

*It is not so important
to have all the answers
as to be hungry for them.*

BIOLOGY

BIOLOGY

BINOCULAR MICROSCOPE

RESEARCH SERIES

Gold Cross 11

GOLD CROSS MICROSCOPES BRING ACCURACY RELIABILITY AND EASY OPERATIONS BESIDES VARIOUS ATTACHMENTS AND ADD-ONS TO FURTHER EXTEND CAPABILITIES OF VIEWING, CAPTURING, ROUTINE TO CRITICAL RESEARCH TECHNIQUES SUCH AS VIDEO PRODUCTION SYSTEMS, IMAGE ANALYSIS SYSTEM, PHASE CONTRAST AND MICRO PHOTOGRAPHY.

Technical features:

OPTICS: High Eye-point compensating extra wide field (18 mm) eyepieces combined with High Quality Achromatic Objectives (Parfocal Distance-45mm), as per DIN Standards with anti-reflection coat, gives sharper resolution and extra flat field of view and a colour free image.

NOSEPIECE: Special quadruple revolving nosepiece, ensures a common field center on changing magnifications and on re-introduction

CO-AXIAL FOCUSING : incorporates a very precise and wear resistant linear bearing mechanism that eliminates vibration and backlash. The coarse adjustment knob has a built-in Tension Adjustment Ring to control the tension of the focusing knob. The fine focus knob is graduated in 0.01mm increments.

REFOCUSING LEVER: prevents collisions between objective and specimen due to negligence or accidental stage movement. The lever can also be fixed at the desired focusing position of the coarse adjustment for easier refocusing, even at higher magnifications.

ANTI-MOULDING PROTECTION : Gold Cross 11 comes with special construction and anti-moulding protection to protect the microscope from any kind of mould formation which could permanently damage the optics .

Gold Cross 11 (Code No. : 30010) has a LARGER MECHANICAL STAGE of 150x120mm size. It works on a linear bearing mechanism with a right-hand CO-AXIAL movement controller with a travelling range of 75 x 45 mm which can be read to 0.01 mm on the scale provided.

LIGHT SOURCE of 6V-20W

Halogen light provides a bright and even illumination at any magnification. The light intensity control is separate from the power switch. The lamp is pre-centered with easy bulb replacement for your convenience. (without opening the base or electricals)



11

BIOLOGY ► MICROSCOPE



Gold Cross 22

OPTIONAL ATTACHMENT AND ACCESSORIES

DUAL VIEWING ATTACHMENT with Pointer Arrow enables observation of the same sharp, bright image by two separate viewers simultaneously. A movement level control allows the Pointer Arrow to be positioned anywhere in the field of view

DIRECT EXPOSURE (for Micro Photography) wherein the image formed by the objectives is projected directly onto the film through a projection lens system or beam splitters, in-between.

TRINOCULAR OBSERVATION TUBE The slider arrangement provides for 100% light to Binocular, or 100% light to the straight photo tube, to enable the maximum light for Microphotography, for best results.

PHASE CONTRAST - EQUIPMENT eliminates the need to treating specimens with chemical stains, which avoids any possible damage to the specimen helps in observing the specimen in its natural cellular structure & behavior.

CCTV & IMAGE ANALYSIS SYSTEM Enables direct viewing of the images on TV, providing a perfect media for Classroom teaching, demonstration and group discussions in Conferences and Seminars.

SIEDENTOPF HEAD with infinity corrected optics

DARK FIELD ATTACHMENT

EP-ILLUMINATOR for Incident Light Microscopy

POLARISER/ANALAYSER Attachment

Gold Cross 22 Binocular Microscope (Code No.: 30020)

is similar to Gold Cross 11 but with regular wide field eyepieces and with separate coarse and fine focussing knobs as against co-axial in Gold Cross 11

BIOLOGY

	Goldcros 11 Binocular	Goldcros 22 Binocular	Goldcros 33 Monocular	Goldcros 44 Student	Optional
Code	30010	30020	30030	30040	
Eye Piece	Ex. WF 10x (18 mm)	WF 10x	WF 10x	WF 10x	WF 6x, 15x
Objective	4x, 10x, 40x, 100x DIN	4x, 10x, 40x, 100x	4x, 10x, 40x, 100x	10x, 40x,	20x & 60x
Nosepiece	Quadruple	Quadruple	Quadruple	Triple	Quintuple
Diaphragm Condenser	Movable substage condenser NA 1.2 with IRIS Diaphragm and filter	Movable substage condenser NA 1.2 with IRIS Diaphragm and filter	Movable substage condenser NA 1.2 with IRIS Diaphragm and filter	Movable substage condenser NA 1.2 with IRIS Diaphragm and filter	
Focussing	Co-Axial	Separate	Separate	Separate	
Illumination	6V-20 W Halogen	6V-20 W Halogen	6V-20 W Halogen	mirror	
Power Supply	110 or 220V-50HZ	110 or 220V-50H	110 or 220V-50H	Non-electric	(110-220) V

GOLDCROSS

Gold Cross 33 (Code No.: 30030) Monocular Microscope is the same as Gold Cross 22 but with a single eyepiece monocular head

Gold Cross 44 (Code No.: 30040) Student Microscope A versatile Microscope suitable for a wide range of needs and applications, from elementary / high school, to college levels. It combines economy and precision craftsmanship to meet strict laboratory standards with optimum value.

Inclinable body, through 90 degrees, and a standard tube length of 160 mm. Separate coarse and fine focussing knobs, with graduation on one side. Fixed Square stage 120 x 120 mm with detachable mechanical stage having travel range of 50 x 75 mm, with graduated scales Illumination is provided through plano-concave mirror. Also available with 20W lamp for 220v (optional. A Movable substage condenser NA 1.2 with is provided with aperture selection through a Disc Diaphragm turret providing different apertures for different magnifications. Triple nosepiece, precision built, ensures centering through positive click stop.

1. Magnification may range from 24x to 1500x depending on eye piece and objective combination.
2. All eyepieces, objectives and Prisms are specially treated for anti-reflection and anti moulding to further enhance the image and longevity of the optics.
3. All the optics are strictly manufactured to the international standard with the maximum tolerance of $\pm 5\%$



BINOCULAR MICROSCOPE

STUDENT SERIES

Code No. :30070

Binocular Microscope is of entirely latest design of superb quality and excellent craftsmanship for unprecedented performance. Its precise and international standards and dimensions presents a magic appearance and matchless superiority in performance. The high quality parfocaled optical components give an excellent brighter and sharp image and are highly corrected for chromatic aberration and assure highest resolution & flatness of field required for various research and clinical work.

TECHNICAL FEATURES:

- ☞ Very superior Indian, with international standards, Binocular head rotatable through 360° and interchangeable for Trinocular, or Monocular, or straight tubes.
- ☞ Extra large stage of 130 x 130 mm, providing ample space, with a detachable mechanical stage of extra superior quality.
- ☞ Fine adjustable graduated 0-50 knob for slow motion and separate double knobs for coarse movements.
- ☞ Extra heavy revolving nose piece of international Threadings, with positive click stop giving frictionless, uniform and accurate alignment.
- ☞ Double lens, best superior Abbe condenser with iris diaphragm and swing out filter holder focussed by rack and pinion substage.
- ☞ Heavy sturdy stable base having a built in base illumination built in 12 V to 21 V.
- ☞ Enclosed rack and pinion in dust and dirt proof enclosure. Present coarse rack lock saves valuable slides and objectives.
- ☞ Complete, fitted in durable plywood storing cabinet with apartments for optics.
- ☞ Mechanical stage graduated for slide.

Code No. :30080

Model GST - 1A Binocular Microscope is same as GST - 1 but with co-axial mechanical stage

TECHNICAL FEATURES:

- ☞ Very superior Indian, with international standards, Binocular head rotatable through 360° and interchangeable for Trinocular, or Monocular, or straight tubes.
- ☞ Extra large stage of 130 x 130 mm, providing ample space, with a co-axial mechanical stage of extra superior quality.
- ☞ Fine adjustable graduated 0-50 knob for slow motion and separate double knobs for coarse movements.
- ☞ Extra heavy revolving nose piece of international Threadings, with positive click stop giving frictionless, uniform and accurate alignment.
- ☞ Double lens, best superior Abbe condenser with iris diaphragm and swing out filter holder focussed by rack and pinion substage.
- ☞ Heavy stable base having a built in base illumination built in 12 V to 21V.
- ☞ Enclosed rack and pinion in dust and dirt proof enclosure. Present coarse rack lock saves valuable slides and objectives.
- ☞ Complete, fitted in durable plywood storing cabinet with apartments for optics.
- ☞ Mechanical stage graduated for slide superior.



Code No. :30085

Same as GST - 1 but with co-axial mechanical stage and co-axial fuse /co-axial focusing.

▶ BIOLOGY ▶ MICROSCOPE

INCLINED MICROSCOPE

Code No. : 30090

Most Convenient for general Laboratory Research, Hospital and Pathology, Heomatology, Bacteriology & Medicine work.

TECHNICAL FEATURES:



- ☞ Inclined monocular tube, rotatable through 360° and interchangeable for a Binocular Head or Vertical tube for micro-photography.
- ☞ Fine adjustment through graduated knob.
- ☞ Quadruple revolving nose piece with positive click stop, bearing mounted for smooth, accurate alignment.
- ☞ Large rectangular stage, size 130mm x 130 mm, with an attachable mechanical stage with co-axial adjustment for slide manipulation.
- ☞ Two Lens Abbe Condenser with iris-diaphragm and swingout filter holder, focussed by rack and pinion substage.
- ☞ Heavy oblong sturdy base having a built in base illumination on 220 volts AC direct mains with special accentric ring-setting for light.
- ☞ Enclosed rack and pinion prevents wear due to dust and dirt. Present course rack lock prevents damage to valuable slides and objectives.
- ☞ Complete with a beautiful storing cabinet having provision for placing micro-optics.

STEREOSCOPIC MICROSCOPE

Code No. : 30100

- ☞ Magnifications 25x or 35x, further extension possible.
- ☞ The stereoscopic microscope is suitable for innumerable specific applications where stereoscopic vision viz. a three dimensional, erect image is required.

TECHNICAL FEATURES:

- ☞ Strong microscope stand of medium size with built in carrying handle sturdy base and modern finish.
- ☞ Binocular head is of straight type and interpupillary distance of each tube can be adjusted within 50 mm - 75
- ☞ Image focussing by means of rack and pinion.
- ☞ Long working distance allows convenient working.
- ☞ Large stage with black and white plate and 2 clips to hold the specimen.
- ☞ Polished wooden cabinet with lock, keys and carrying handle.



▶ BIOLOGY ▶ MICROSCOPE & OVERHEAD PROJECTOR

STUDENT MICROSCOPE

Code No. : 30110

Student Microscope Fixed Condensor is a general Student Microscope which finds a wide application for students of Biological, Medical and Agricultural Institutions with the following features.

TECHNICAL FEATURES:

Heavy Pattern. Versatile designed monocular body; 90° inclinable with a V-shape base; Total Height 32 cm.

Mechanical tube length 160 ± 1 mm. Interior dia. 40 mm.

Rack and pinion coarse motion and lever type fine adjustment.

Coarse focus range 25 mm. Fine focus range 2 mm.

Triple revolving nose piece with positive click stop.

Square specimen stage size 120 mm x 120 mm.

Two lens Abbe condensor N.A. 120 with continuously variable iris diaphragm and swingout filter-holder. Safety stopper, prevents damage to slide and objectives.

A standard plano-concave mirror in fork replaceable by a sub-stage microscope lamp. Complete with plywood storing cabinet having provision for placing micro-optics.



OVERHEAD PROJECTOR

Code No. : 30120

Projects bright and sharp image from handwritten illustrations, graphs, pictures and diagrams on transparent materials.

Uniform illuminations even at highly elevated position of the image, without need for dimming lights.

Writing stage of 250mm x 250mm to suit all standard transparencies.

Suitable for any projection distance from 1.3m to 3metres, therefore well suited even for small rooms and conference rooms.

Continuous writing from top to bottom or left to right on 10 meters long cellophane roll.

Indigenous projection lamp with longest life, easy availability, low voltage, high intensity 24 Volts, 250Watts, Halogen lamp working through high quality Transformer.

Cooling system to avoid projector overheating, self lubricating type motor, to ensure temperature is maintained at 45 °C approx.



SPECIFICATIONS

Projection lens: One element 254 mm

Condenser System: Fresnel

Condenser Projection lamp: 250W, 24V Halogen lamp

Power source: AC 220-240V, 50 Hz

Stage aperture : 250mm x 250mm

Focusing : Fine focusing with rack and pinion mechanism

Cooling system : Blower cooled

Lamp Safety : Solid state electronic control for light intensity variations.

Dimensions : 310mm (W) x 310mm (D) x 210mm(H)

Supplied with:

* Writing pack consisting of 6 grease pencils.

* Cellophane roll 10 m/ A4 size plain transparency 30 Nos, 2 No glass fuse

* Cleaning cloth 1 No.

* Dust cover packed with thermocole in sturdy cardboard box.

▶ BIOLOGY ▶ DISSECTING SET & AUTOCLAVES



GOLDCROSS DISSECTING SET

Available in:

Set of 14 instruments	Code No. : 30130
Set of 8 Instruments	Code No. : 30136
Set of 7 Instruments	Code No. : 30138

DISSECTING SET SPARES

Dissecting set spares are also available individually.



Spares	Code	Spares	Code
Dissecting Scissors	30140	Pointed needle	30147
Cuticle Scissors	30141	Arrow Needle	30148
Flapper	30142	Seeker	30149
Blow pipe	30143	Chain hook	30150
Hand Lens	30144	Blunt Forceps 5"	30151
Razor	30145	Forceps 4 " fine	30152
BP Handle	30146	x	x

AUTOCLAVES

STAINLESS STEEL



Seamless construction ensures bacteria free environment .The unit is fitted with pressure gauge, safety valve (weighted)pressure release valve & with rotational lid locking device with rubber gasket.

Autoclave	Code
Electric	30180
Non Electric	30181

ALUMINIUM

SERIES 200

AVAILABLE IN ELECTRIC OR NON ELECTRIC MODELS IN VARIOUS SIZES.

SIZE (cms)	Non-Electric		Electric		DESCRIPTION
	Model	Codes	Model	Codes	
30x30	GST-215	30172	GST-216	30180	Winged nuts
30x30	GST-217	30173	GST-218	30181	rotational lid
30x35	GST-219	30174	GST-220	30182	winged nuts

Seamless construction ensures bacteria free environment. The unit is fitted with pressure gauge, safety valve (weighted)pressure release valve & rubber gasket for seamless/ leak proof fitting.



CENTRIFUGES

CENTRIFUGE MACHINE HAND OPERATED

A single speed hand driven machine consisting of a Die pressed casted parts and a steel pinion and Worm drive. Screw clamps the machine to the bench. Finished in white/gray color with removable crank Handle. Suitable for 15 ml tubes.

Description	Code
Two tubes	30190
Four tubes	30191



MEDICO CENTRIFUGES

Code No. :30200

Low priced units meeting the majority of the small capacity centrifuging requirements of medical practitioners, pathological laboratories and hospitals for routine centrifuging tests. The units are fitted with resiliently mounted motor for vibration free performance having built in 5 steps speed regulator and one non-removable swing out rotor complete with glass tubes.

Optional : 0-60 minutes mechanical countdown timer.



DOCTOR CENTRIFUGES

Code No. :30210

A low priced unit meeting the small capacity centrifuging requirements of medical practitioners, pathological, laboratories and hospitals for routine centrifuging tests. The standard unit is fitted with resiliently mounted motor for vibration free performance, a built in 5 step speed regulator and one non-removable angle rotor. Available in 4 models, complete with glass tubes.

Optional: 0-60 minutes mechanical countdown timer



▶ BIOLOGY ▶ CENTRIFUGE

GENERAL PURPOSE LABORATORY CENTRIFUGES

Code No. :30220

Comes with speed regulator, digital speed indicator, countdown timer & has dynamic brake for quick deceleration and imbalance detector with cutoff in case of uneven loads.

Salient features:

Step less speed regulator.

Safety Lid Interlock to prevent cover opening during centrifugation.

Digital speed meter and 0-60 minutes digital countdown timer.

Dynamic brake for quick deceleration.

Imbalance detector with cutoff.



TECHNICAL DATA		
Max speed	rpm	5250
Max. Rcf	g	3900
Max. Capacity	ml	400
W xDx H	mm	365 x 415 x 305

Models	ROTOR HEADS LISTING		REDUCTION ADAPTORS (WITH GLASS TUBES)						
	Capacity	Max. Speed RPM	Max. RCF g'	101 (1x15ml)	102 (1x30ml)	111 (1xwintrob)	112 (1x3ml)	103 (1x5ml)	104 (1x8ml)
Swing Out Heads (with Glass Tubes)									
H-41	12x15ml	4000	2750	x	x	✓	✓	✓	✓
H-42	6x50ml	4000	2750	✓	✓	x	x	x	x

BIOLOGY

▶ BIOLOGY ▶ SLIDES

SLIDE BOX

For keeping 75mm x 25mm glass slides in vertical position in aluminium groove individually. Nailwood frame, plywood top & bottom, hinged top lined with printed index sheet and bottom with velvet. Fitted with brass and aluminium index card holder. Spirit polish finish.

