cone
G500972	10	100	14/23	19/26
G500973	10	200	14/23	19/26
G500974	10	300	14/23	19/26
G500975	18	300	24/29	19/26
G500976	18	400	24/29	19/26
G500977	18	400	24/29	24/29

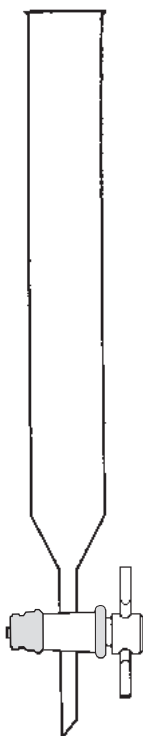
PS: The above column can be supplied in Rotaflow & PTFE stopcock also.



## CHROMATOGRAPHY COLUMNS, PLAIN

With PTFE key stopcock

Cat. No.	Extractor Length cm	Disk Dia mm
G500965	15	10
G500966	30	10
G500967	30	20
G500968	45	20
G500969	45	30
G500970	60	30



## CHROMATOGRAPHY COLUMNS

With integral sintered disc, socket and cone

Cat. No.	Bore (mm)	Effe. Le. (cm)	Socket	Cone
G500980	18	200	24/29	19/26
G500981	18	300	24/29	19/26
G500982	18	400	24/29	19/26

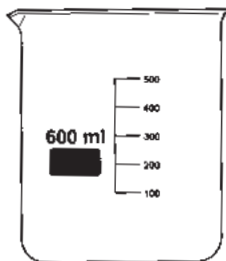


# GLASSWARE

## BEAKERS, LOW FORM, GRADUATED

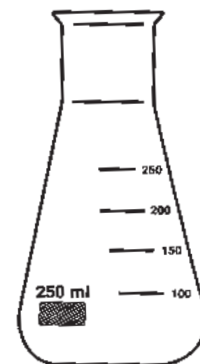
With spout

Cat. No.	Capacity mL
G500801	5
G500802	10
G500803	25
G500804	50
G500805	100
G500806	150
G500807	250
G500808	400
G500809	600
G500810	1000
G500811	2000
G500812	3000
G500813	5000



## ERLENMEYER FLASKS, GRADUATED, WIDE NECK

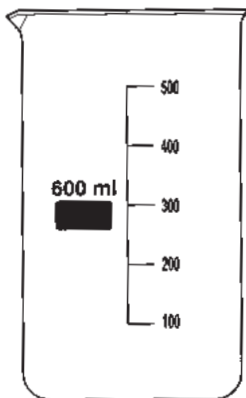
Cat. No.	Capacity mL
G500650	25
G500651	50
G500652	100
G500653	250
G500654	500
G500655	1000
G500656	2000
G500657	3000
G500658	5000



## BEAKERS TALL FORM, GRADUATED

With spout

Cat. No.	Capacity mL
G500815	50
G500816	100
G500817	150
G500818	250
G500819	400
G500820	600
G500821	800
G500822	1000
G500823	2000
G500824	3000



## FLASKS ROUND BOTTOM, NARROW NECK

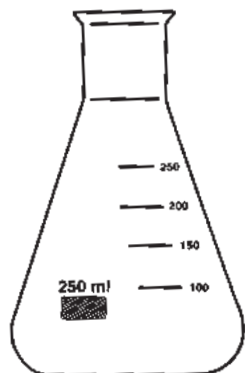
With beaded rim

Cat. No.	Capacity mL
G500701	50
G500702	100
G500703	250
G500704	500
G500705	1000
G500706	2000
G500707	3000
G500708	5000
G500709	10000
G500710	20000



## ERLENMEYER FLASKS, GRADUATED, NARROW NECK

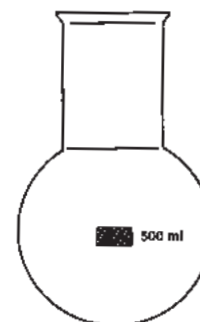
Cat. No.	Capacity mL
G500640	25
G500641	50
G500642	100
G500643	250
G500644	500
G500645	1000
G500646	2000
G500647	3000
G500648	5000



## FLASKS ROUND BOTTOM, WIDE NECK

With beaded rim

Cat. No.	Capacity mL
G500712	50
G500713	100
G500714	250
G500715	500
G500716	1000
G500717	1000
G500718	2000
G500719	3000
G500720	5000

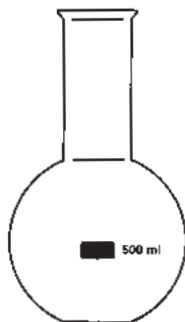


# GLASSWARE

## FLASKS FLAT BOTTOM, NARROW NECK

With beaded rim

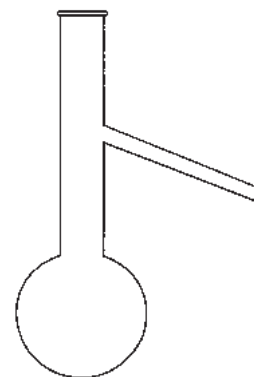
Cat. No.	Capacity mL
G500725	50
G500726	100
G500727	250
G500728	500
G500729	1000
G500730	2000
G500731	3000
G500732	5000
G500733	10000



## FLASKS DISTILLATION

With side tube

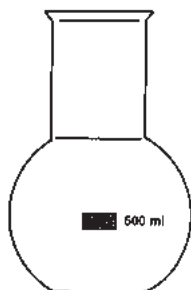
Cat. No.	Capacity
G500601	25
G500602	50
G500603	100
G500604	250
G500605	500
G500606	1000
G500607	2000



## FLASKS FLAT BOTTOM, WIDE NECK

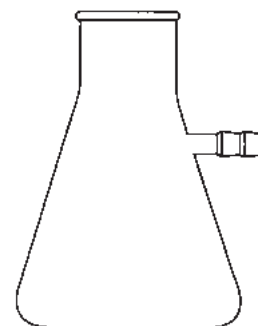
With beaded rim

Cat. No.	Capacity mL
G500735	50
G500736	100
G500737	250
G500738	500
G500739	1000
G500740	2000
G500741	2000