Slide box with Aluminium groove			
No. of slides	25	50	100
Code	30300	30301	30302

For keeping 75mm x 25mm glass slides in vertical position in wooden groove individually. Nailwood frame, plywood top & bottom, hinged top lined with printed index sheet and bottom with velvet. Fitted with brass and aluminium index card holder. Spirit polish finish.

Slide box with wooden groove			
No. of slides	25	50	100
Code	30310	30311	30312

These Polystyrene Slide Boxes are durable, compact & provide utmost protection to 1" x3" slides. Heavy walls will not warp, splinter or crack. Boxes are unaffected by humidity and are thoroughly insect proof. Base of the slide Box has a numbered index for easy slide identification. Slide box with Aluminium and wooden groves are also available which are mentioned in Biology chapter.

SLIDE BOX	CODE
25 Slides	21030
50 Slides	21031
100 Slides	21032



MICRO PREPARED SLIDES

BOTANY SECTION

Category	Species	Codes	Category	Species	Codes
Algae /	Anabaena wm	30320	Bryophyta	Anthoceros thallus LS	30555
Fungi Veg.	Nostoc wm	30321		Funaria antheridia VS/WM	30556
& Rep. Stages	Nostoc Heterocyst	30322		Marchantia thallus TS	30557
	Oscillatoria wm	30323		Moss protonema WM	30558
	Chlamydomonas wm	30324		Polytrichum anteridial VS/WM	30559
	Chara veg. wm	30325		Ricca thallus TS	30560
	Chara reproductive	30326	Pteridophyta	Adiantum rhizome TS	30661
	Cladophra Marine wm	30327		Botrychium rhizome	30662
	Oedogonium Vegetative	30328		Equisetum prothallus WM	30663
	Oedogonium Capcells wm	30329		Fern prothallus with antheridia	30664
	Spirogyra vegetative	30330		Fern prothallus with archegonia	30665
	Ulothrix vegetative wm	30331		Fern prothallus with sporophyte	30666
	Volvox daughter colony wm	30332		Fern leaf with sori TS	30667
	Ectocarpus unilocular wm	30333		Fern sori WM	30668
	Batrachospermum wm	30334		Marsilea sporocarp TS	30669
	Polysiphonia antheridia wm	30335		Marsilea sorus WM	30670
	Bacteria (Typical)	30336		Selaginella strobillus WM	30671
	Coccus form	30337		Selaginella strobillus LS	30672
	Bacillus form	30338	Gymnosperm	Cycas normal root T.S.	30773
	Spirillum form	30339		Cycas coralloid root T.S.	30774
	Root nodule of Legume TS	30340		Cycas Leaflet (Pinna) T.S.	30775
	Mucor veg. WM	30341		Cycas ovule T.S.	30776
	Phytophthora host leaf TS	30342		Pinus root (old) T.S.	30777
	Rhizopus veg. WM	30343		Pinus young stem T.S.	30778
	Agaricus stipe TS	30344		Pinus male cone T.S.	30779
	Agaricus pileus VS	30345		Pinus pollen grain T.S.	30780
	Agaricus stipe & pileus VS	30346		Ephedra stem T.S.	30781
	Agaricus button stage VS	30347	Angiosperm	Typical Plant Cell (onion)	30882
	Puccinia uredon on wheat leaf TS	30348		Allium root apex mitosis	30883
	Puccinia teleuto on wheat stem TS	30349		Starch Grains	30884
	Puccinia aecidia on barberry leaf	30350		Dicot stem T.S.	30885
	Puccinia pycnidia VS	30351		Monocot stem T.S.	30886
Tissue Slides	Parenchyma, Collenchyma, Sclerenchyma, Xylem, Phloem etc. (set of 20)	30450		Dicot root T.S.	30887
				Monocot leaf T.S.	30888
				Dicot leaf T.S.	30889
				Monocot leaf T.S.	30890

► BIOLOGY ► SLIDES

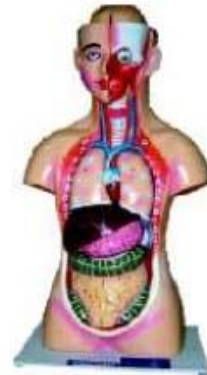
MICRO PREPARED SLIDES			
ZOOLOGY SECTION		CODES	
Protozoa	Amoeba Proteus	30950	
	Balantidium Coli WM	30951	
	Chlamydomonas	30952	
	Entamoeba Histoytica	30953	
	Euglena WM	30954	
	Malaria Parasite	30955	
	Opalina WM	30956	
	Paramoecium WM	30957	
	Paramoecium Fission	30958	
	Paramoecium Conj.	30959	
	Volvox	30960	
	Vorticella	30961	
	Porifera	Sponge Gemmule	31062
		Spongilla WM	31063
Sponge Fibers		31064	
Sycon T.S.		31065	
Coelenterata	Hydra WM	31166	
	Hydra T.S. Body	31167	
	Hydra L.S. Body	31168	
	Obelia Colony WM	31169	
Platyhelminthes /Nemathelminthes	Liver fluke TS different regions	31270	
	Planaria TS	31271	
	Tape worm scolex WM	31272	
	Tape worm proglottid immature	31273	
	Tape worm (Gravid)	31274	
	Tape worm proleittid mature	31275	
	Ascaris male TS	31276	
	Ascaris female TS	31277	
	Ancylostoma	31278	
	Hook worm WM	31279	
	Pin worm WM	31280	
	Annelida / Arthropoda	Earthworm (set of 16 slides)	31381
		Cyclops WM	31382
		Daphnia WM	31383
		Prawn TS	31384
		Cockroach (set of 16 slides)	31385
		Bed Bug WM	31386
	Anopheles or culex mosquito male	31387	
	Housefly M.P. egg larva, pupa of female adult M.P. egg larva, pupa etc. set of 16 slides etc. set of 14 slides.	31388	
Pisces (Fishes)	Ctenoid scale WM	31489	
	Cycloid scale WM	31490	
	Placoid scale WM	31491	
	Rhomboid scale WM	31492	
Histology	Mammal Histology	31593	
	Frog Histology (set of 40 slides)	31594	
	Human Histology (set of 60 slides)	31595	
Embryology	Frog Embryology (set of 10 slides)	31696	
	Chick Embryology 13,18,21,24,30,33,36,48,56,66,72,96,120 hrs. WM/TS	31697	
	Mitosis (set of 5 slides)	31698	
	Meiosis (set of 12 slides)	31699	

BIOLOGY

HUMAN TORSO

Model showing parts like eye, heart, stomach, liver etc as shown in the picture. Models available are:

Human Body Or Human Torso (90cm.) Male	Code No.: 31800
Human Torso Size (90cm.) Female	Code No.: 31801
Human Torso (sexless) Size 90cm. 8 Parts	Code No.: 31802
Mini Human Torso Size (52cms. App.)	Code No.: 31803
Human Head and Neck	Code No.: 31804



BRAIN 2 PARTS

Code No.: 31805

This model is prepared in life size with 3D technique. Dorsal view Ventral view and lateral view can be easily demonstrated. This model is dessectable into 2 parts for study of sectional view. Mid brain cerebellum & spinal cord is also shown

Also available :

Brain 4 parts Code No.: 31806



HUMAN EYE

Code No.: 31807

Only Eye ball dissectable in 7 parts is shown on stand.

Also available :

Human Eye with Orbit Code No.: 31808



HUMAN EAR

Code No.: 31809

Mounted on board size 8" x 14". This model also provides 3D view. Semicircular canals and cochlea can be taken out for close look. Ear drum too is detachable.



HUMAN HEART 4 PARTS

Code No.: 31812

This model is also fabricated in 3D, but divisible into 4 parts mounted on stand. Also available :

Human Heart 2 Parts	Code No.: 31813
Lungs with Heart	Code No.: 31814
Human Lung	Code No.: 31815



KIDNEY WITH BLADDER

Code No.: 31816

Mounted on wooden base size 12" x 16". It clearly depicts the urinary system. Position of kidneys, ureter and bladder is demonstrated. Also available :

Kidney in Section (Human) Code No.: 31817



► BIOLOGY ► MODELS ► HUMAN



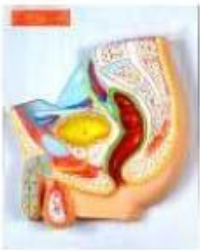
HUMAN NERVOUS SYSTEM

Code No.: 31819

Fitted on polished wooden board size 10" x 22". Prominent nerves are depicted. Also available:

Human Circulation System . Code No.: 31818

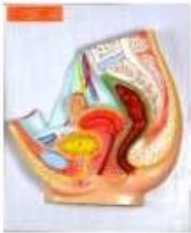
Human Liver. Code No.: 31824



HUMAN REPRODUCTIVE (URINOGENITAL) SYSTEM

MALE Code No.: 31820

Fixed on board. The Genito Urinary Tract in the Male is Shown. This model is of immense use to students. Penis, Testis, Scrotum, Vas Deferens, Ureter & rectum are sculpted and coloured to make the demonstration easy.



FEMALE Code No.: 31821

Fixed on board. The Genito Urinary Tract in the Female is Shown. This model is of immense use to students. Uterus, Ureter & rectum are sculpted and coloured to make the demonstration easy.



HUMAN DIGESTIVE SYSTEM

Code No.: 31822

Fixed on wooden board size 24" x 10" in this model. Alimentary tract is shown. Oesophagus, Stomach Small Intestine, Large Intestine, Appendix and finally Anus is demonstrated.



HUMAN RESPIRATORY SYSTEM

Code No.: 31823

Nasal cavity, Epiglottis, Larynx, Bronchus and Bronchial tubes are shown. One leg is shown intact and the other is shown in section in which Air Sacs can be seen.



HUMAN BABY WITH PELVIS

Code No.: 31871

Fixed on board. Showing female Pelvis with baby. This model is of immense use to students.

For more models please see our current price list.

HUMAN SKELETON

Showing all parts (Bones) in the body.
Also available :

- Human Skeleton Articulated Life Size Code No.: 31872
- Folding Metal Stand Code No.: 31873
- Human Skeleton (Disarticulated) Code No.: 31874
- Mini Human Skeleton Code No.: 31875
- Mini Human Skeleton Plastic Code No.: 31876



Code No. :31875



FIBRE GLASS
ON STAND 5 FEET MODEL
Code No. :31885



PLASTIC ON STAND
Code No. :31880



ON STAND
TOP QUALITY TABLE MODEL
Code No. :31890

▶ **BIOLOGY** ▶ **MODELS**

MODELS	
Human Models - Made from fibre glass	
CODE	NAME
31800	Human Body or Human Torso (90cm) Male
31801	Human Torso size (90cm) Female
31802	Human Torso (Sexless) size about 90cm 8 parts
31803	Mini Human Torso size (52cm app.)
31804	Human Head and Neck
31805	Brain 2 parts
31806	Brain 4 parts
31807	Human Eye
31808	Human Eye with Orbit:
31809	Human Ear
31810	Teeth with Lower Jaw
31811	Human skin
31812	Human Heart 4 Parts
31813	Human Heart 2 parts
31814	Lungs with Heart
31815	Human Lung
31816	Kidney With Bladder
31817	Kidney in Section (Human)
31818	Human Circulation System
31819	Human Nervous System
31820	Human Reproductive (Urinogenital)System Male
31821	Human (Urinogenetal) Reproduction System Female
31822	Human Digestive System
31823	Human Respiratory System
31824	Human Liver
31825	Stomach
31850	Evolution of Man
	(i) Crogmagnon (ii) Sinathropus (iii) Pthecanthropus
	(iv) Australopithecus
31854	Evolution of Man Set of 14 model fitted on 4 large size boards
	1. PLIOTHECUS
	2. PROCONSUL
	3. DRYOPITHECUS
	4. OREOPITHCUS
	5. RAMA PITHECUS
	6. AUSTRALOPITHECUS
	7. AUSTRALOPITHECUS ROBUSTUS
	8. HOMOABILIS
	9. HOMOERECTUS
	10. EARLY HOMO SPIENS
	11. RHODESIAN MAN
	12. NEANDERTHAL
	13. CROGMAGNON MAN 14. MODERN MAN
31868	Bony Pelvis female
31869	Foetal Skull
31870	Development of Human Embryo
31871	Female Pelvis with Baby
31872	Human Skeleton Articulated Life Size
31873	Folding Metal Stand
31874	Human Skeleton (Disarticulated)
31875	Mini Human Skeleton
31876	Mini Human Skeleton Plastic
ANIMAL CELLS & TISSUE MODELS	
31977	Typical Animal Cell under Electron Microscope
31978	Cell Division Mitosis
31979	Cell Division Meiosis
31980	D.N.A (Deoxyribo Nucleic Acid)
31981	R.N.A (Ribo nucleic Acid)

STEM T.S. DICOT

Code No.: 32329

This model shows all the details of stem mounted on board.



ROOT T.S. MONOCOT

Code No.: 32323

Showing all details of Monocot root on board.



ROOT T.S DICOT On board.

Code No.: 32324

Showing all details of Monocot root on board.



STEM T.S. (MONOCOT)

Code No.: 32328

Showing all details of tissues onboard



LEAF T.S. MONOCOT

Code No.: 32331

All tissues are shown with details on board.

For other models see index on next page



► BIOLOGY ► MODELS

MODELS	
CODES	GENERAL ZOOLOGICAL MODELS
32100	Amoeba Mounted on board , showing general structure
32101	Paramecium is mounted on board in lateral view
32102	Earthworm Dissection Shows prominent internal organs
32103	Cockroach Dissection All dissected parts
32104	L.H.House Fly L.H.stages mounted on 12" x 18" board
32105	L.H.Mosquito (Culex) L.H.stages from Eg to Adult on board
32106	L.H.Mosquito Anopheles L.H.stages from Egg to Adult on board
32107	L.H.Housefly Eggs Catterpillar , Pupa Head of Imago and adult , housefly in dorsal view is shown
32108	L.H.Butterfly Eggs Catterpillar , Pupa Head of Imago and adult . Butterfly in dorsal view is shown
32109	L.H.Silk Worm Eggs Cocoon Catterpillar , Pupa and fully development silk worm is shown.
32110	L.H.Honey Bee Gradual development in L.H. stages are depicted worker Queen and Drone are aslo shown.
CODES	MODEL OF FROG , RABBIT & RAT
32210	Dissection
32211	Arterial System
32212	Venous System
32213	Heart Dissected
32214	Brain
32215	Skin
32216	Reproductive System Male
32217	Reproductive System Female
32218	Nervous System
32219	Digestive System
32220	Excretory System
32221	Development of Frog
32222	Larval Development & Metamorphosis
Botany Models Code - Made of Fireglass Unbreakable Material	
32320	Typical Plant Cell
32321	Mitosis Plant Cell division
32322	Meiosis Plant Cell Division
32323	Root T.S. Moncot
32324	Root T.S. (Dicot)
32325	Root T.S. (Dicot& Monocot)
32326	Root Monocot
32327	Root Anatomy
32328	Stem T.S. (Monocot)
32329	Stem T.S. Dicot
32330	Leaf T.S (Dicot)
32331	Leaf T.S (Monocot)
32332	Dicot Leaf Anatomy
32333	Owules Types
32334	Seed Germination
32335	Typical Flower
32336	Typical Flower
32337	Ovary with Stamen

▶ BIOLOGY ▶ CHART

CHARTS

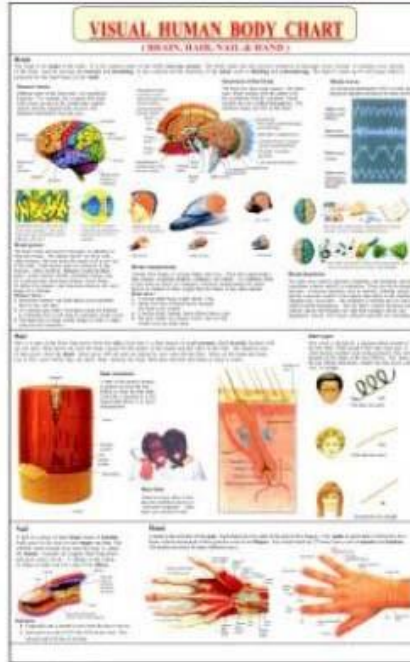
Chart Size Codes					
CODE	width	cms	length	Description	pattern
AS	20	x	35	Plastic 3 D raised	in sets only
AS 1	20	x	35	Plastic 3 D raised	With hanging hooks in sets only
B 1	35	x	50	Plastic 3 D raised	Sheets
B 2	35	x	50	Plastic 3 D raised	Sheets with hanging hooks
C 1	50	x	70	Plastic 3 D raised	Sheets
C 2	50	x	70	Plastic 3 D raised	Sheets with hanging hooks
D 1	55	x	90	Paper laminated	Individual sheet
E 1	75	x	100	Plastic charts	Individual sheet
E 2	75	x	100	Plastic charts with rollers	Individual sheet
E 3	75	x	100	Rexin black or white	Individual sheet
F 1	100	x	75	3 D raised models PVC	Individual sheet
G 1	100	x	150	Rexin white only	Individual sheet

Human Body Series	
paper laminated (56cmx90cm)	
33000	Skeleton
33001	Teeth
33002	Blood Circulation & Heart
33003	Blood Group, Blood Pressure & Blood Cells
33004	Five senses
33005	Brain, Hair, Nail & Hand
33006	Muscles
33007	Heart attack, Cancer & AIDS
33008	Digestive & Urinary Systems
33009	Respiratory & Nervous System
33010	Kidney & Liver
33011	Male & Female Genital Organs

▶ BIOLOGY ▶ CHART



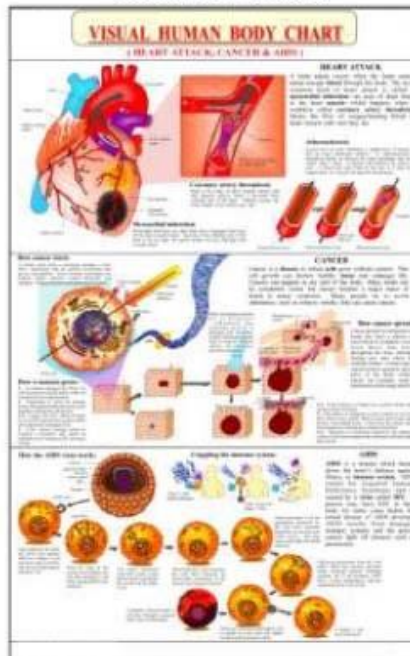
FIVE SENSES
Code No.: 33004



BRAIN, HAIR, NAIL & HAND
Code No.: 33005



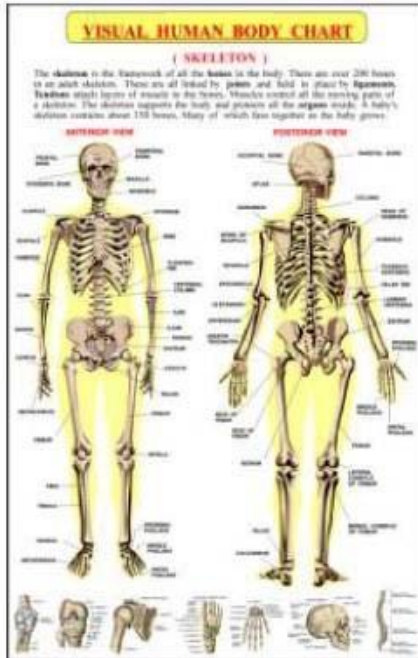
MUSCLES
Code No.: 33006



HEART ATTACK, CANCER & AIDS
Code No.: 33007

BIOLOGY

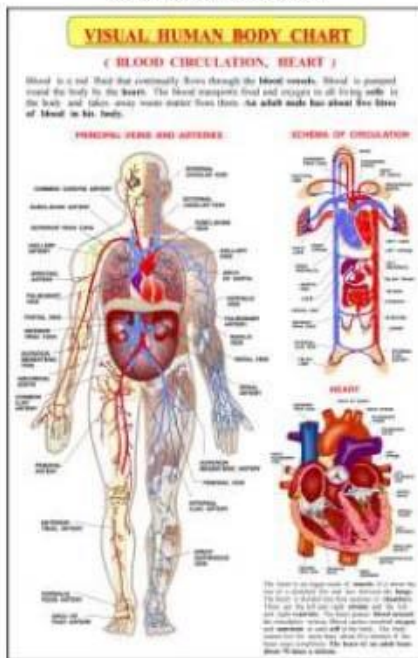
BIOLOGY ▶ **CHART**



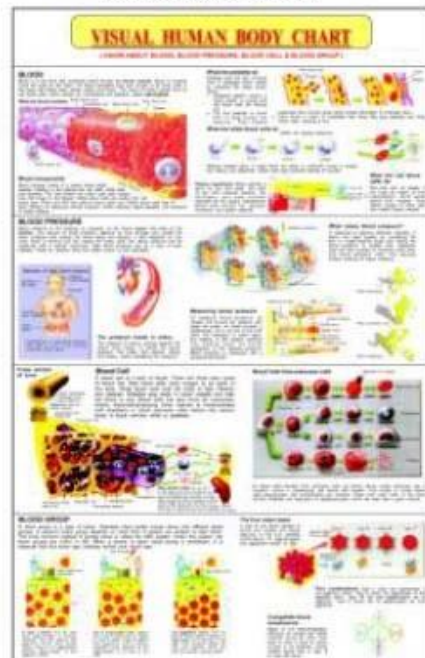
SKELETON
Code No.: 33000



TEETH
Code No.: 33001



BLOOD CIRCULATION & HEART
Code No.: 33002

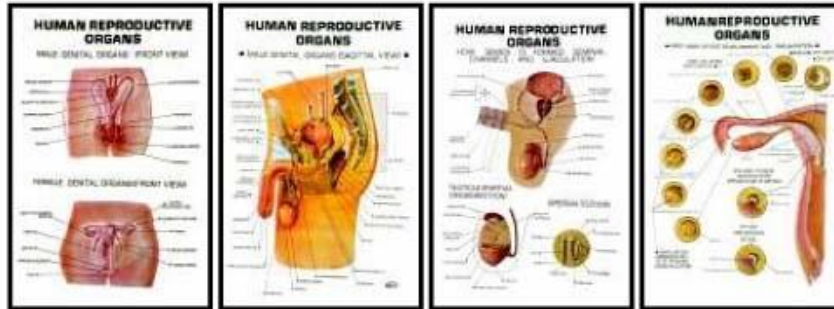


BLOOD, PRESSURE & CELLS GROUP
Code No.: 33001

BIOLOGY CHART



HUMAN REPRODUCTIVE ORGANS (SET OF 8)



**Available Sizes(see chart)
AS, AS 1 , B 1, B 2 , C 1 , C 2**



HUMAN REPRODUCTIVE ORGAN (Set of 8)	
Size	Code
AS set	33250
AS 1 set	33260
B 1 set	33270
B 2 set	33280
C 1 set	33290
C 2 set	33300

Individual Codes for different sizes						
Charts	AS	AS 1	B 1	B 2	C 1	C 2
Male Genital organs (front view)	33251	33261	33271	33281	33291	33301
Male genital organs	33252	33262	33272	33282	33292	33302
How semen is formed	33253	33263	33273	33283	33293	33303
First Week of Egg Development & Implantation	33254	33264	33274	33284	33294	33304
Fertilization (Cross Section diagram of an Ovary)	33255	33265	33275	33285	33295	33305
Eight Month Old Fetus	33256	33266	33276	33286	33296	33306
Various Stages of Embryonic Development	33257	33267	33277	33287	33297	33307
Female Genital Organs (Sagittal View)	33258	33268	33278	33288	33298	33308

BIOLOGY

BIOLOGY ▶ CHART

HUMAN ANATOMY (SET OF 11)

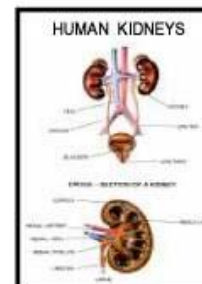
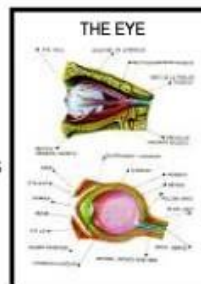
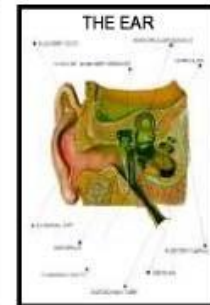
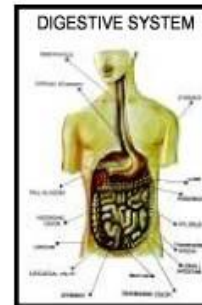
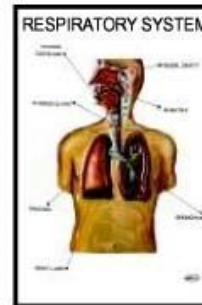
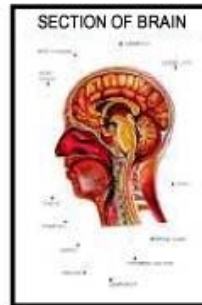
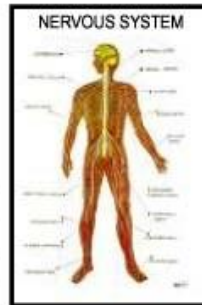
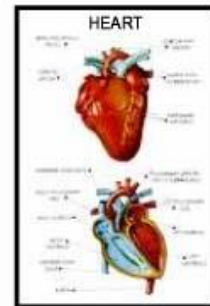
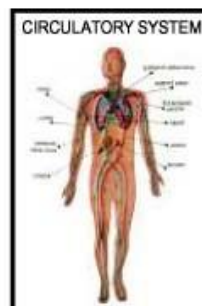
**Available Sizes
AS, AS 1, B 1, B 2, C 1, C 2**



HUMAN ANATOMY (Set of 11)	
Size code	Code
AS set	33100
AS 1 set	33120
B 1 set	33140
B 2 set	33160
C 1 set	33180
C 2 set	33200

Individual code for the size AS	
Code	Charts
33101	SKELETON
33102	CIRCULATORY SYSTEM
33103	HEART
33104	NERVOUS SYSTEM
33105	SECTION OF BRAIN
33106	MUSCLES
33107	DIGESTIVE SYSTEM
33108	RESPIRATORY SYSTEM
33109	THE EAR
33110	THE EYE
33111	HUMAN KIDNEYS

Similarly individual codes for other set of sizes starts after their set code as per the table shown above.



BIOLOGY ► CHART

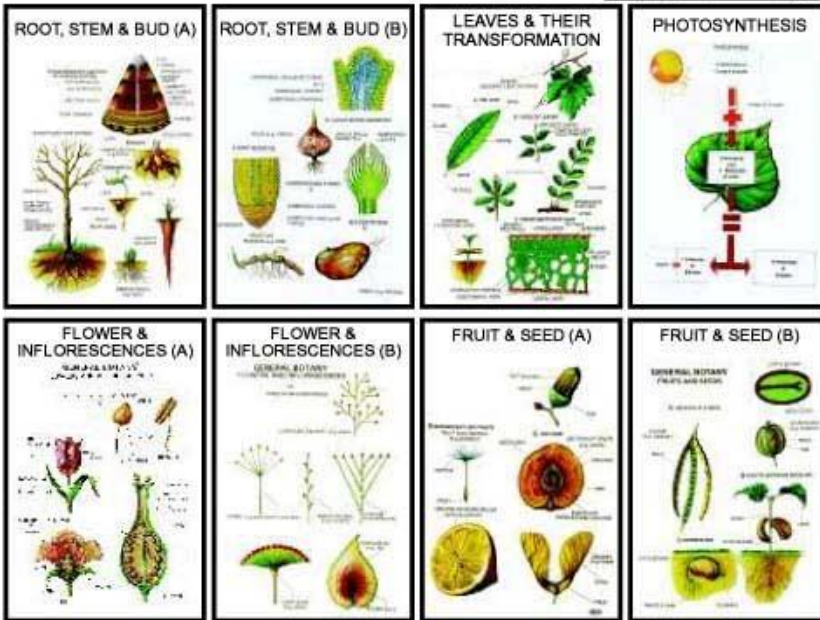


BOTANY- I (SET OF 8)

BOTANY-I
Available Sizes
AS, AS 1, C 1, C 2

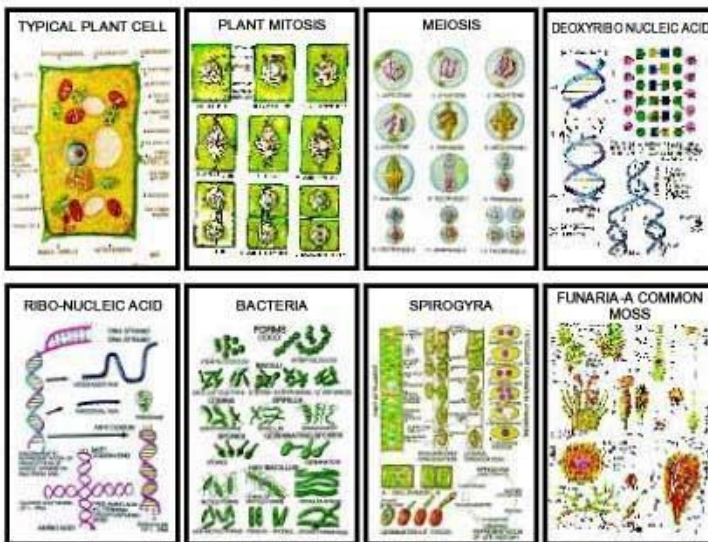
Botany-1 (set of 8)	
Size	Code
AS set	33330
AS 1 set	33340
C 1 set	33350
C 2 set	33360

Code for size - AS	Charts
33331	Root, Stem & Bud (A).
33332	Root, Stem & Bud (B).
33333	Leaves & their transformation.
33334	Photosynthesis.
33335	Flower & Inflorescences (A).
33336	Flower & Inflorescences (B).
33337	Fruit & Seeds (A).
33338	Fruit & Seeds (B).



BOTANY- 2 (SET OF 8)

Available Sizes
AS, AS 1, B 1, B 2, C 1, C 2



Botany-2 (set of 8)	
Size	Code
AS set	33390
AS 1 set	33400
B 1 set	33410
B 2 set	33420
C 1 set	33430
C 2 set	33440

Code for size - AS	BOTANY II
33391	Typical plant cell.
33392	Plant Mitosis.
33393	Meiosis.
33394	D.N.A.
33395	R.N.A.
33396	Bacteria.
33397	Spirogyra.
33398	Funaria.

Similarly individual codes for other set of sizes starts after their set code as per the table shown above.

BIOLOGY

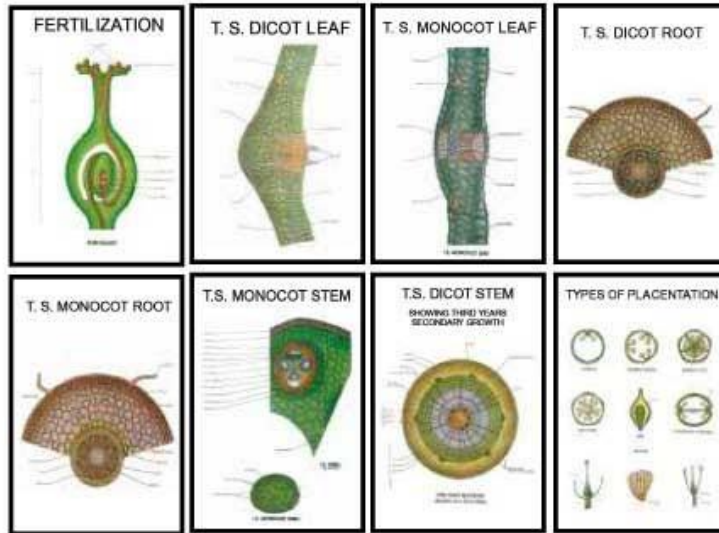
BIOLOGY CHART



BOTANY- 3 (SET OF 8)

**Available Sizes
AS, AS1, C1, C2**

Botany-3 (set of 8)		Codes for size - C 1	Charts
Size	Code	33481	Fertilization.
AS set	33460	33482	T.S. Dicot leaf.
AS 1 set	33470	33483	T.S. Monocot leaf.
C 1 set	33480	33484	T.S. Dicot root.
C 2 set	33490	33485	T.S. Monocot root.
		33486	T.S. Dicot stem.
		33487	T.S. Monocot stem.
		33488	Types of placentation.



BOTANY- 4 (SET OF 11)

**Available Sizes
AS, AS 1, C 1, C 2**

Botany-4 (set of 11)	
Size	Code
AS set	33520
AS 1 set	33540
C 1 set	33580
C 2 set	33580

Order/size - AS	Chart Number/AS	Order/size - AS	Chart Number
0001	0001	0001	0001
0002	0002	0002	0002
0003	0003	0003	0003
0004	0004	0004	0004
0005	0005	0005	0005
0006	0006	0006	0006
0007	0007	0007	0007
0008	0008	0008	0008
0009	0009	0009	0009
0010	0010	0010	0010
0011	0011	0011	0011

Similarly individual codes for other set of sizes starts after their set code as per the table shown above.