## FLASKS FILTRATION, BUCHNER

Cat. No.	Capacity
G500610	100
G500611	250
G500612	500
G500613	1000
G500614	2000



## FLASKS KJELDHAL, ROUND BOTTOM

Long neck

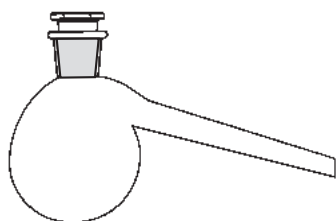
Cat. No.	Capacity
G500620	10
G500621	30
G500622	50
G500623	100
G500624	300
G500625	500



## RETORTS

With interchangeable stopper

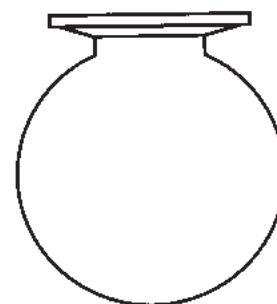
Cat. No.	Capacity mL
G500751	100
G500752	150
G500753	250
G500754	500
G500755	1000



## FLASKS REACTION, WIDE MOUTH

Flat flange 100 mm i.d., 150 mm o.d.

Cat. No.	Capacity
G500630	1000
G500631	2000
G500632	3000
G500633	5000
G500634	10000
G500635	20000

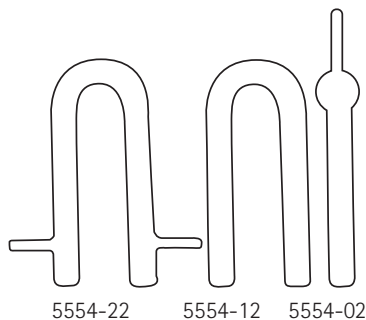


# GLASSWARE

## DRYING TUBES

For drying gases with desiccants such as granular calcium chloride, magnesium perchlorate etc.

Tooled ends for stoppers.



Straight with one bulb. Size: length x o.d., mm

	100 x 13	150 x 20	200 x 20
Cat. No.	G555402	G555404	G555406

U shape length x o.d., mm

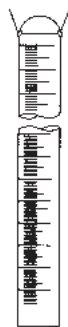
	100 x 13	150 x 13	200 x 20
Cat. No.	G555412	G555414	G555416

U shape with side arms, length x o.d., mm

	100 x 13	150 x 13	
Cat. No.	G555422	G555424	

## EUDIOMETER TUBES, BUNSEN

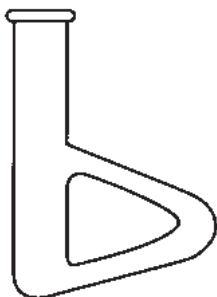
For demonstrating combining volume ratio of gases. Consists of glass tubes, graduated, zero point at the closed end with two platinum electrodes sealed near the closed end. Domed top.



Capacity	Graduation	Subdivision	Cat. No.
50mL	1 - 50mL	0.1 mL	G556005
100mL	1-100mL	0.1mL	G556010

## THIELE MELTING POINT TUBES

For melting point determination using convection stirred liquid for heating.



Outer diameter	Length	Cat. No.
25mm	150mm	G557115
25mm	165mm (Thiele-Dennis type)	G557120

## TUBE, THISTLE

Approximate dimensions are: top diameter 18mm, outer stem diameter 5mm and length 177mm.

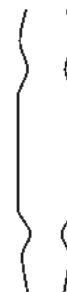
G557205



## TUBING CONNECTOR, STRAIGHT, GLASS

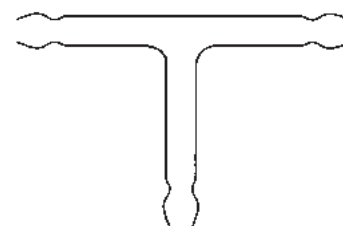
With beaded ends. A constriction at the end holds the flexible tubing securely. Approximate dimensions are:

Fits flexible tubing i.d.,mm	Tube o.d. mm	Length mm	Cat. No.
5	6	96	G557805
6	8	96	G557807
8	10	105	G557809
10	12	120	G557811
13	15	140	G557815



## TUBING CONNECTOR T SHAPE

With beaded ends. A constriction at the end holds the flexible tubing securely. Approximate relevant dimensions are:

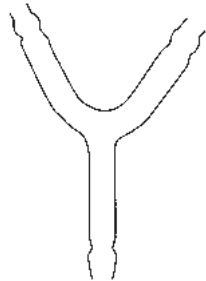


Fits flexible tubing i.d.,mm	Tube o.d. mm	Length mm	Upright length, mm	Cat. No.
5	6	96	48	G557905
6	8	96	48	G557907
8	10	105	48	G557909
10	12	120	60	G557911
13	15	140	70	G557915

# GLASSWARE

## TUBING CONNECTOR, Y SHAPE

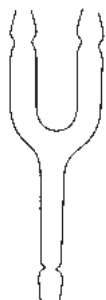
Designed to join two tubes to a third tube. With beaded ends and constriction at the ends to hold flexible tubing securely. Y-shaped tubes are at 120 angle. Approximate relevant dimensions are:



Fits flexible tubing i.d.,mm	Tube o.d. mm	Equal arm Length, mm	Cat. No.
5	6	48	G558005
6	8	48	G558007
8	10	50	G558009
10	12	60	G558011
13	15	70	G558015

## TUBING CONNECTOR, U SHAPE

With beaded ends and constriction at the ends to hold flexible tubing securely. Approximate relevant dimensions are:

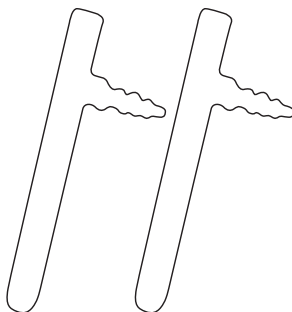


Fits flexible tubing i.d.,mm	Tube o.d. mm	Overall length mm	Cat. No.
8	10	88	G558101
10	12	123	G558102

Note: We can also supply TUBING CONNECTORS of other shapes and dimensions as per your requirement.