BIOLOGY CHART



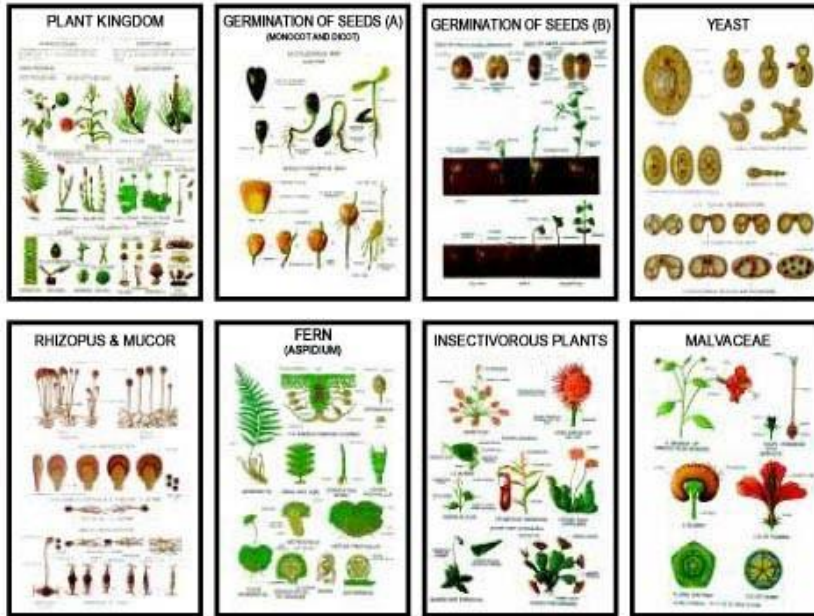
BOTANY- 5 (SET OF 8)

**Available Sizes
AS, AS 1, C 1, C 2**

Botany-5 (set of 8)	
Size	Code
AS set	33610
AS 1 set	33620
C 1 set	33630
C 2 set	33640

Code for size - C 2	Charts
33641	Plant Kingdom.
33642	Germination of Sunflower & Maize
33643	Germination of Bean & Pea
33644	Yeast
33645	Rhizopus & Mucor
33646	Fern
33647	Insectivorous Plants
33648	Malvaceae

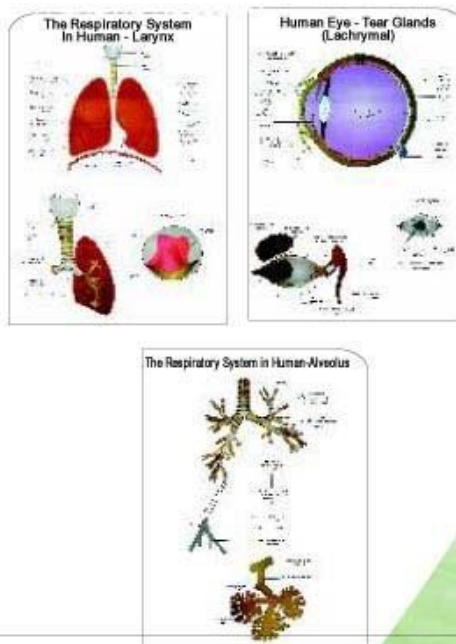
Similarly individual codes for other set of sizes starts after their set code as per the table shown above.



HUMAN PHYSIOLOGY

**Available Sizes
E 1, E 2**

Code for size - E 1	Code for size - E 2	Charts
33700	33730	The Lymphatic System in Human
33701	33731	Excretory System in Human -Kidney, L.S.
33702	33732	Excretory System in Human -Ureters
33703	33733	Excretory System in Human - Urinary bladder
33704	33734	Excretory System in Human - Malpighian Corpuscle
33705	33735	T.S. in Human Skin
33706	33736	Reproductive System in Human
33707	33737	Human Brain External Features
33708	33738	L.S. in Human eye-Eye Muscle
33709	33739	L.S. in Human eye-Tear glands
33710	33740	L.S. in Human eye - Physiological diseases of eye
33711	33741	Ear in Human and its parts
33712	33742	Skeletal System in Human
33713	33743	Endocrine glands of Human
33714	33744	Digestive System in Human
33715	33745	Circulatory System in Human-Types of blood cells
33716	33746	Circulatory System in Human - L.S. in heart & T.S. in blood vessel
33717	33747	Circulatory System in Human - Vein valves
33718	33748	Circulatory System in Human - Systematic & Pulmonary circulation in human.
33719	33749	The Respiratory System in Human - Larynx
33720	33750	The Respiratory System in Human - Tracheae
33721	33751	The Respiratory System in Human - Alveolus
33722	33752	Human-L.S. in Central Nervous System (CNS)
33723	33753	Region in which the neural impulses transport from to central nervous system through the synapse in Human
33724	33754	Human Reflexion Arch
33725	33755	Muscular System
33726	33756	Nervous System
33727	33757	Teeth



BIOLOGY

BIOLOGY ▶ CHART

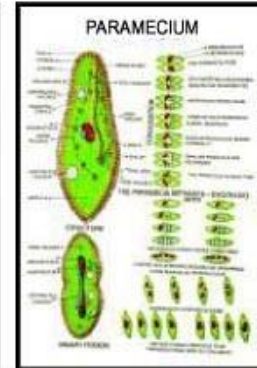
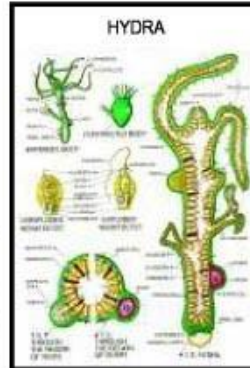


ZOOLOGY - I (SET OF 8)

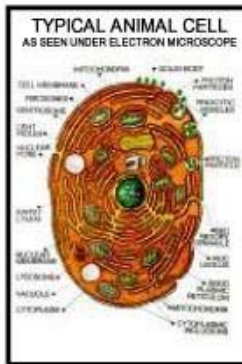
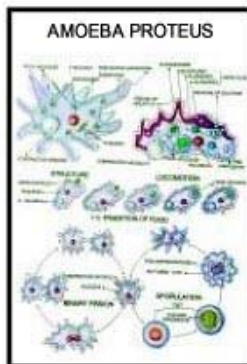
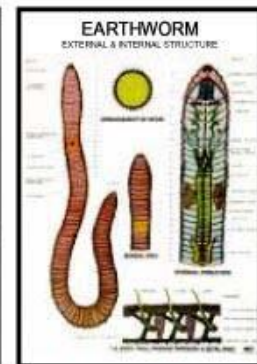
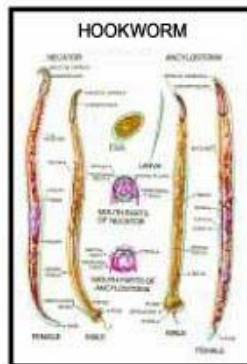
**Available Sizes
AS, AS 1, C 1, C 2**

Zoology-1 (set of 8)	
Size	Code
AS set	33800
AS 1 set	33810
C 1 set	33820
C 2 set	33830

Code for size - AS 1	Charts
33811	Typical Animal Cell
33812	Animal Mitosis
33813	Hydra
33814	Paramecium
33815	Amoeba Proteus
33816	Hook worm
33817	Tapeworm
33818	Earthworm



Similarly individual codes for other set of sizes starts after their set code as per the table shown above.



BIOLOGY CHART

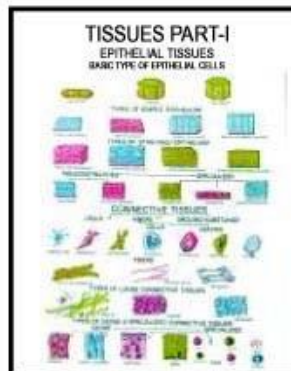
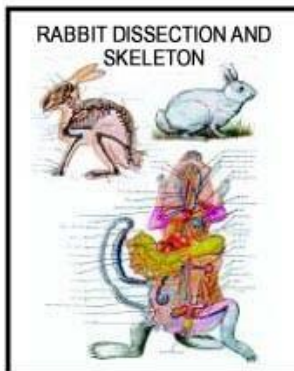
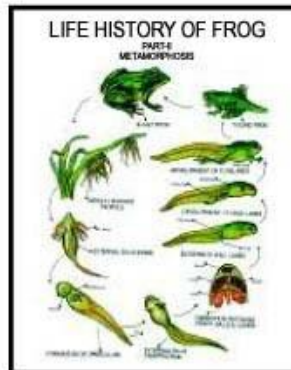
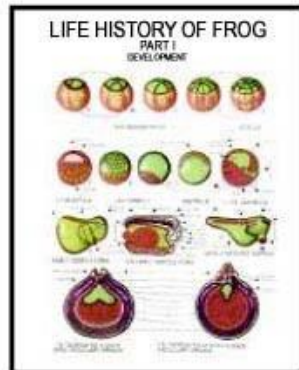
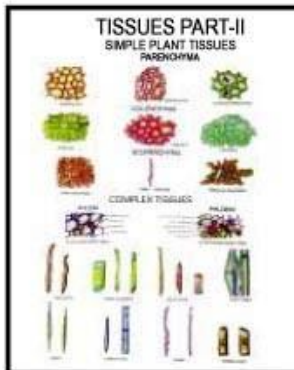
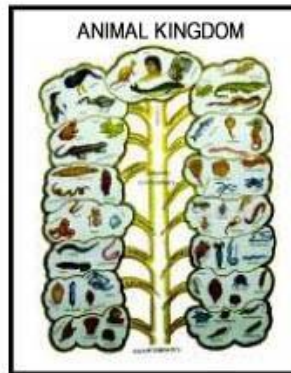
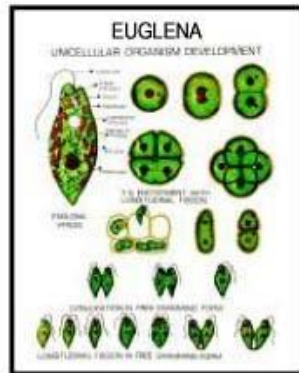


ZOOLOGY - 2 (SET OF 8)

**Available Sizes
AS, AS 1, C 1, C 2**

Code for size - AS	Charts
33901	Euglena
33902	Animal Kingdom
33903	L.H. of frog (Development)
33904	L.H. of frog (Metamorphosis)
33905	L.H. of Mosquito
33906	Epithelial & Connective Tissue
33907	Simple & Complex Tissue
33908	Rabbit Dissection & Skeleton

Zoology-2 (set of 8)	
Size	Code
AS set	33900
AS 1 set	33910
C 1 set	33920
C 2 set	33930



Similarly individual codes for other set of sizes starts after their set code as per the table shown above.

BIOLOGY

BIOLOGY ► CHART

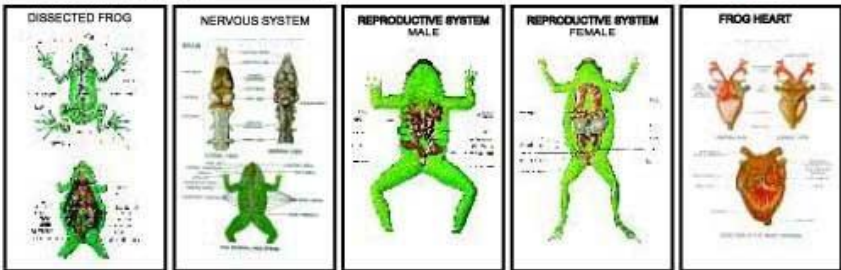
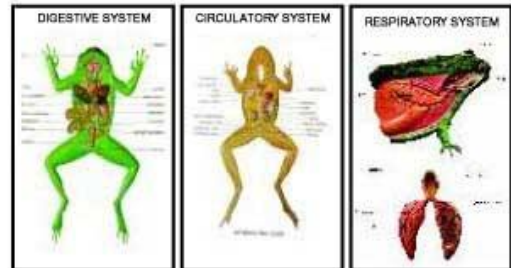


ZOOLOGY - 3 FROG (SET OF 8)

**Available Sizes
AS, AS 1, C 1, C 2**

Zoology-3 (set of 8)	
Size	Code
AS set	34000
AS 1 set	34010
C 1 set	34020
C 2 set	34030

Code for size -AS	Charts
33031	Frog Anatomy and Skeleton.
33032	Frog Digestive.
33033	Frog Circulatory.
33034	Frog Respiratory System
33035	Frog Nervous System
33036	Frog Reproductive System (Male)
33037	Frog Reproductive System (Female)
33038	Frog Heart

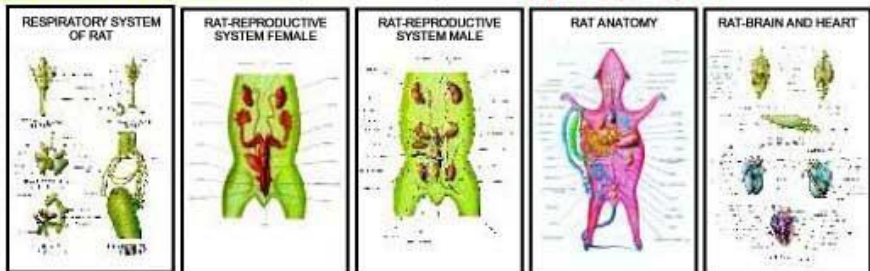


Similarly individual codes for other set of sizes starts after their set code as per the table shown above.

ZOOLOGY - 4 RAT (SET OF 8)

**Available Sizes
AS, AS 1, C 1, C 2**

Zoology-4 (set of 8)	
Size	Code
AS set	34100
AS 1 set	34110
C 1 set	34120
C 2 set	34130





Similarly individual codes for other set of sizes starts after their set code as per the table shown above.

BIOLOGY ▶ **CHART**



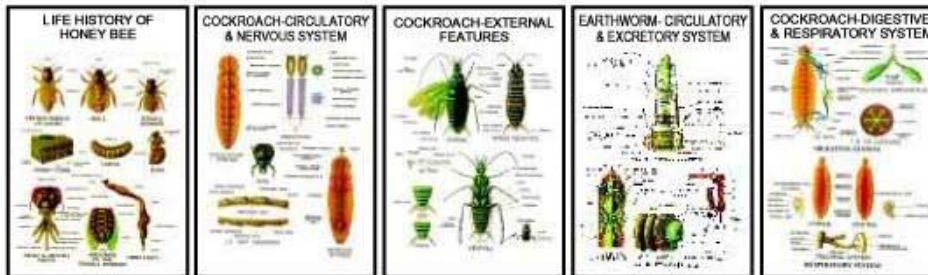
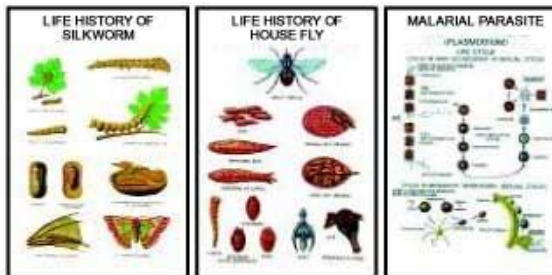
ZOOLOGY - 5 (SET OF 8)

Available Sizes
AS, AS 1, C 1, C 2

Code for size -C 1	Charts
34221	Life History of Honey Bee
34222	Life History of Silkworm
34223	Life History of Housefly
34224	Malarial Parasite(Plasmodium)
34225	Cockroach - Circulatory & Nervous System
34226	Cockroach-External features
34227	Earthworm-Circulatory & Excretory System.
34228	Cockroach - Digestive & Respiratory System

Zoology-5 (set of 8)	
Size	Code
AS set	34200
AS 1 set	34210
C 1 set	34220
C 2 set	34230

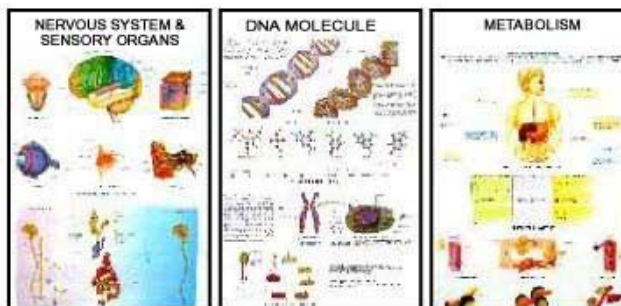
Similarly individual codes for other set of sizes starts after their set code as per the table shown above.