## TUBES, TEST, WITH SIDARM

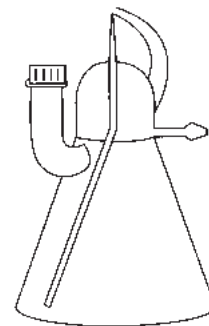
For microfiltration and other applications. Made of borosilicate glass. Serrated tubulation is approximately 10mm diameter and 25mm long. Test tubes sizes available are:



Length x o.d.	Cat. No.
20 x 150mm	G558520
25 x 200mm	G558525

## CHROMATOGRAPHY SPRAYER (ATOMISER)

For spraying visualizing reagents on chromatography paper, plate, tic etc. using bellows or compressed a gas. Made of borosilicate glass. Consists of an Erlenmeyer flask reservoir with ground joint secured by springs to the sprayer unit. Supplied with a bellows.



Capacity	100mL	150mL	250mL
Cat. No.	G559010	G559015	G559025

## TUBES GAS MEASURING, BUNSEN

For determining molar volume and other applications in the laboratory such as gas generated or absorbed in a given chemical reaction.

Graduated with zero at the closed top i.e. reads downwards from the closed top.

Capacity	Cat. No.
50mL	G559305
100mL	G559310

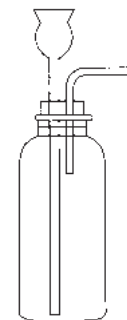


## GAS GENERATING BOTTLE

For preparing gases such as hydrogen, carbon dioxide etc. in a convenient manner.

Includes a flint glass bottle 250mL capacity, thistle funnel, a bent glass (made of borosilicate glass) and a rubber stopper.

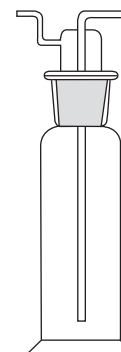
G559701



## GAS WASHING BOTTLE, DRESCHEL TYPE

Interchangeable joints (29/32)

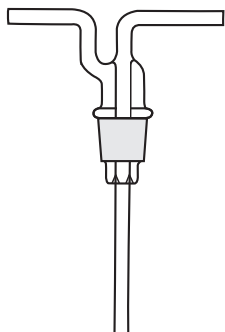
Capacity mL	Cat. No.
125	G580904
250	G580902
500	G580903



# GLASSWARE

## HEAD FOR GAS WASHING BOTTLE (SPARE)

G581301



## SPECIMEN JARS

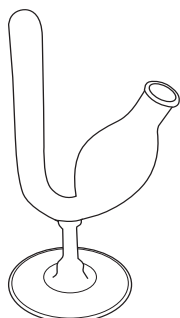
With bakelite screw cap, suitable for culture. Autoclaveable

Cat. No.	Size mm	Approx. Capacity mL
G501001	50 x 75	100
G501002	62 x 110	250
G501003	75 x 130	500
G501004	90 x 185	1000



## FERMENTATION TUBE, GRADUATED

For measuring gas production in fermentation experiments. Consists of a vertical tube with closed rounded top about 13mm o.d. and 100mm long. Graduated to 50mL in 0.10mL subdivisions. Tol. +0.10mL. Approximate o.d. of the bulb is 30mm and its capacity is greater than that of the vertical tube.



G560501

## DISHES, CRYSTALLIZING, WITH SPOUT

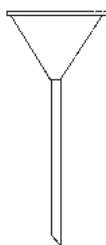
Cat. No.	Capacity mL	O.D. x Height mm
G501007	300	95 x 55
G501008	900	140 x 75
G501009	2000	190 x 90



## FUNNELS, 58° ANGLE, FOR FILTRATION

Fire polished stems and rims.

Long stem Funnel i.d. (mm)	Fits paper of dia., (mm)	Stem length mm	Cat. No.
35	55	150	G561001
45	70	150	G561003
55	90	150	G561005
65	110	150	G561007
75	125	150	G561009

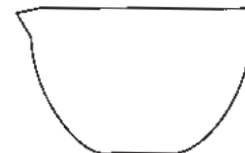


Short stem Funnel i.d. (mm)	Fits paper of dia., (mm)	Stem length mm	Cat. No.
25	55	40	G561101
45	70	50	G561103
55	90	63	G561105
65	110	63	G561107
75	125	75	G561109



## DISHES, EVAPORATING, WITH SPOUT

Cat. No.	Capacity mL	O.D. x Height mm
G501011	90	80 x 45
G501012	170	95 x 55
G501013	600	140 x 80



## PETRI DISHES

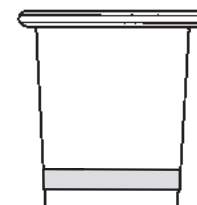
Cat. No.	O.D. x Height mm
G501015	50 x 17
G501016	80 x 17
G501017	100 x 17
G501018	150 x 20



## CRUCIBLE, GOOCH

With sintered disc. \*

Cat. No.	Capacity mL
G501020	15
G501021	30
G501022	50

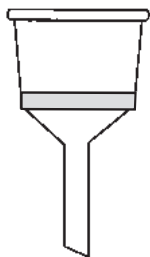


# GLASSWARE

## BUCHNER FUNNEL

With sintered disc. Plain stem\*

Cat. No.	Capacity mL	Disc Dia. mm
G501023	35	30
G501024	80	40
G501025	200	65
G501026	500	90
G501027	1000	120



## WEIGHING BOTTLES

Squat form, with cap

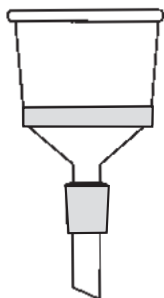
Cat. No.	O.D. x Ht. mm	Capacity mL
G501050	38 x 30	25
G501051	45 x 30	45



## BUCHNER FUNNEL

With sintered disc. Cone at stem\*

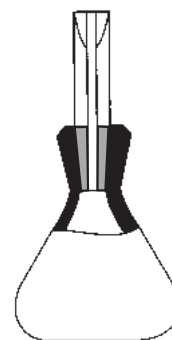
Cat. No.	Capacity mL	Disc Dia. mm	Cone
G501028	35	30	14/23
G501029	80	40	19/26
G501030	200	65	19/26
G501031	500	90	24/29
G501032	1000	120	29/32



## SPECIFIC GRAVITY BOTTLES

Ground in capillary stopper

Cat. No.	Capacity mL
G350500	5
G350501	10
G350505	20
G350502	25
G350503	50
G350504	100



\* Kindly specify porosity while ordering

## WEIGHING BOTTLES

Ground in stopper

Cat. No.	O.D. x Ht. mm		Capacity mL
G501035	40 x 30	Squat Form	20
G501036	50 x 25	„	20
G501037	50 x 35	„	35
G501038	50 x 50	„	50
G501039	60 x 30	„	40
G501040	20 x 40	Tall Form	5
G501041	25 x 50	„	15
G501042	30 x 60	„	25
G501043	40 x 80	„	60



## REAGENT BOTTLES, NARROW MOUTH

With interchangeable stopper

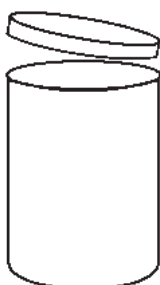
Cat. No.	Capacity mL
G501055	30
G501056	60
G501057	125
G501058	250
G501059	500
G501060	1000



## WEIGHING BOTTLES

Tall form, with cap

Cat. No.	O.D. x ht. mm	Capacity mL
G501045	18 x 40	7
G501046	28 x 50	25
G501047	38 x 60	55
G501048	45 x 80	100



## REAGENT BOTTLES, WIDE MOUTH

With interchangeable stopper

Cat. No.	Capacity mL
G501065	30
G501066	60
G501067	125
G501068	250
G501069	500
G501070	1000

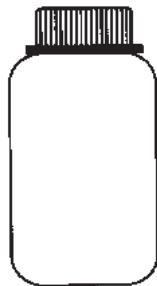


# GLASSWARE

## REAGENT BOTTLES, WIDE MOUTH

With screw cap and teflon liner

Cat. No.	Capacity mL
G501075	30
G501076	60
G501077	125
G501078	250
G501079	500
G501080	1000
G501081	2000



## REAGENT BOTTLES, NARROW MOUTH

With screw cap and teflon liner

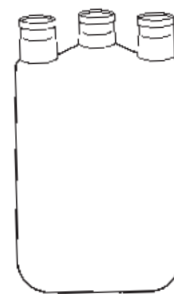
Cat. No.	Capacity mL
G501085	30
G501086	60
G501087	125
G501088	250
G501089	500
G501090	1000
G501091	2000