GENERAL

Available Sizes
AS, AS 1, C 1, C 2

Charts	Code for size -AS	Code for size -AS1	Code for size -C 1	Code for size -C 2
Metabolism	34301	34311	34321	34331
DNA Molecule	34302	34312	34322	34332
Nervous System & Sensory Organs	34303	34313	34323	34333
Skull & Joints	34304	34314	34324	34334
How Diseases are Spread	34305	34315	34325	34335
Garden at Night	34306	34316	34326	34336

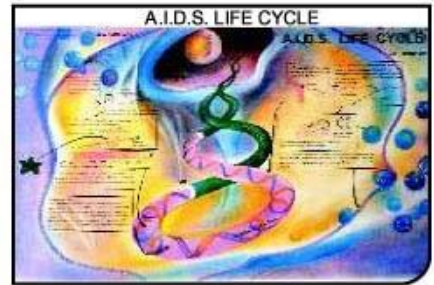


BIOLOGY

BIOLOGY CHART

AIDS CHARTS (SET OF 6)

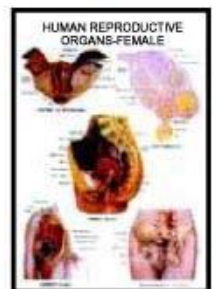
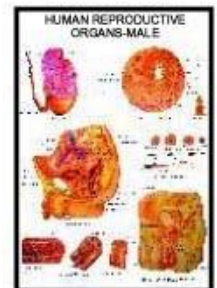
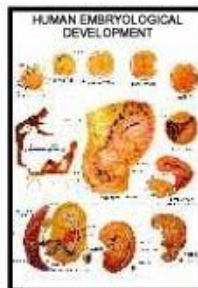
**Available Sizes
E 1, E 2**



Code for size - E 1	Code for size - E 2	Charts
33400	33410	AIDS Symptoms and Prevention.
33401	33411	Non-contagious Nature of AIDS.
33402	33412	Transmission of Virus that Causes AIDS.
33403	33413	Sexually Transmitted Diseases (S.T.D.)
33404	33414	Life Cycle of AIDS.
33405	33415	Immune System.

HUMAN REPRODUCTION

**Available Sizes
E 1, E 2**



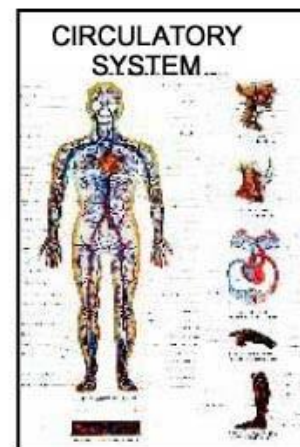
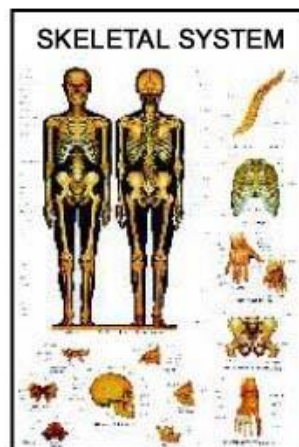
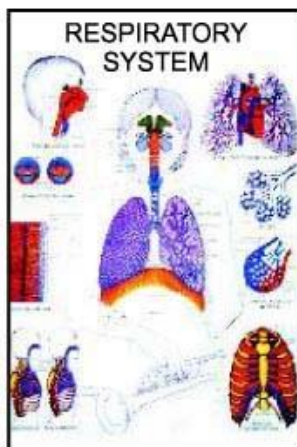
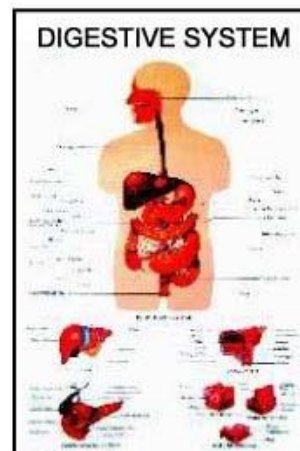
Code for size - E 1	Code for size - E 2	Charts
34450	34460	Human Embryological Development.
34451	34461	Human Life Cycle (Birth).
34452	34462	Human Reproductive Organs Male.
34453	34463	Human Reproductive Organs Female.

► BIOLOGY ► CHART

HUMAN PHYSIOLOGY CHARTS

Code for size - E 1	Code for size - E 2	Charts
34500	34540	Skeletal System
34501	34541	Muscular System
34502	34542	Circulatory System
34503	34543	Nervous System
34504	34544	Digestive System
34505	34545	Teeth and Skin
34506	34546	Human Eye , Ear and Head
34507	34547	Lymphatic System
34508	34548	Respiratory System
34509	34549	Endocrine System
34510	34550	Nutrition
34511	34551	Immune System
34512	34552	Human Nose
34513	34553	Human Heart
34514	34554	Excretory System
34515	34555	The Eye
34516	34556	The Ear
34517	34557	The Kidney
34518	34558	Human Lungs
34519	34559	Human Liver
34520	34560	Human Brain
34521	34561	Skin & Sensation
34522	34562	Nervous System & Sensory Organs
34523	34563	Metabolism
34524	34564	Skull & Joints

Available Sizes
E 1, E 2

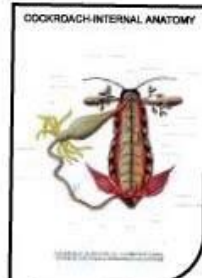
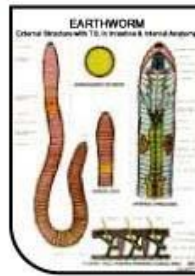
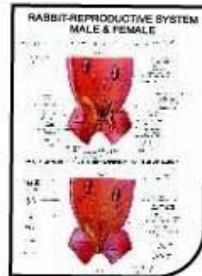
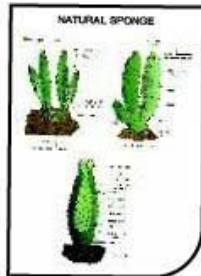


BIOLOGY

BIOLOGY CHART

ZOOLOGY CHARTS

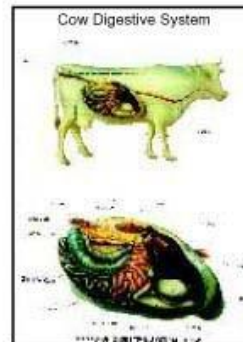
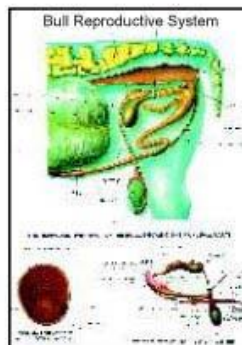
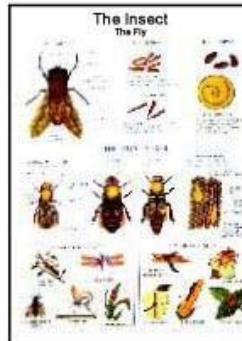
Available Sizes
E 1, E 2



Code for size - E 1	Code for size - E 2	Charts	Code for size - E 1	Code for size - E 2	Charts
34600	34630	Epithelial Tissues-Simple	34670	34720	Rabbit-General features
34601	34631	Epithelial Tissues-Stratified	34671	34721	Encliestoma worm-male, female, magnified head and life cycle.
34602	34632	Connective Tissues-Loose	34672	34722	Osteichthyes & condrichthyes- External feature to show the gills.
34603	34633	Connective Tissues-Skeleton (Bone, Cartilage)	34673	34723	Osteichthyes & condrichthyes- L.S. In head that show region & structure of gills.
34604	34634	Connective Tissues-Blood	34674	34724	Clam- External features
34605	34635	Nerve Cells-Types of nerve cells	34675	34725	Clam-Section in shell clamp to show the formation of pearl
34606	34636	Nerve Cells-Neuroglia	34676	34726	Cockroach-External
34607	34637	Types of Muscular Cells	34677	34727	Cockroach-The terminal of ventral region of male and female
34608	34638	Plasmodium Vivax Life Cycle	34678	34728	Cockroach-Stages of development of cockroach-insect
34609	34639	Amphioxus embryological development	34679	34729	Star Fish-Dorsal surface
34610	34640	Sponge-external morphology with T.S.	34680	34730	Star Fish-Ventral surface
34611	34641	L.S. in simple sponge	34681	34731	Star Fish-Water Vascular System
34612	34642	Obelia life cycle & T.S. in Medusa	34682	34732	Frog-External Features
34613	34643	Echinococcus life cycle & hydatid cyst	34683	34733	Frog-Fore limb and hind limb
34614	34644	Pin Worm life cycle	34684	34734	Snake-External Features
34615	34645	Earthworm-External structure with T.S. in intestine & internal anatomy	34685	34735	Snake- Head and mouth region
34616	34646	Earth worm-Circulatory system with reproductive system	34686	34736	Pigeon-Respiratory System
34617	34647	L.S. through mouth snail	34687	34737	Pigeon-L.S. of egg
34618	34648	Snail-Reproductive system	34688	34738	Pigeon-External Features
34619	34649	Crayfish-T.S. in branchial chamber	34689	34739	Camel-External Features
34620	34650	Crayfish-Reproductive male & female	34690	34740	Camel-Stomach (Ruminant) & itsparts
34621	34651	Crayfish-Feathery gills	34691	34741	Hydra
34622	34652	Cockroach-Mouth parts	34692	34742	Circulatory system in Grass Hopper
34623	34653	Cockroach-Internal anatomy	34693	34743	Digestive system in fish
34624	34654	Amphioxus-General Structure	34694	34744	Ascaris worm (male and female)
34680	34710	Amphioxus-Circulatory System	34695	34745	Life Cycle of Frog (set of 2)
34661	34711	Amphioxus-Lateral View	34696	34746	Tape Worm-External Features with life cycle
34662	34712	Fish-Circulatory System	34697	34747	Lizards
34663	34713	Fish-Reproductive & Excretory System for male & female	34698	34748	Turtles
34664	34714	Frog-Circulatory System & L.S. in Heart	34699	34749	Natural Sponge
34665	34715	Frog-Skeletal System with Common Vertebra	34700	34750	Mammal Embryo
34666	34716	Pigeon-Skeletal System with fore & hind limbs	34701	34751	Lamb Heart
34667	34717	Pigeon-Arterial & Venous System	34702	34752	Lamb Lungs
34668	34718	Rabbit-Arterial & Venous System with L.S. in heart.	34703	34753	Earth Worm
34669	34719	Rabbit-Reproductive System male and female	34704	34754	Medical Leech
			34705	34755	Star Fish
			34706	34756	Funaria
			34707	34757	Equisetum
			34708	34758	Fucus
			34709	34759	Snail
			34710	34760	Clam
			34711	34761	Insects
			34712	34762	Prawn
			34713	34763	Amphioxus
			34714	34764	Typical Animal Cell
			34715	34765	Vertebrates Skeleton

GENERAL SCIENCE & DAIRY FARMING
**Available Sizes
E 1, E 2**

Code for size - E 1	Code for size - E 2	Charts
General Science		
34800	34870	The Insects (The Fly)
34801	34871	Reproduction of Plants (Part I) Seed Parts Germination and Pollination.
34802	34872	Reproduction of Plants (Part II) Mendels law Supply of Oxygen, Carbondioxide and Nitrogen
34803	34873	The Bird, Food, Beaks & Jaws.
34804	34874	Plants and their Parts (Part I) Flower.
34805	34875	Plants and their Parts (Part II) Root & Stem.
34806	34876	Types of Animals (Part-II) Paramecium, Amoeba, Hydra, Worm, Crayfish, Spider.
34807	34877	Types of Animals (Part II) Fish, Amphibian, Reptiles, Birds and Mammals.
34808	34878	Foods and their uses Part-I
34809	34879	Foods and their uses Part-II
34810	34880	Plant Diseases and their control.
34811	34881	Animal Diseases and their control.
34812	34882	Human Body-All Parts.
34813	34883	Germination
34814	34884	Classification of Plants.
34815	34885	Classification of Animals.
34816	34886	Oxygen Cycle.
34817	34887	Carbon Cycle.
34818	34888	Nitrogen Cycle.
34819	34889	Reproduction in Animals Part-I
34820	34890	Reproduction in Animals Part-II
34821	34891	Photosynthesis
34822	34892	Life History of Butterfly
34823	34893	Butterfly Part-I
34824	34894	Butterfly Part-II
DAIRY FARMING		
34830	34910	Bull Reproductive System
34831	34911	Cow Reproductive System
34832	34912	Cow Digestive System
34833	34913	Cow Respiratory System
34834	34914	Cow Urinary System
34835	34915	Cow Skeleton System
34836	34916	Lamb Heart
34837	34917	Lamb Lungs
34838	34918	Bird Skeleton
34839	34919	Bird Respiratory System
34840	34920	Bird Digestive System
34841	34921	Mono Gastric Digestive System in Animals
34842	34922	Chick Embryology (Set of Two charts)
34843	34923	Sheep - Male Reproductive System
34844	34924	Sheep - Female Reproductive System
34845	34925	Chick Embryology Set (Part-I)
34846	34926	Chick Embryology Set (Part-II)

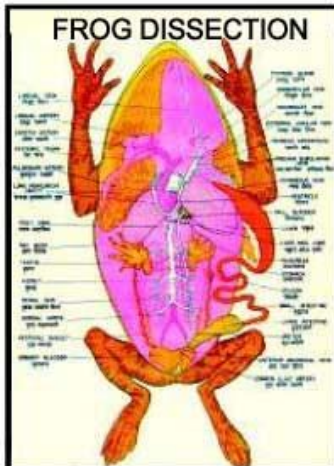


BIOLOGY CHART

ZOOLOGY CHARTS

FROG ANATOMY CHARTS

**Available Sizes
D 1**



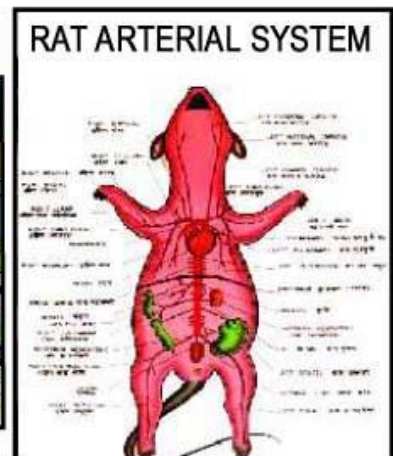
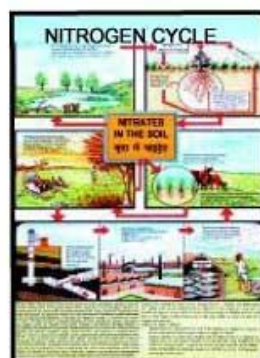
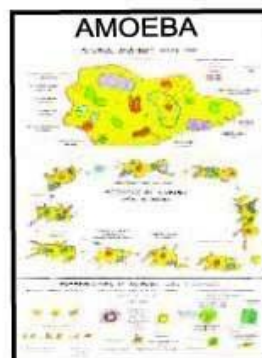
Code	Charts	Code	Charts
35000	Life History of Frog	35015	Appendicular Skeleton
35001	Vertebral Column	35016	Skull
35002	Brain	35017	Blood Circulation
35003	T. S. Ovary & Testis	35018	Reproductive System
35004	Respiratory System	35019	Excretory system
35005	Embryonic Development	35020	Skeleton
35006	Dissection General Anatomy (Alimentary Canal)	35021	Sense Organs
		35022	Cells & Tissues
35007	T. S. Body Region	35023	Skin
35008	Heart	35024	Histology
35009	Nervous System	35025	Central Nervous System
35010	Arteial System	35026	External Features (Buccal Cavity)
35011	Digestive System		
35012	Venous System		

Code	Charts	Code	Charts
35100	Life History of Frog.	35140	Life History of mosquito
35101	Life History of Butterfly	35141	Life History of Housefly
35102	Life History of Silkworm	35142	Life History of Honey bee
35103	Epithelial Tissue	35143	Life History of Earthworm
35104	Life History of Cockroach	35144	Life History of Tapeworm
35105	Life History of Malaria Parasite	35145	Life History of Amoeba
35106	Harmful Insects	35146	Beneficial Insects
35107	Food Habits of Birds	35147	Life History of Liver Fluke
35108	Snakes Chart	35148	Mouth parts of Insects
35109	Carbon Cycle in Nature	35149	Nitrogen Cycle in Nature
35110	Ultrastructure of Plant & Animal	35150	Hookworm
35111	Paramecium	35151	Fish Anatomy (Physiology)
35112	Rabbit Dissection	35152	Hydra
35113	Animal Cell	35153	Animal Kingdom
35114	Gametogenesis in Animals	35154	Fertilization
	Comparative study of Chromosomes in Man, Frog, Maize, Onion, Tobacco. (Variation in Size & Numbers)	35155	R.N.A.
		35156	Food Chain
35115	Various Animal Tissues	35157	Water Cycle 50x75cms
35117	Human BLOOD Cells	35158	D.N.A.
35118	Oxygen Cycle . Size 50 x 75 cms		

**Available Sizes
D 1**

RAT ANATOMY CHARTS

Code	Charts
35200	Rat Anatomy
35201	Rat Digestive System
	Rat External Character (Female Full)
35205	Rat Venous System
35208	Rat Urogenital System (Male & Female)
35210	

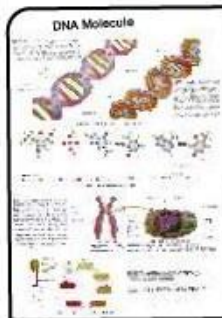
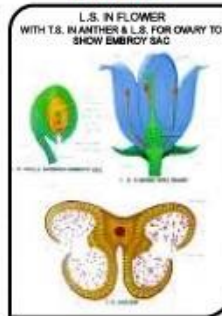