## WOULF BOTTLES

With three ground necks

Cat. No.	Capacity mL
G501092	250
G501093	500
G501094	1000



## BOTTLES, B.O.D.

With interchangeable stopper

Cat. No.	Capacity mL
G501095	125
G501096	300



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Product	Page No.	Product	Page No.
<b>A</b>		Block, Semicircular	43
Achromatic Objectives	9	Bob Pendulum	61
Acrylic Balls	62	Bone Shears, Cutting Forceps	4
Acrylic Block, Rectangular	43	Bottles Weighing	119
Acrylic Cubes	62	Bottles Woulf	120
Acrylic Cylinders	62	Bottles, B.O.D.	120
Acrylic, Lenses	43	Bottles, Dreschel	117
Acrylic, Prisms	41	Boyle's Law Apparatus, Various	64
Adapter, Various	91	Brain, Human Model	19
Adapter, Cone/Screw Thread	97	Bridge Wheatstone	25
Adapter, Expansion	91	Brownlee Electrolysis Apparatus	28
Adapter, Multiple, Various	91	Brushes, Test Tube	78
Adapter, Reduction	91	Buchner Funnels, Glass	119
Adjustable Tuning Fork	71	Buchner Funnels, Porcelain	89
Aepinus Condenser	33	Bucket and Cylinder	63
Air Condensers	107	Bulb Holder SBC	26
Air Core Solenoid, Helix	30	Bunsen Burner	77
Air Leak Tube	93	Buret Stand Wooden	81
Alcohol Burner, Various	77	Buret, Clamps	81
Aluminium Pulleys, Various	57	Buret, Pinch Cock Attachment	100
Aluminium Test Tube Stand	75	Buret, Plastic	84
Anatomical Models	19 to 21	Burets Straight, (Stopcock) Geissler Type	100
Anemometer	11	Burets, Mohr	100
Aneroid Barometer, Demonstration Model	63	Burets, Screw Type (PTFE Stopcock)	100
Aneroid Barometer, Wall Mounting	63	Buretters Automatic Zero, Various	101
Angular Alcohol Burner	77	Burner Bunsen, Propane Gas	78
Animal Cage	11	Burner Wing Tops	78
Animal Cell, Model	21	Burner, Replacement Wicks	77
Animal Mitosis, Model	21	Burners, Alcohol	77
Archimedes Principle Set	63	Burners, Various	77
Aspirator	79	Bursting Bottle	39
Atomic Model Sets	86	<b>C</b>	
Atomiser	117	C Core	31
<b>B</b>		Caliper, Micrometer, Metric & English	53
Balance Lever, Buchart Type	53	Calipers, Vernier, Various	52
Balls Set, Various	61	Calorimeter Blocks	39
Balls, Acrylic	62	Calorimeter, Food	13
Balls, Solid, Hooked & Drilled	60	Calorimeter, Friction	68
Balls, Steel	32, 60, 61	Calorimeter, Various	38
Banana Plug	35	Capillary Tube Set	54
Bar Breaking Apparatus	65	Carbon Discs	29
Base, Slotted	75	Carbon Electrode Pair	28
Basin Evaporating, Porcelain	88	Carbon Rod Electrode	27
Basin, Silica	87	Cast Iron Support Rings	75
Beaker Tongs, Various	74	Cavity Tile, Polypropylene	83
Beaker, Glass, Various	114	C-Clamps	65
Beakers With Handle, Polypropylene	83	Centrifuge Electric	81
Beakers, Griffin, Polypropylene	83	Centrifuge Hand	81
Beehive Shelves, Porcelain	89	Centrifuge Tubes, Various	98-99
Bell Demonstration Unit	29	Chemistry Sets, Various	111
Bell Door, Electric	29	Chimney, Spare	37
Bell In Jar	72	Chromatography Columns, Various	112-113
Bench Optical	41	Circuit Board Kit	32
Bends, Plain	92	Clamp Extensions, Various	77
Bends, Receiver	93	Clamp Holder, Right Angle	77
Bends, Recovery	92	Clamps, Buret	81
Bends, With Vacuum Connection	92	Clay Pipe Triangle, Porcelain	89
Bends, With Vent	92	Clinostat	10
Bi-Cycle Dynamo	30	Clips, Joints	90
Bi-Cycle Wheel Gyroscope	60	Coil Set, Primary & Secondary	31
Blades, Scalpel	6	Color Disc, Newton's	46
Block, Rectangular, Acrylic	43	Color Paddles	46
Block, Rectangular, Glass	42	Combustion Spoon, Nuffield	78
		Communicating Capillaries, Vessels	54
		Compass Both Side Glass	23
		Compass, Demonstration	23
		Compass, Magnetic	23
		Compound Bar (Compound Strip)	38
		Condenser, Air	107
		Condenser, Graham, Coil Type	108
		Condenser, Liebig	107
		Condenser, Liebig (Screw Thread)	107
		Condenser, Various	107-109
		Conductometer, Five Rod Form	37
		Conical Flask, Polypropylene	86
		Connector	26
		Connectors, Tubing	116-117
		Contact Tap Key	25
		Convection Apparatus, Gas	37
		Convection Apparatus, Liquid	37
		Copper Calorimeter	38
		Copper Voltmeter	28
		Copper Wire, Bare	36
		Copper Wire, Enamelled	36
		Copper wire, PVC Insulated	36
		Cork Borer Sharpener	79
		Cork Borers Set	80
		Cork Press	80
		Corks Stoppers	82
		Crocodile Clips	35
		Crookes Radiometer	39
		Cross Pattern Test Tube Holder	74
		Crucible Tongs	74
		Crucible, Gooch Glass	118
		Crucible, Nickel	80
		Crucible, Porcelain, Various	88
		Crucible, Silica	87
		Crucibles, Filtering, Gooch, Porcelain	88
		Crystal Model Sets	87
		Cubes Metals, Various	62
		Cubes Non-Metals, Various	61
		Cubes, Acrylic	62
		Cubes, Cylinders and Balls, Acrylic	62
		Culture Bottles	10
		Culture, Tubes, Various	98
		Current Balance Kit	35
		Cylinder Set, Specific Heat Specimen	38
		Cylinder Sets, Metal, Various	62
		Cylinder, Acrylic	62
		Cylinder, Density Determination	62
		Cylinders, Measuring, Glass, Various	103
		Cylinders, Measuring, Polypropylene	83
		Cylindrical Lenses, Glass	41
		Cylindrical Mass Set	50
		<b>D</b>	
		D Cells, Holder	29
		Daniel Cell	28
		Decade Resistance Box	31
		Deflagrating Spoon With Disc	78
		Demonstration Compass	23
		Demonstration Light Guide	44
		Demonstration Manometer	63
		Demonstration Models, Diesel,	67
		Steam & Petrol Engines	
		Demonstration, Meter	34
		Demonstration, Meter Scales Spare, Various	34
		Density Ball	61
		Density Cylinder Set	62
		Diaphragm Type Bowles Stethoscope	73
		Diesel Engine demonstration Model	67

# INDEX

Differential Forks, Sympathetic	71	Feeding Bottle	11	Gooch Crucible, Filtering Discs	88
Diffraction Gratings	48	Fermentation Tube	118	Gooch, Filtering Porcelain Crucible	88
Digestive System, Human Model	20	Filter Discs, Porcelain	88	Graham Condensers, Coil Type	109
Direct Vision Spectroscope	46	Filter Paper	80	Guinea and Feather Apparatus	64
Dishes, Crystallizing	118	Filter Pumps	79		
Dishes, Evaporating	118	Fisher Clamp	85	<b>H</b>	
Disk And Ring	59	Five Rod Form Conductometer	37	Halls Carriage	59
Dissecting Scissors, Various	4	Flask , Single Neck Pear Shape	95	Hand Driven Stroboscope	46
Dissection Sets, Various	6 to 7	Flask , Three Neck Pear Shape	96	Hand Tally Counter	65
Door Bell, Electric	29	Flask , Two Neck Pear Shape	96	Hanger, Brass	51
Doppler Effects Demonstration	71	Flask Conical, Glass	97	Head for Gas Washing Bottle	118
Double Cone and Incline	66	Flask Stand, Polypropylene	86	Head of Water Unit	68
Double Ended Spatula	79	Flask, Claisen, Pear Shape	96	Heart, Human Model	19
Dreschel Bottles Heads, Plain	117	Flask, Conical, Erlenmyer	97	Helix, Air Core Solenoid	30
Dropping Bottles	85	Flask, Conical, Polypropylene	86	Helix, Iron Core Solenoid	30
Dropping Funnels, Glass, various	104-107	Flask, Distillation, Pear Shape	96	Hirsch Funnel, Porcelain	88
Dropping Pipet	6	Flask, Flat Bottom	94,115	Hoffman Clip	82
Drying Tubes	116	Flask, Florentine	96	Hoffman Electrolysis Apparatus	28
Dynamo AC/DC	30	Flask, Iodine	97	Holder For 'D' Dry Cells	29
Dynamo Motor	30	Flask, Kjeldahl	97,115	Hook Collars	55
		Flask, Round Bottom	94-95,114	Hook's Law Apparatus	55
<b>E</b>		Flask, Volumetric, Various	102	Hope's Apparatus	39
Ear, Human Model	19	Floating Magnets, Wobbly magnets	23	Horseshoe, Magnets, steel	22
Ebonite Friction Rod	24	Fly Wheel Unit	68	Huygenian Eyepiece	9
Economy Switch	26	Folding Magnifier	3	Hydraulic Press Bramah, Model	69
Electric Calorimeter	38	Food Calorimeter	13		
Electric Door Bell	29	Force Pump- Model	69	<b>I</b>	
Electric Field Apparatus	32	Force Table	56	Illuminator For Microscopes	9
Electrode, Carbon Pair, Spare	28	Force Table, Economy Model	56	Inclined Plane	60
Electrode, Carbon Rod	27	Forceps, Various	5	Induction Coil	26
Electrode, Platinum Pair, Spare	28	Ford Stethoscope	73	Inertia Balance Kit	59
Electrodes, Various	27	Fortins Barometer	64	Ingen Hauz Apparatus	37
Electrolysis Apparatus Hoffman	28	Four-prong Clamp Extension	77	Iron Core Solenoid, Helix	30
Electrolysis Cell	28	Fractional Weight	52	Iron Filing	22
Electromagnet, U-Shape	29	Fractionating columns, Various	110		
Electromagnetic Kit	29	Free Fall In vacuum Apparatus	64	<b>J</b>	
Electrophoresis Gel Tank	12	Friction Calorimeter	68	Jack, Lab	75
Electrophoresis Power Supply	12	Friction Pads, Various	24	Jaw, Model	19
Electroscope Pith Ball Type	25	Friction Rods, Various	24	Jockey, Pencil	25
Electroscope, Flask Type	24	Funnel Holder	84	Joule Calorimeter	38
Electroscope, Metal Case	24	Funnel Stand Wooden	81		
Electrostatic Conductors	24	Funnels Powder, Polypropylene	84	<b>K</b>	
Electrostatic Kit	25	Funnels, 580 Angle, For Filtration	118	Kidney, Human Model	20
Embryo Development, Human Model	21	Funnels, Buchner, Porcelain		Kinetic Theory Model	64
Empty Porous Pots, Porcelain	89	Funnels, Hirsch, Porcelain	88	Kipps Apparatus, Plastic and Glass	83
Engine Demonstration Models, Various	67	Funnels, Polypropylene	84	Knife Edge Jockey	25
Equal Mass Cube Set	62	Funnels, Separatory	87	Knife Switches, Various	26
Equal Transmission of Fluid Pressure Apparatus	63			Kohlraush Flasks	102
Equilateral, Prisms	42	<b>G</b>		Kundt's Apparatus	72
Equilibrium Tubes	54	Galvanometer	34		
Eudiometer Tubes, Bunsen	116	Galvanometer, Tangent	32	<b>L</b>	
Eureka Wire (Constantan Wire)	36	Ganong Potometer	10	Lab Coat	83
Evaporating Basins, China Dishes, Porcelain	88	Gas Convection Apparatus	37	Lab Jack	75
Exciting Pad	24	Gas Generating Bottle	117	Laboratory Scoop, "Scoopula"	79
Expansion, Adapters, Various	91	Gas Inlet Tube	93	Lamp Holder	26
Extension Steel Springs	55	Gas Jar	81	Leaf Structure, Model	21
Extension Support Rings	75	Gas Jar Cover	81	Leclanche Cell	28
Extractors. Spare	110	Gas Measuring Tube, Bunsen	117	Leibig Condensers	107
Eye, Human Model	19	Gas Washing Bottle, Dreschel Type	117	Lens Demonstration Set, Acrylic	44
Eyepiece, Huygenian	9	Geissler Type Burets	100	Lens Demonstration Set, Glass	40
Eyepiece, Widefield	9	Geometrical Solid Set	66	Lens Holder, Wooden	45
Eyepiece, Widefield "DIN"	9	Glass Alcohol Burner	77	Lens, Acrylic	43
		Glass Blocks, Various	42	Lens, Cylindrical, Glass	41
<b>F</b>		Glass Friction Rod	24	Lens, Neutralizing Set, Glass	40
Fahnstock Clip	26	Glass Part For Hoffman Electrolysis Apparatus	28	Lens, Spherical, Biconcave	40
Falling Bodies Apparatus	66	Globe Shape Separatory Funnels	104	Lens, Spherical, Biconvex	40
				Lenz Law Apparatus	25