▶ BIOLOGY ▶ CHART

BOTANY CHARTS

Code for size - E 1	Code for size - E 2	Charts
35400	35450	Tissue-Epidermis
35401	35451	Tissue-Collenchyma
35402	35452	Tissue-Paranchyma
35403	35453	Tissue - Scleranchyma (Fibers, Stone cell)
35404	35454	Tissue - Cork
35405	35455	Tissue - Xylem T.S. in simple pit and bordered Pit
35406	35456	Tissue - Phloem
35407	35457	L.S. in root tip and T.S. in its different regions
35408	35458	T.S. in dicot and monocot root.
35409	35459	T.S. in root to show secondary growth
35410	35460	L.S. in root apex and T.S. in different regions.
35411	35461	T.S. in dicot and monocot stem
35412	35462	T.S. in stem to show & growth with a drawing of lenticel
35413	35463	Flower-L.S. in flower
35414	35464	Flower-T.S. in anther
35415	35465	Flower-L.S. for ovary to show embryo sac
35416	35466	Flower-External features of flower
35417	35467	Marchantia
35418	35468	Marchantia - Life Cycle
35419	35469	Adiantum
35420	35470	Adiantum - Life Cycle
35421	35471	Pinus - External feature
35422	35472	Pinus - Male and female strobili
35423	35473	Pinus - L.S. through male strobilus
35424	35474	Pinus - L.S. through female strobilus
35425	35475	Stages of formation of female gametophyte with process Of pollenation fertilization formation of seed and L.S. in seed
35426	35476	T.S. in epidermis stem that show the Lenticel
35427	35477	Types of red algae (polysiphonia)
35428	35478	Seed of Vicia Faba opened with its different parts
35429	35479	Stages of germinating of the wheat seed
35430	35480	Stages of germinating of the cast or bean seed (Ricinus commanis)
35431	35481	Animal & Plant cell
35432	35482	Typical Plant Cell
35433	35483	Plant Mitosis
35434	35484	Classification of Plants
35435	35485	DNA Molecule

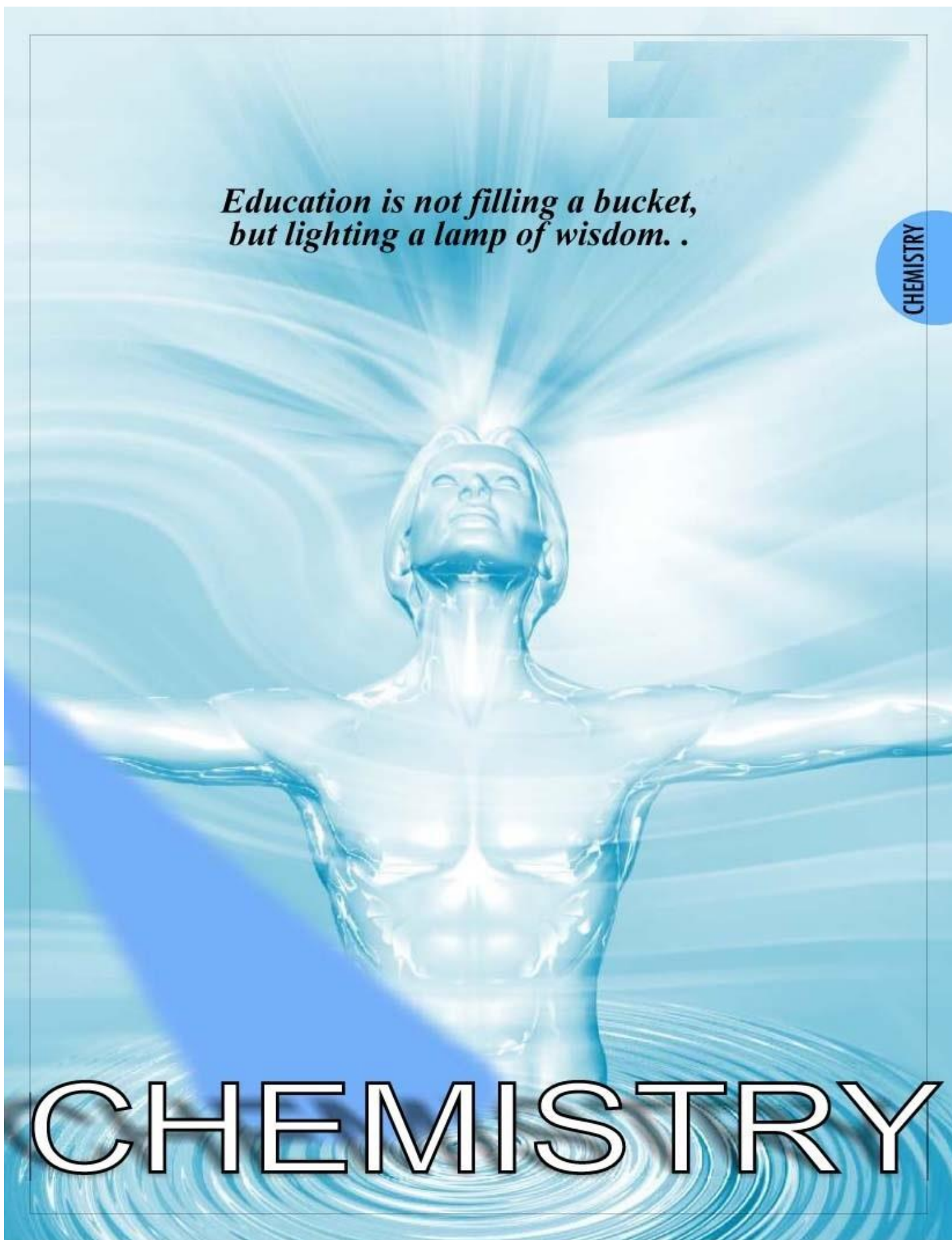
Available Sizes E 1, E 2



*Education is not filling a bucket,
but lighting a lamp of wisdom. .*

CHEMISTRY

CHEMISTRY



CHEMISTRY ► PLASTIC LABWARE



BEAKERS

Beakers, moulded in Polypropylene, have excellent clarity and very good chemical resistance. These autoclavable Beakers have prominently raised graduations on the outer surface. Pouring a solution becomes very convenient because of its tapered spout.

CAPACITY	50 ml.	100 ml.	150 ml.	250 ml.
CODE	20500	20501	20502	20503

CAPACITY	500 ml.	1000 ml.	2000 ml.
CODE	20504	20505	20505



BURETTE

This Burette has a transparent Polymethyl Methacrylate and a leakproof stopcock fitted with a self lubricating PTFE plug. Each Burette is individually calibrated to give maximum accuracy. Acrylic body 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.

CAPACITY	25 ml	50 ml
CODE	20520	20521

BURETTE CLAMP

FISHER TYPE

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 Burette and prevents it from slipping. Two tapered wedges are provided to ensure firm grip on rods having dia 3/8" or 1/2".

BURETTE CLAMP	Single	Double
CODE	20530	20531



BOTTLES DROPPING

Blown in Low Density Polyethylene, Dropping Bottles dispense small uniform drops of liquids when pressed lightly.

CAPACITY	60 ml.	125 ml.
CODE	20540	20541



CHEMISTRY ► PLASTIC LABWARE

BOTTLES REAGENT

(NARROW MOUTH)

These Narrow Mouth Reagent Bottles are available in Polypropylene as well as Polyethylene. The PP bottles are rigid, translucent and have excellent contact 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.

CAPACITY	60 ml.	125 ml.	250 ml.	500 ml.	1000 ml.
CODE	20550	20551	20552	20553	20554



(WIDE MOUTH)

These Wide Mouth Reagent Bottles are available in Polypropylene as well as Polyethylene. The PP bottles are rigid, translucent and have excellent contact 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.

CAPACITY	60 ml.	125 ml.	250 ml.	500 ml.	1000 ml.
CODE	20560	20561	20562	20563	20564



WASH BOTTLES

Wash Bottles are made of Low Density Polyethylene which gives these bottles a translucent & unbreakable character. 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	125 ml.	250 ml.	500 ml.	1000 ml.
CODE	20570	20571	20572	20573



(New Type)

These Bottles are also made of Low Density Polyethylene and are therefore translucent & unbreakable. The distinguishing feature that these bottles contain 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	250 ml.	500 ml.	1000 ml.
CODE	20580	20581	20582



CHEMISTRY ► PLASTIC LABWARE



ASPIRATOR BOTTLES

Aspirator Bottles are made of Polypropylene and are therefore much lighter than glass. These are autoclavable, durable & dependable. The leakproof spigot screwed to the bottle body requires only a half turn to open or close. These bottles are used for storing or dispensing distilled water & other laboratory solutions. Threads should be totally disengaged before autoclaving.

CAPACITY	5 ltr.	10 ltr	20 ltr
CODE	20590	20591	20592



Rigid polythene, medium wall , screw capped with stopcock.

Capacity in Litres	2.5	5	10	20
Code	20600	20601	20602	20603



SYPHON

These self priming Syphons made of Low Density Polyethylene can be used for pouring liquids from large containers to small ones without actually lifting them. Insert the open end of the tube in the liquid, close the stop cock and pump the bulb. As soon as the liquid enters the bulb, flow is automatically regulated. Stop pumping further. Liquids can now be dispensed by opening the stopcock.

PARTICULARS	CODE
6 mm	20610



SYPHON AUTOMATIC

Strong bellows fine leakproof stopcock to dispense liquid, avoids spillage and burning problem. Acid- alkali proof.

Size	Medium	Large
Code	20605	20606



FLASK CONICAL

Made of Polypropylene, these cone shaped flasks are rigid, translucent & autoclavable. The screw cap keeps the contents of the flask contamination free and makes the flask leakproof. Threads should be disengaged before autoclaving.

CAPACITY	100 ml	250 ml	500 ml
CODE	20620	20621	20622

CHEMISTRY ► PLASTIC LABWARE

FLASK VOLUMETRIC

Volumetric Flasks, blown in Polypropylene, are strong, unbreakable and have good contact clarity. These autoclavable flasks are provided with screw caps to prevent leakage.

CAPACITY	25 ml	50 ml.	100 ml.	250 ml.	500 ml.	1000 ml.
CODE	20630	20631	20632	20633	20634	20635



FLASK STAND

Code No. : 20650

Moulded in Polypropylene, this Flask Stand gives a stair-like top view. Every step provides excellent support to the round bottom flask at every point of Contact, This Flask Stand can hold round bottom Flasks up to 10 Ltr, capacity, This Stackable Flask Stand can also be steam autoclaved.



FUNNELS

These funnels have smooth walls, 60° cone angle and external ribs to prevent air lock. Moulded in Polypropylene, these clear funnels can also be steam autoclaved. Available in long/short form.

CAPACITY	50 mm.	62 mm.	75 mm.	100 mm.	150 mm.
LONG STEM	20660	20661	20662	20663	20664
SHORT STEM	20670	20671	20672	20673	20674



BUCHNER FUNNEL

Moulded in Polypropylene, these two piece funnels are light weight, easy to clean & autoclavable. The top portion can be snap fitted with the lower one forming a vacuum seal which does not require greasing. The base of the top portion has a perforated filter plate.

SIZE	70 mm	110 mm
CODE	20680	20681



CHEMISTRY ► PLASTIC LABWARE



SEPERATORY FUNNEL

Seperatory Funnel is made of Polypropylene, giving it excellent contact clarity and strength. This pear shaped, autoclavable separating funnel has a leakproof threaded screw cap. The Polypropylene stopcock, fitted with a self lubricating PTFE plug, is push fitted to the stem of the seperatory funnel.

CAPACITY	100 ml	250 ml.	500 ml.
CODE	20700	20701	20702



SEPERATORY FUNNEL HOLDER

Code No. : 20710

This non-corrosive Seperatory Funnel Holder, moulded in Polypropylene, has a front opening which provides clear view of the solution and allows unobstructed placement of separating funnels. Two tapered wedges are provided to ensure firm grip on rods having dia 1/2" or 3/8".



FUNNEL HOLDER

Code No. : 20720

Made of Polypropylene, these corrosion free Funnel Holders can hold funnels with dia 3" to 6". The extra plate provided can be placed to hold funnels bearing dia 1" to 3", Two tapered wedges are provided to ensure firm grip on Rods having dia 1/2" or 3/8". Made of Polypropylene, these corrosion free Funnel Holders can hold funnels with dia 3" to 6". The extra plate provided can be placed to hold funnels bearing dia 1" to 3", Two tapered wedges are provided to ensure firm grip on Rods having dia 1/2" or 3/8".



DESICCATOR (PLAIN)

Plain Desiccators are physically the same as Vaccum Desiccator. Only difference is the absence of stop cock. Grease should be applied on the flanges to make it air tight.
Material : Polypropylene/Polycarbonate

SIZE	150 mm	200 mm	250 mm
CODE	20730	20731	20732

CHEMISTRY ► PLASTIC LABWARE

DESICCATOR (VACCUM)

Desiccators are made of Polypropylene and Polycarbonate. These autoclavable vacuum desiccators can hold vacuum upto 740 mm of Hg for 24 hrs. without any greasing.

The top dome, moulded in rigid and transparent Polycarbonate, gives a crystal clear view of the desiccant placed inside. The Knurled knob on the top provides easy handling of the dome. The lower part is made of Polypropylene. An internal groove is provided on the flange to hold a silicon rubber a-Ring.

The Polypropylene stopcock is fitted with a self lubricating PTFE plug. This plug works three way i.e. vacuum creation, shutting off & vacuum releasing.

Each Desiccator is provided with a thick perforated Polypropylene disc with a big hole in the centre for easy lifting. The tiny holes in the disc provide air troughs & support to the dishes. However porcelain discs are advisable in case of incandescent crucibles.



SIZE	150 mm.	200 mm.	250 mm.
CODE	20740	20741	20742

MEASURING CYLINDERS

Measuring Cylinders, moulded in Polypropylene, are single piece cylinders. These autoclavable cylinders have raised prominent graduations for easy reading and have excellent contact clarity. The broad base provides good stability.

CAPACITY	10 ml.	25 ml.	50 ml.	100 ml.
CODE	20750	20751	20752	20753

CAPACITY	250 ml.	500 ml.	1000 ml.	2000 ml.
CODE	20754	20755	20756	20757



CONICAL MEASURES

These Conical Measures are very good for measuring small quantities of reagents. Moulded in Polypropylene, these autoclavable Measures have a hexagonal base which provides it excellent stability. The Measures are clear, have good chemical resistance and have raised graduations for easy reading.

CAPACITY	12 ml.	25 ml.	50 ml.	125 ml.	200 ml.
CODE	20770	20771	20772	20773	20774



MEASURING JUGS

These handy Jugs, moulded in Polypropylene, are clear, autoclavable and have good chemical resistance. These jugs are provided with a handle for easy & convenient lifting and have raised graduations for easy reading.

CAPACITY	250 ml.	500 ml.	1000 ml.	2000 ml.
CODE	20780	20781	20782	20783



CHEMISTRY ► PLASTIC LABWARE



STIRRER

Code No. : 20790

Made of polypropylene, these Stirrers are very useful for stirring different solutions in the laboratory. These Stirrers prove to be tough and long lasting.

PARTICULARS	
Ø-10 mm.	x h-250 mm.



PETRI DISH

These Petri Dishes moulded in Polypropylene are clear & unbreakable. The moulding material being Polypropylene, these can be repeatedly autoclaved. The ridges on the inner side of the cap prevent the base from sticking to the cap.

SIZE	50 mm	75 mm	100 mm	125 mm	150 mm
CODE	20800	20801	20802	20803	20804



PETRI DISH DISPOSABLE

These transparent, ready to use, disposable Petri Dishes are made of optically clear, non-toxic, Polystyrene. These Petri Dishes packed individually in polyethylene bags are sterilized by radiation/E. T. O.

SIZE	90 mm, E.T.O. Stz.	90 mm, Radiation Stz.	60 mm, Radiation Stz.	35 mm, Radiation Stz.
CODE	20810	20811	20812	20813



CENTRIFUGE TUBE

CONICAL BOTTOM

Centrifuge tubes with conical bottom are available in two sizes i.e. 15 ml. & 50 ml. Moulded in Polypropylene, these tubes are clear, strong & safe. These autoclavable tubes are provided with printed graduations on the outer surface. The built in seal ring in the cap makes these tubes absolutely leakproof. These tubes can withstand forces upto 7500xG & 12000xG for 15 ml. & 50 ml. tubes respectively. These tubes are available sterilized as well as non-sterilized.

SIZE	15 ml	50 ml	15 ml Sterile	50 ml Sterile
CODE	20820	20821	20822	20823



ROUND BOTTOM

Centrifuge Tubes with round bottom are moulded in Polypropylene & Polycarbonate. These tubes have excellent clarity and are strong enough to be used upto 50,000xG. These tubes can be autoclaved, however, repeated autoclaving in PC tubes reduces their mechanical strength.