Leslie Cube	39	Microscope Slide Box, Plastic	4	Pipet Stand, Various	84
Lever Balance, Buchart Type	53	Microscope Slide Box, Wooden	4	Pipet, Glass Automatic Quick Acting	101
Lever Clamp	65	Microscope Slide Staining Kit	18	Pipette Pump	85
Lever Kit	65	Microscope, Eyepiece	9	Pipette Stand Wooden	81
Lid For Nickel Crucible	80	Microscope, Illuminated	9	Pipettes, Glass, Various	101-102
Lift Pump- Model	69	Microscope, Objectives	9	Pith Ball Electroscopes	25
Line Shaft Unit	68	Microscope, Student, Various	8	Pith Ball, Spare	25
Linear Expansion Apparatus	39	Microscope, Vernier	53	Plant Cell, Model	21
Liquid Convection Apparatus	37	Microtome, Simple Hand	5	Plant Mitosis, Model	21
Litmus Papers	80	Mirror Holder	46	Plastic Burets	84
Lungs, Human Model	19	Mirror, Flat Strips	45	Plastic, Friction Rod	24
Lycopodium Powder	72	Mirror, Spherical, Convex-Concave, Various	45	Plate, Support With Clamp	75
<b>M</b>		Mitosis Model, Animal	21	Plated Top Tripod Stand	77
Magnesium Ribbon	78	Mitosis Model, Plant	21	Plates, Spotting, Porcelain	89
Magnet, Alnico Bar	22	Models Anatomical	19 to 21	Platinum Electrode Pair	28
Magnet, Alnico Cylindrical	22	Mohr Buret	100	Plug Keys / Switches, Various	26
Magnet, Alnico Horseshoe	22	Mohr's Clip	82	Plumb Bob	55
Magnet, Ceramic Disc	23	Moment of Inertia Apparatus	59	Polypropylene Cavity Tile	83
Magnet, Ceramic Bar	23	Mortar & Pestle, Porcelain	89	Polypropylene Funnel	84
Magnet, Ceramic Ring	23	Motor Dynamo	30	Polypropylene Griffin Beakers	83
Magnet, Set, Ring, Ceramic	23	Motor Generator Unit Large & Small	68	Polypropylene Measuring Cylinders	83
Magnet, Steel Horseshoe	23	Motor, St. Louis	30	Polypropylene Staining Jar	83
Magnet, Steel Rectangular Bar	22	Multiple Adapter, Various	91	Porous Pots, Empty, Porcelain	89
Magnetic Compass	23	<b>N</b>		Potometer	10
Magnetic Field Demonstrator	23	Needles, Teasing	6	Powder Funnels, Polypropylene	84
Magnetic Needle On stand	23	Nephron, Human Model	20	Power Supply For Electrophoresis	12
Magnetic, Needle Spare	23	Neuron, Human Model	20	Power Supply For Spectrum Discharge Tubes	47
Magnifier, Clear Plastic	3	Neutralising Lens Set Glass	40	Prepared Slide Sets, Various	14 to 18
Magnifier, Plastic	3	Newton's Color Disc	46	Pressure Gauge	63
Magnifier, Folding Pocket, Various	3	Newton's Ring Apparatus	46	Primary and Secondary Coil Set	31
Magnifier, Goose Neck	3	Newton's Second Law	66	Prism and Lens Set, Acrylic	44
Magnifier, Reading Glass	3	Nichrome Wire (Nickel-Chromium Alloy Wire)	36	Prism, Equilateral Acrylic	41
Magnifier, Tripod, Various	3	Nickel Crucible	80	Prism, Equilateral Glass	41
Mallet, Striking	71	Nuffield Combustion Spoon	78	Prism, Equilateral, Mounted	42
Manometer, Demonstration	63	Nuffield Spatula	79	Prism, Right Angle Glass	42
Manometer, Open	63	<b>O</b>		Prism, Soda-Lime Glass	42
Markham Semi-Micro Distillation Unit	110	Objectives, Achromatic	9	Prism, Trapezoidal Acrylic	42
Mass Set On Flat Base	50	Objectives, Achromatic "DIN"	9	Probe & Seeker, Mall	6
Mass Set With Hook, Cylindrical	50	Oersted's Law Apparatus	30	Projection Meter, Various	35
Mass Set, Hexagonal	50	Open Manometer	63	Proof Plane	25
Mass With Ring	50	Optical Bench	41	Pull Spring Scales	54
Masses With Hooks, Spare	50	Optical Pin	43	Pulley Demonstration Set	58
Masses, For Weight Box	52	Organ Pipe	71	Pulley Plastic With Bearings	57
Masses, Hexagonal, Spare	50	Overflow Can	63	Pulley With Rod	56
Masses, Hooks On Both Sides	51	<b>P</b>		Pulley With Table Clamp	55
Masses, Slotted, Spare	51	Paper, Filter	80	Pulley, Aluminum Tandem	57
Measuring Cylinders, Metric Scale, Various	103	Paper, Litmus	80	Pulley, Fixed	55
Measuring Cylinders, Polypropylene	83	Paper, PH	80	Pulley, Plastic Tandem	57
Measuring Tape, Metal	69	Pear Shape Flask, Various	96	Pulley, Student Set	58
Measuring Tape, Plastic	69	Pear Shape Separatory Funnel	104	Pulley, With Three-way Attachment	56
Mechanical Stage	9	Pelvis Female, Human Model	20	Pulleys, Aluminium, Various	57
Medicine Dropper	6	Pelvis Male, Human Model	20	Pulleys, Bench Mounting	55
Meiosis, Model	21	Pencil Jockey	25	Pulleys, Plastic Various	57
Melting Point Apparatus	38	Pendulum Bob	61	Pump Unit	69
Mercury Troughs, Porcelain	89	Periscope	46	<b>R</b>	
Metal Cubes, Various	62	Pestle and Mortar, Porcelain	89	Radiation Can	39
Metal Disc Set	59	Petri Dishes	118	Radiometer, Crooks	39
Metal Stand For Hoffman Electrolysis Apparatus	28	Petrol Engine, Demonstration Model	67	Raybox Kit	43
Meter Scale, Wooden	53	Photosynthesis Apparatus	10	Reading Magnifier	3
Meter, Dual Amp/Volt, Basic	34	Pinch Cock Attachment	100	Reagent Bottles, Glass	119-120
Micro Spatula	79	Pipet Bulb	80	Reagent Bottles, Polypropylene	85
Micrometer Calipers	53	Pipet Dropping	6	Receptacle For Miniature Lamp	26
Micrometer, Screw Gauge	53	Pipet Filler, Rubber	80	Rectangular Support Stands	76
Microscope Prepared Slides, Sets	14-18			Reduction Adapter	91
Microscope Shinco	9			Replacement Wicks	77
				Resistance Box	31