16 ml Centrifuge tube		50 ml Centrifuge tube	
PP.	PC.	PP.	PC.
20830	20832	20831	20833
Cap for 16 ml tube		Cap for 50 ml tube	
20834		20835	

CHEMISTRY ► PLASTIC LABWARE

CENTRIFUGE TUBES

OAK RIDGE

Oak Ridge Centrifuge Tubes, made of Polypropylene, have excellent contact clarity and can be used upto 50,000xG. The screw cap is fitted with silicon O-Ring making it totally leakproof. These tubes should not be used below 4°C.

SIZE	30 ml.	50 ml.
CODE	20840	20841



MICRO

These Micro Centrifuge Tubes, moulded in Polypropylene, have built in plugs which snap fit and make these tubes leakproof. These tubes can withstand high forces of an ultra centrifuge and can be used for transmitting samples for micro analysis.

SIZE	0.5 ml.	1.5 ml.
CODE	20850	20851



STOP COCKS

These polypropylene Stop Cocks are fitted with a PTFE plug & have serrated tubulations that accept from 6 mm to 10 mm tubing. These Stop Cocks are absolutely leakproof and are available-in two different options

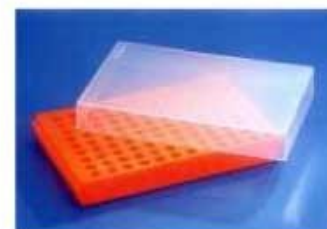
STOP COCK	2 Way	3 Way
CODE	20860	20861



MCT TWIN RACK

Code No. : 20870

This polypropylene Twin Purpose Rack for both 0.5 ml. & 1.5 ml. micro centrifuge tubes. Each side has 108 holes for 0.5 & 1.5 ml. MCT's, respectively. The transparent top provides an excellent view as well as a protection cover for the tubes stored. Each face of the base has a unique alpha-numeric index for easy identification of the tube.



PCR TUBE RACK

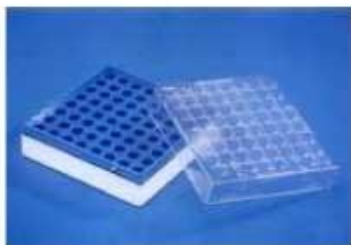
This rack, as the name suggests, is used for keeping PCR Tubes. Top & base of this rack are made of tough & transparent polycarbonate while the middle portion is made of polypropylene. The tube holding spaces are uniformly placed so as to facilitate the use of multipipettes. A no. of racks can be stacked together to save shelf space.

Rack for 96 PCR Tubes of 0.2 ml

Code No. : 20880



CHEMISTRY ► PLASTIC LABWARE



MCT BOX

MCT Boxes are moulded in polycarbonate and are therefore strong as well as autoclavable. One size can hold 64 MCTs of 1.5 ml. & the other can hold 100 MCTs of 0.5 ml.. These boxes are designed to work at temperatures ranging from -190°C to $+121^{\circ}\text{C}$. The transparent cover provides a good view of the contents inside & is numbered for better inventory control.

SIZE	100 MCTs of 0.5 ml.	64 MCTs of 0.5 ml.
CODE	20890	20891



SAMPLE CONTAINER (SCREW TYPE)

Sample Containers are made of Polypropylene. These thin walled, graduated, disposable containers are easily screw capped with less than $1/4$ " of a rotation. As one screw caps the container, the top of it sets in a domed ring in the cap making it completely leakproof This is perhaps the ideal most option available for carrying samples from one place to another safe & sound.

SIZE	100 ml
CODE	20900



STORAGE VIALS

These polypropylene vials add to the existing range of storage vials. Available in 5 ml. & 10 ml. capacities, these vials have polypropylene cap with built in seal ring making it a leakproof vial. Just like others storage vials these vials are also used for the storage of biological material, animal & human cells etc.

SIZE	10 ml.	5 ml.
CODE	20910	20911



SCINTILLATION VIAL

These unbreakable vials, moulded in Polyethylene, are fitted with leakproof screw caps. These vials can be used with standard counting equipment for liquid scintillation system and are excellent for low activity count.

SIZE	8 ml.	20 ml.
CODE	20920	20921



RACK FOR SCINTILLATION VIAL

These Racks for Scintillation Vials, moulded in Polypropylene, are autoclavable & corrosion resistant. There is an individual rack for both 8 ml. & 20 ml. vials. These rugged & stable racks can hold scintillation vials for convenient storage, handling & sample preparations.

PARTICULARS	90 vials of 8 ml.	50 vials of 20 ml.
CODE	20930	20931

CHEMISTRY ► PLASTIC LABWARE

RIA VIAL

These Polypropylene/Polystyrene tubes are generally used in RIA, Coagulation & Bacteriology. The Polypropylene tubes are clear and can withstand 3000 RCF during Centrifugation while the transparent Polystyrene tubes can withstand 1400 RCF. The PP tubes can accept common acids, alkalis & solvents at room temperature while the PS tubes can accept mild bases, weak acids but not organic solvents.

SIZE	12 x 75 mm /PS	12 x 75 mm /PP	Cap for 12 mm RIA Tube
CODE	20940	20941	20942



TEST TUBE CAP

This transparent polypropylene cap for Test Tubes proves to be an excellent protection to the contents to the tubes. The grooves inside the cap tighten the fitting on the tube while the outer grooves would hold identification labels. The built in seal ring would set in the tube making the combination a leakproof one.

PARTICULARS	Cap for Test Tube Dia. 25 mm
CODE	20950



STORAGE VIAL

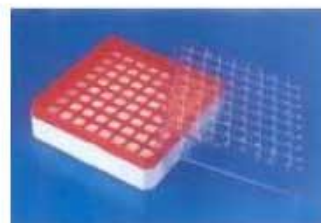
As the name suggests, these Polypropylene/Polyethylene vials are commonly used for storage of biological material, human & animal cells at temperature as low as -190°C . The Cap is provided with a built in seal ring making the vial leakproof. The base of the vial has longitudinal grooves which give it a non-twisting character when placed in a vial.

SIZE	1.0 ml.	2.0 ml.	5.0 ml.
CODE	20960	20961	20962



CRYO BOX

Cryo Boxes are moulded in Polycarbonate making it extra strong and autoclavable. These can accommodate Cryo Vials of up to 4.5 ml. capacity and are designed to be used at temperatures ranging from -190°C to $+121^{\circ}\text{C}$. The transparent cover of the box gives a good view of the contents inside and is numbered for better inventory control.



PARTICULARS	81 Places for 1 ml. or 1.8 ml Cryo Vials	81 Places for 4.5 ml. Cryo Vials	100 Places for 1 ml. Or 1.8 ml. Cryo Vials
CODE	20970	20971	20972

CHEMISTRY ► PLASTIC LABWARE

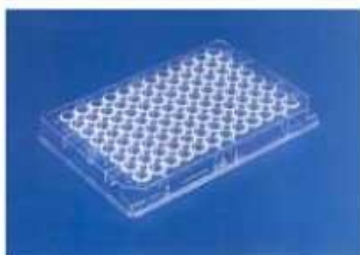
MICRO TIP BOX



These unique boxes are moulded in Polypropylene and are therefore autoclavable. The Box itself is clear in providing an excellent view of the tips inside while a table like structure is provided inside to hold the tips. The tip holding spaces are uniformly placed to facilitate the use of multi channel pipettes. The cover is joined to the base through ball catcher hinges and provides excellent protection to the tips.

MICRO TIP BOX	For 96 Micro Tips of 2-200 µl	For 100 Micro Tips of 200-1000µl
CODE	20980	20981

IMMUNOLOGY PLATES



ELISA-ASSAY plates are made of optically clear, non-toxic Polystyrene. These plates with 96 U Bottom or flat bottom wells bear alpha-numeric index. Uniform placement of all the wells facilitate use of multi channel pipettes. These plates packed individually are available non-sterile as well as radiation sterilized.

	STERILE		NON STERILE	
	Elisa Plate	Assay Plate	Elisa Plate	Assay Plate
Flat Bottom	20994	20996	20990	20992
U Bottom	20995	20997	20991	20993

CRYO VIAL



Cryo vials are normally used for storage of Biological material, human & animal cells at temperature as low as -190°C . These Polypropylene / Polyethylene sterilized tubes are provided with white, prominent graduations and a long marking area for sample identification. The cap of these vials provided with a seal ring inside to make it completely leakproof. The longitudinal grooves in the base give a non-twisting feature to these vials when placed in a cryo rack.

CAPACITY	1.0 ml.	1.8 ml.	4.5 ml.
CODE	21000	21001	21002

CRYO CODERS

Code No. : 21010

These Polypropylene Coders available in different colours can easily fit into the cap of cryo vials for colour identification of different samples.



CHEMISTRY ► PLASTIC LABWARE

CRYO RACK

Code No. :21020

Cryo Rack is moulded in Polycarbonate making it tough, durable & autoclavable. This handy rack can hold 50 vials at a time. The unique feature of this rack is that vials can be unscrewed without actually picking them up as the vial will lock in very well and hence will not twist. This rack is provided with four anti skid rubbers & each well is identified with an alpha-numeric index.



SLIDE BOX

These Polystyrene Slide Boxes are durable, compact & provide utmost protection to 1" x3" slides. Heavy walls will not warp, splinter or crack. Boxes are unaffected by humidity and are thoroughly insect proof. Base of the slide Box has a numbered index for easy slide Identification. Slide box with Aluminium and wooden groves are also available which are mentioned in Biology pg no. 127

SLIDE BOX	25 Slides	50 Slides	100 Slides
CODE	21030	21031	21032



FLOAT RACK

This Float Rack moulded in Polypropylene is quite compact, autoclavable and can hold 16 micro centrifuge tubes for incubation in water baths. Easy to load, these are essential in microbiology & immunology labs. The surface of the rack has raised alpha-numeric index for easy identification and has a central rod handle for convenient lifting.

CAPACITY	CODE
16 MCT's of 1.5 ml	21040



SLIDE MAILER

Slide Mailers present the best option to carry prepared slides from one place to another. Moulded in Polypropylene, these Slide Mailers are available in two sizes i.e. 2 slides & 5 slides.

NO.OF SLIDES	2 Slides	5 Slides
CODE	21050	21051



STORAGE BOXES

These Storage Boxes, made of polypropylene, prove to be an excellent option for storage of different powdered reagents & other material in the laboratory. Square shape of these boxes help in saving shelf space. Available in two different sizes, these boxes have polypropylene caps, are autoclavable, provide good chemical resistance & heavy duty service.

CAPACITY	500 ml.	1000 ml.
CODE	21060	21061



CHEMISTRY ► PLASTIC LABWARE



MAGENTA BOX

Code No. : 21070

Magenta Box is very often used in tissue culture & agricultural research experiments. Main body of this box is made of tough & transparent Polycarbonate which provides excellent view of the contents inside while the cover is made of Polypropylene. This autoclavable box is square in shape giving itself a space saving feature.



SIMPLE CELL POT

Code No. :21080

Simple Cell Pot, as the name suggests, is used for making Simple Cells & Volta meters etc. Moulded in Polypropylene, this Pot has very good contact clarity and excellent chemical resistance. Being in Polypropylene, this Pot is much durable than the one used conventionally.



LECLANCHE CELL POT

Code No. :21090

Blown in Polypropylene, this Pot is used for making Leclanche Cell. This Pot too has very good contact clarity & excellent chemical resistance.



SAMPLE CONTAINER

(PRESS & FIT TYPE)

Made of polypropylene, these disposable Containers are used for collecting samples of sputum or urine etc. Graduated on the outer surface, these containers have cap that work in a press & fit manner & make these containers leakproof. These disposable containers are E. T.O. sterilized.

CAPACITY	50 ml
CODE	21100



PNEUMATIC TROUGH

These Troughs, made of polypropylene, are autoclavable and are available in different sizes. These can be used for a wide range of purposes including storage, sterilizing & drying labware etc.

SIZES	Ø - 180 x h-60 mm	Ø - 200 x h-100 mm	Ø - 250 x h-100 mm
CODE	21110	21111	21112

CHEMISTRY

CHEMISTRY ► PLASTIC LABWARE

PLANTATION POTS

Plantation Pots, moulded in polypropylene, are available in three different sizes. These pots have a downward extended rim which provide convenient lifting even if the pot is filled. The bottom of the pot is provided with holes for drain purpose.

SIZE	100 mm.	150 mm.	200 mm.
CODE	21120	21121	21122



LABORATORY TRAY

Code No. : 21130

Needless to say, Laboratory Tray moulded in polypropylene 450 x 350 x 75 mm is a multipurpose tray that can be used for sterilizing, drying glassware, porcelainware & other laboratory instruments. These steam autoclavable trays have tapered walls which prove good for nesting.



TEST TUBE BASKETS

Test Tube Baskets are made of Polypropylene. These autoclavable, unbreakable and non-corrosive Baskets are ideal for rinsing & draining glassware. These are also useful for storage of test tubes or culture tubes during sterilization or incubation.

DIMENSIONS	140 x 120 x 110 mm	160 x 160 x 160 mm	400 x 400 x 100 mm
CODE	21150	21151	21152



COPLIN JAR

Code No. : 21160

Coplin Jar made of Polypropylene can hold 10 slides of the size 1 "x3" back to back. The interior of the Coplin Jar is grooved in a way to: hold slides in erect position. Domed & shallow thread screw cap provides protection to the slides.



CHEMISTRY ► PLASTIC LABWARE

TEST TUBE STAND

TEST TUBE STAND WIRE PATTERN



An economical substitute for wire racks, these submersible, autoclavable racks which are stackable when empty. These are available in different colours and are made of a special blend of Polypropylene that makes it sink in a water bath and maintain their stability even in agitated water. These space saving racks can easily be disassembled for cleaning purposes. The base is in the form of a grid with square openings and has fold up sides and end bars that lock into rack tops.

SIZE	13 mm	16 mm	20 mm	25 mm
No. of Tubes	90	60	40	24
CODE	21140	21141	21142	21143



TEST TUBE STAND (3 TIER)

OPAQUE PLATES

These Polypropylene ingenious racks with a 3-tier design provide clear view of the tube contents & convenient insertion & removal of tubes. The PC rack has opaque upper & middle plates. These autoclavable Racks can withstand sub-freezing temperatures.

SIZE	13 mm		15 mm		16 mm		18 mm		20 mm		25 mm		32 mm	
No. of holes	31 holes	21170	18 holes	21175	31 holes	21178	12 holes	21180	20 holes	21182	12 holes	21185	12 holes	21189
	18 holes	21171	x	x	62 holes	21179	x	x	40 holes	21183	18 holes	21186	x	x
	62 holes	21172	x	x	x	x	x	x	x	x	36 holes	21187	x	x



TRANSPARENT PLATES

These Polypropylene ingenious racks with a 3-tier design provide clear view of the tube contents & convenient insertion & removal of tubes. The PC rack has transparent upper & middle plates where as in PP racks, every part is coloured & opaque. These autoclavable Racks can withstand sub-freezing temperatures.

SIZE	13 mm		16 mm		20 mm		25 mm		32 mm	
No. of holes	31 holes	21190	31 holes	21193	20 holes	21197	12 holes	21201	12 holes	21207
	62 holes	21191	62 holes	21194	40 holes	21198	24 holes	21202	x	x
	x	x	x	x	x	x	18 holes	21203	x	x
	x	x	x	x	x	x	36 holes	21204	x	x

TEST TUBE STAND

This autoclavable Stand made of Polypropylene is perhaps the most commonly used Test Tube Stand in various laboratories. For better visibility, this 6 place rack is end supported by 2 columns. The top plate has 2 holes for holding 25 mm dia test tubes, four holes to hold 16 mm dia tubes where as the base has corresponding hemispherical wells. It also has six vertical pins for drying tubes.

Another option available in this section is a test tube stand in which all the holes in the top plates can hold 25 mm dia tubes.

SIZE OF TEST TUBE	16 mm. & 25 mm. Ø Tubes	25 mm. Ø Tubes
CODE	21210	21211



ROUND

Code No. : 21215

A handy, little, space saver, this circular twelve place Polypropylene Test Tube Stand has four 25 mm dia holes & eight 19 mm dia holes in its top plate. The base has matching hemispherical wells & 16 vertical pins for drying tubes surrounded by a trough to catch drippings. This autoclavable rack can be easily disassembled for cleaning purpose.



RACK FOR MICRO CENTRIFUGE TUBE

Moulded in Polycarbonate, this autoclavable rack is made for holding twenty four 1.5 ml. micro centrifuge tubes. This rack has a unique stacking feature which prevents movement in any direction. The holes are numbered & lettered for easy identification,

NO.OF TUBES	24 Tubes	48 Tubes
CODE	21220	21221



PIPETTE PUMP

Presents a fast release pipetting device for precise pipetting & zip quick emptying. The Knurled thumbwheel 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 pipettes of standard sizes. It resists acids & alkalies and can be easily disassembled for thorough cleaning.