# INDEX

Resistance Coils, Various	32	Spring Unit	68	Trula Spatula	79
Resonance Apparatus	71	Springs, Extension Steel	55	Tube, Centrifuge, Various	98-99
Rheostat, Slide Wire, Various	27	St. Louis Motor	30	Tube, Thiele Melting Point	116
Right Angle Clamp Holder	77	Staining Jar, Polypropylene	83	Tube, Thistle	116
Ring and Ball Apparatus	37	Stamp Loupe	9	Tubes Culture, Various	98
Ring and Disk	59	Steam Engine, Demonstration Model	67	Tubes Test With Sidearm	117
Ring Stands	76	Steam Trap	37	Tubes, Drying	116
Rings, Extension	75	Stethoscope, Various	73	Tubing, Rubber	81
Rings, Support	75	Stillheads, Plain With Thermometer Socket	93	Tubular Spring Scales	54
Ripple Tank	44	Stop Clock	66	Tulgreen Funnel	11
Rocks And Mineral Set	13	Stop Watch, Analog	66	Tuning Fork Hammer	71
Rod, soft Iron	32	Stopper Hollow Glass	91	Tuning Fork Sets, Aluminum	70
Room Thermometers	10	Stopper solid, Glass	91	Tuning Fork Sets, Steel	71
Round Bottom Flask	114	Striking Mallet	71	Tuning Fork Steel With Ball End	71
Rubber Tube, Various	81	Stroboscope, Hand Driven, Simple Model	46	Tuning Forks, Adjustable	71
Rubber Tubing	81	Support Plate with Clamp	75	Tuning Forks, Aluminum	70
Ruber Stoppers, Various	82	Support Rings, Cast Iron	75	Tuning Forks, Steel	70
<b>S</b>		Support Rings, Extension	75	<b>U</b>	
Sand Bath	80	Support stand, Rectangular	76	U Shape Tubing Connector	117
Scalpel	4	Surgical Handles	4	U- Tube, Glass	93
Scalpel Blades	6	Switch With Fahnestock Clip	26	U-Magnet Large	22
Scissors, Dissecting	4	Sympathetic Differential Forks	71	Urinary System, Model	20
Separatory Funnel	87	<b>T</b>		<b>V</b>	
Separatory Funnel Holder	87	T Shape Tubing Connector	116	Van De Graff Generator Electric Driven	33
Separatory Funnels, Various	103-104,106	Tall Form Griffin Beaker	83	Van De Graff Generator Hand Driven	33
Skeleton, Human Model	21	Tall Form Porcelain Crucibles	88	Ventilation Apparatus	37
Skin, Model	19	Tangent Galvanometer	32	Venturi Apparatus	54
Slide Box, Microscope, Plastic	4	Tape Measuring, Various	69	Vernier Calipers, Various	52
Slide Box, Microscope, Wooden	4	Tapping Key	25	Vernier, Microscope	53
Slide Microscope With Depression, Various	4	Teaching Stethoscope	73	Vertical Acceleration Demonstrator	66
Sling Psychometry Thermometer	11	Teasing Needles, Various	6	Voltmeter Copper	28
Slotted Base	75	Teclu Burner	77	Volumetric Flask	102
Slotted Masses On Rack	51	Teeth With Jaw, Human Model	19	<b>W</b>	
Slotted Masses, Spare	51	Terminals	35	Wall Thermometer, Dual Scale	10
Slotted Weight Set	51	Test Tube Brushes	78	Wankel Engine, demonstration Model	85-86
Snaky Spring	72	Test Tube Clamp, Stoddard's	74	Wash Bottles	79
Sockets, Glass various	90	Test Tube Clamp, Wooden	74	Watch Glass	37
Soft Iron Rod	32	Test Tube Holder, Cross Pattern	74	Water Trap	69
Solar Cell, Mounted	69	Test Tube Rack, Polypropylene	74	Water Turbine	72
Solenoid Flat	31	Test Tube Rack, Various	75	Wave Demonstration	73
Solenoid Helix, Air Core	30	Test Tube Stand, Aluminum	75	Wave Motion	51
Solenoid Helix, Iron Core	30	Test Tube Support, Wooden, Various	75	Weight Boxes, General Purpose	72
Solenoid Set of 4	31	Test Tube With Socket	93	Weights For Sonometer	29
Solid Material Kit	59	Test Tube, Round Bottom	99	Westminster	25
Sonometer On Board	72	Thermal conductivity Of Metal	39	Wheatstone Bridge	65
Sonometer, Wood	72	Thermometer Alcohol, Various	39	Wheel and Axle	24
Soxhlet Extraction Apparatus	110	Thermometer Pocket	93	Whimshurt Machine	77
Spatula, Polypropylene	86	Thermometer Soil Test	11	Wicks, Replacement	88
Spatula, Various	79	Thermometer, Various	10	Wide Form Porcelain Crucible	9
Specific Gravity Block With Hook	62	Thiele Melting Point Tubes, Glass	116	Widefield Eye Piece	11
Specific Gravity Bottles, Glass	61,119	Ticker Tape Timer	29	Wind Vane	78
Specific Gravity Set	65	Ticker Timer Tape	29	Wing Tops For Burner	79
Specific Heat Cylinder Set	38	Tongs, Beaker	74	Wire Guaze Squares	72
Specific Heat Specimen Cylinders Set	38	Tongs, Crucible	74	Wood Sonometer	78
Specimen Jars	118	Tongs, Flask	74	Wood Splints	74
Spectrometer Prism, Equilateral, Glass	48	Torso, Human Model	20	Wooden Test Tube Clamp	75
Spectrometer, Advanced	48	Traingles, Clay Pipe	89	Wooden Test Tube Supports	
Spectrometer, Student	48	Trapezoidal Prism, Acrylic	42	<b>Y</b>	
Spectroscope, Direct Vision	46	Tripod Bases With Rods	76	Y Shape Tubing Connector	117
Spectrum Discharge Tubes, Various	47	Tripod Magnifiers, Various	3	Youngs Modulus	65
Spherical Joint Glass	90	Tripod Stand, Concentric Rings	76		
Spherometer	53	Tripod Stand, Plated Top	77		
Splash Heads	93	Tripod Stand, Stainless Steel Wire	77		
Spotting Plates, Porcelain	89	Tripod Stands, Single Ring	76		
Spring Slinky	72				