Material : Acrylonitrile Butadiene Styrene

CAPACITY	2 ml.	10 ml.	25 ml.
CODE	21230	21231	21232



CHEMISTRY ► PLASTIC LABWARE



PIPETTE STAND

VERTICAL

Code No. : 21240

This is a stable, non-corrosive, detachable Stand which can hold 28 pipettes with maximum dia 14 mm. The heavy base measures 225 mm 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.



94 PIPETTES-ROTARY

Code No. : 21241

Moulded in Polypropylene, this unique Stand holds a maximum of 94 pipettes and rotates on a central vertical axis for convenient selection of any particular pipette. The lower rotating disc has four concentric troughs with tapered sides and open bottoms which cradle the pipette tips protectively and permit water drops to run off. The upper disc has a grid pattern concentric with the bottom disc and keeps the pipettes vertical. Liquids draining off the pipettes are retained on the top of the stationary base by the outer ring. This stand can be easily disassembled & reassembled.



HORIZONTAL

Code No. : 21242

This detachable Stand can hold 12 pipettes, 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.



RACK FOR PETRI DISHES

Code No. : 21250

This Rack is a clear acrylic construction with white Polycarbonate Posts. It has a capacity to hold 60 petri dishes of 90 mm size. This rack is very useful during inoculation, incubation & Storage. Visibility from all sides enables the culture to be seen & checked during incubation.

CHEMISTRY

CHEMISTRY ► PLASTIC LABWARE

RETORT STAND

These Polystyrene/Polypropylene non-corrosive, moulded Retort Stands provide excellent replacement for the metal ones. Even the metallic rod has a polypropylene covering making it non-corrosive. The rod measuring 12.5 mm x 750 mm can be screwed into the heavy base giving way to a perfectly stable Retort Stand.



DIMENSION	225 x 150 mm - Side Hole	300 x 200 mm - Centre Hole	300 x 200 mm - Side Hole
CODE	21260	21261	21262

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.



SIZE	150 mm	200 mm
CODE	21270	21271

SAFETY GOGGLES

Code No. : 21280

One piece plastic, protects eyes. With adjustable Elastic band..



CONNECTORS

Moulded in Polyethylene, these Connectors are basically pipe-like structures in T&Y shapes with ringed edges. These are used for connecting tubes to each other. The ringed edges prevent leakage & slippage.

CONNECTORS	T - Connector	Y - Connector
CODE	21290	21291



CHEMISTRY ► GLASS LAB WARES

BURETTE

WITH MOHR CLIP

This Burette is made of neutral glass with Mohr clip, glass jet and rubber tubing. Each Burette is individually calibrated to give maximum accuracy. School quality.

CAPACITY	25 x 0.1 ml	50 x 0.1 ml
CODE	21500	21501

WITH STOPCOCKS

This Burette is made of borosilicate glass with single bore Rotaflo stopcock. Each Burette is individually calibrated to give maximum accuracy.

Capacity : 50 x 0.1 ml Code : 21505

BEAKERS

Beakers, moulded in borosilicate glass, have excellent clarity and very good chemical resistance. These Beakers have prominently raised graduations on the outer surface. Pouring a solution becomes very convenient because of its tapered spout.

CAPACITY	50 ml.	100 ml.	250 ml.	500 ml.	1000 ml.	2000 ml.
CODE	21510	21511	21512	21513	21514	21515

BOTTLES

DROPPING

T.K. Pattern, clear glass bottle, with ground glass grip stopper and spout.

CAPACITY	15 ml	30 ml	60 ml	125 ml
CODE	21530	21531	21532	21533

BIJOU

Code No. : 21540

McCARTNEY

Code No. : 21545

Media vaccine, narrow mouth with aluminium screw cap and rubber liner. Capacity 28 ml.



CHEMISTRY

CHEMISTRY ► GLASS LAB WARES

BOTTLES REAGENT

Glass, wide neck with flat glass dust proof stopper.

CAPACITY	60 ml.	125 ml.	250 ml.	500 ml.	1000 ml.
CODE	21550	21551	21552	21553	21554



GAS WASH BOTTLE WOUUFF

Made of Glass with 2 necks

Capacity	250 ml	500 ml
Code	21560	21561



GAS JAR CYLINDRICAL

Height in cm	15	20	25	30	20	25	30	15	20	25
Dia in cm	5	5	5	5	7.5	7.5	7.5	10	10	10
Code	21570	21571	21572	21573	21574	21575	21576	21577	21578	21579



PETRI DISH

These Petri Dishes are clear & made of glass. The ridges on the inner side of the cap prevent the base from sticking to the cap. Also available in Polypropylene as in page 81.

SIZE	50 ml.	75 ml.	100 ml.	125 ml.	150 ml.
CODE	21580	21581	21582	21583	21584



PIPETTES

Made of borosilicate glass, with permanent stained graduation. colour coded. Zero at top.

Capacity in ml	1	2	5	10	25
Code	21590	21591	21592	21593	21594

Also available in bulb form with single graduation on upper stem ,permanent graduation.

Capacity in ml	2	5	10	15	20	25	50	100
Code	21600	21601	21602	21603	21604	21605	21606	21607



CHEMISTRY ► GLASS LAB WARES



FLASK BOILING

Long neck , flat bottom made of borosilicate glass .
Long neck , round bottom made of borosilicate glass .
Also available in soda glass.

Sizes	Round bottom		Flat bottom	
	Borosilicate glass	Soda glass	Borosilicate glass	Soda glass
100 ml	21610	21615	21620	21625
150 ml	21611	21616	21621	21626
250 ml	21612	21617	21622	21627
500 ml	21613	21618	21623	21628
1000 ml	21614	21619	21624	21629



FLASK CONICAL

Erlenmeyer, wide mouth, made of borosilicate glass .
Conical flask with graduation is also available

Sizes	100 ml	150 ml	250 ml	500 ml	1000 ml
With graduation	21630	21631	21632	21633	21634
Without graduation	21640	21641	21642	21643	21644



VOLUMETRIC FLASK

Volumetric Flasks, are made of borosilicate glass.
Available in following sizes

CAPACITY	25 ml	50 ml	100 ml	250 ml	500 ml	1000 ml
CODE	20630	20631	20632	20633	20634	20635



THISTLE FUNNEL

Stout walled ,made of neutral glass and in borosilicate glass.

Stem Length	200 mm	250 mm	300 mm
Borosilicate glass	21670	21671	21672
Neutral glass	21675	21676	21677



MEASURING CYLINDERS

Measuring Cylinders are single piece glass cylinders.
These autoclavable cylinders have raised prominent graduations for easy reading and have excellent contact clarity. The broad base provides good stability.

CAPACITY	10 ml	25 ml	50 ml	100 ml
CODE	21680	21681	21682	21683

CAPACITY	250 ml	500 ml	1000 ml	2000 ml
CODE	21684	21685	21686	21687

CHEMISTRY ► GLASS LAB WARES

TEST TUBE

Made of glass medium walled with rim for use in school, colleges, universities, research & industrial laboratories. Wall thickness is 1 mm & comes in pack of 100 pieces.



Length x O.D.mm	75 x 12	100 x 12	100 x 16	125 x 16	150 x 16	150 x 18	150 x 24
Code	21700	21701	21702	21703	21704	21705	21706

ABSORPTION TUBES

STRAIGHT

Made from glass with one Bulb.

Absorption Tube Straight		
Length	Dia	Code
100mm	12mm	21730
150mm	20mm	21731
200mm	25mm	21732



U FORM

Made from Glass with thick and strong walls.

Absorption Tube U-form		
Length	Dia	Code
100mm	12mm	21737
125 mm	15mm	21738
200mm	20mm	21739



U FORM STOPPERED

Made from Corning glass with side tubes. Fitted with Key Stoppers which, when rotated, open or close the side tubes.

Absorption Tube U-form stoppered		
Length	Dia	Code
100mm	12mm	21743
125 mm	15mm	21744
200mm	20mm	21745



WITH SIDE TUBE

Made from Glass with thick and strong walls.

Absorption Tube with side tube		
Length	Dia	Code
100mm	12mm	21746
125 mm	15mm	21747
200mm	20mm	21748



ABSORPTION TOWER

Code No. : 21750

Made of soda glass with capacity of 250 ml.

CHEMISTRY ► GLASS LAB WARES



DISTILLING TUBE

Made of glass specially designed for the use in Laboratories . Available in One Bulb, Two Bulb and Three Bulb forms with outer diameter 17 mm and Bulb diameter 40 mm as shown in the table. Photo not shown.

DISTILLING TUBE	TOTAL LENGTH	OUTER Dia.	BULB Dia.	CODE
One Bulb	250 mm	17 mm	40 mm	21760
Two Bulb	300 mm	17 mm	40 mm	21761
Three Bulb	300 mm	17 mm	40 mm	21762



CONDENSERS

LIEBIG

Made from borosilicate glass with inner tube integrated with the body having a narrow jacket for efficient cooling

LENGTH OF JACKET X TOTAL LENGTH (cm)	30 x 48	40 x 59	50 x 71
CODE	21770	21771	21772



ALLIHN

Made from borosilicate glass.

LENGTH OF JACKET X TOTAL LENGTH (cm)	30 x 48	40 x 59	50 x 71
CODE	21775	21776	21777



GRAHAM

Made from borosilicate glass, specially designed for high degree of turbulence & permits the use of thin wall tubing without sacrificing strength.

LENGTH OF JACKET X TOTAL LENGTH (cm)	30 x 48	40 x 59	50 x 71
CODE	21780	21781	21782

CHEMISTRY ► CORK & BUNG

WOODEN CORK

SIZE NO.	TOP DIA IN mm	BOTTOM DIA IN mm	HEIGHT IN mm	CODE
000	6	4	13	21900
00	8	5	13	21901
0	10	7	13	21902
1	11	8	16	21903
2	13	9	18	21904
3	14	10	19	21905
4	16	11	21	21906
5	17	13	22	21907
6	19	14	24	21908
7	21	15	25	21909
8	22	16	27	21910
9	23	18	28	21911
10	25	19	31	21912
11	27	21	31	21913
12	28	22	31	21914
13	30	24	31	21915
14	31	25	31	21916
15	33	27	31	21917
16	35	29	31	21918
17	36	30	38	21919
18	38	31	38	21920
19	39	33	38	21921
20	41	34	38	21922
22	44	38	38	21923
24	47	40	38	21924
26	51	44	38	21925



RUBBER BUNG

SIZE NO.	TOP DIA IN mm	BOTTOM DIA IN mm	HEIGHT IN mm	CODE
0000	6.5	4.5	13.5	21940
000	9	6	16	21941
00	10	7	16.5	21942
0	13	9	15.5	21943
1	14	11	18.5	21944
2	16.5	13	20	21945
3	10	14	21	21946
3A	17	14	24	21947
4	21	15	22	21948
4A	20	16.5	21	21949
5A	22.5	17.5	23	21950
6	24.5	20	24	21951
7	26	20	27.5	21952
8	26.5	21	29.5	21953
9	28	21.5	31	21954
9A	30	23	32.5	21955
10	30	26	33	21956
11	32.5	28.5	32.5	21957
12	34.5	30	34.5	21958
13	38.5	31	39	21959
13A	37.5	38.5	44	21960
13B	40	36	25.5	21961
14	41.5	32	42.5	21962
15	42	38	40.5	21963



RUBBER STOPPER

ONE HOLE : Mixed packet containing following sizes:
7 each No. 0,1,2,3,4, and 3 nos. Each of 5,7,9,10,11. Pack of 50. Code No. : 21950

TWO HOLE : Mixed packet containing following sizes:
8 each No. 2,3,4,5, and 6 nos. Each of 7,9 & 3 nos. Each of 10, 11.. Pack of 50. Code No. : 21951



CHEMISTRY ► PORCELAIN WARE

CRUCIBLE WITH LID



Available in the various sizes mentioned below.

CAPACITY	50 ml (without lid)	10ml (with lid)	15ml (with lid)	18ml (with lid)	25ml (with lid)
CODE	21960	21961	21962	21963	21964

CAPACITY	30ml (with lid)	50ml (with lid)	80ml (with lid)	100ml (with lid)	150ml (with lid)
CODE	21965	21966	21967	21968	21969

BASIN PORCELAIN



Available in the various sizes mentioned below.

DIAMETER	50 mm	60 mm	75 mm	85 mm	100 mm
CAPACITY	30 ml	40 ml	100 ml	125 ml	175 ml
CODE	21980	21981	21982	21983	21984

DIAMETER	110 mm	125 mm	150 mm	175 mm	200 mm	250 mm
CAPACITY	250 ml	350 ml	650 ml	800 ml	1000 ml	2000 ml
CODE	21985	21986	21987	21988	21989	21990

CHEMISTRY

MORTAR & PESTEL



Available in the various sizes mentioned below.

OUTSIDE DIA	60 mm	75 mm	85 mm	100 mm
CODE	22000	22001	22002	22003

OUTSIDE DIA	115 mm	125 mm	150 mm	175 mm
CODE	22004	22005	22006	22007

BEEHIVE SHELVES



SIZE	60 mm	75 mm	85 mm	100 mm
CODE	22020	22021	22022	22023

TRIANGULAR PIPE CLAY



SIZE	50mm	60 mm	75 mm
CODE	22100	22101	22102

POROUS POT



Height x Diameter	75 mm x 35 mm	100 mm x 25 mm	150 mm x 50 mm	150 mm x 60 mm
Code	22110	22111	22112	22113

SILICA WARE LABORATORY

Consists of Translucent Silica ware products as mentioned below :

1. Basins with spout (Round Bottom, Flat form , Deep form , Crystallizing).
2. Crucibles and lids (Low form , Tall form , Broad base).
3. Boats combustion with handle.
4. Crucible caking index with lid.
5. Moisture & ash determination circular capsule with ground lid.
6. Volatile matter determination coking crucible and lid.
7. Muffle trays
8. Capsules (Circular , Tobacco ash , Rectangular).
9. Triangle on Nichrome wire.
10. Silica dipping tubes - end closed.

Please see our Price-list or website for further details (capacities ,exact sizes , dimensions & code numbers for silica lab ware) .



TEST TUBE STAND

ALUMINIUM

Made of aluminium, from thick 18 gauge aluminium sheet & anodized, fabricated in three tier. Also available in Polypropylene as in pg. 89 .

Dia in mm.	Code for 12 Holes	Code for 18 Holes	Code for 24 Holes	Code for 36 Holes	Code for 48 Holes
12	22120	22126	22133	22140	22146
15	22121	22127	22134	22141	22147
18	22122	22128	22135	22142	22148
25	22123	22129	22136	22143	22149



LOOP HOLDER

Code No. : 22150

9 inches long with ebonite handle & adjustable nickel-lated head to take wires not coarser than 20 s.w.g.



RETORT STAND BASE

RECTANGULAR

The base is available in three sizes, painted with 60 cm aluminium rod.

Retort stand base rectangular, blue colour painted, dipressed base with aluminium Also available in Polypropylene as in pg. 92 .

Size	5" x 7"	5" x 8"	6" x 9"
Code	22160	22161	22162





RETORT STAND BASE

TRIANGULAR : The base is available in three sizes, painted with 60 cm aluminium rod

Retort stand base triangular, blue colour painted, dipped base with aluminium

Size	5" x 7"	5" x 8"	6" x 9"
Code	22170	22171	22173



RECTANGULAR FLAT BOTTOM

The base is available in three sizes, painted with 60 cm aluminium rod. Retort stand base rectangular, blue colour painted, dipped base with aluminium

Size	5" x 7"	5" x 8"	6" x 9"
Code	22175	22176	22177



BURETTE STAND

Code No. : 22190

Made of seasoned hardwood, polished with plastic clamping screws. Rods are approx. 450 x 16 mm.

Burette stand double is also available. Code No. : 22191



FUNNEL STAND

Code No. : 22200

Made of wood nicely polished for double funnel. Also available in single funnel model. Code No. : 22201

▶ CHEMISTRY

▶ ACCESSORIES

▶ STANDS & CLAMPS

TRIPOD STAND**PAINTED**

Code: 22180

Black painted with zinc plated legs.

Size : 5" x 8".

**STAINLESS STEEL**

Code: 22181

Non-magnetic with bright finish, superior for University and Research uses.

Size : 5" x 8".

**POWDER COATED**

Powder coated, available in black / blue colour.

Size : 5" x 8".

Black	22182
Blue	22183

**BURETTE CLAMP****FISCHER CLAMP DOUBLE**

Code No. :22212

Made of die cast aluminium to hold two burettes, made of glass. High quality powder coated.

**SINGLE**

Code No. :22210

To hold single burettes, made of metal, die pressed, with built in boss head, oxidised.

**DOUBLE**

Code No. :22211

To hold two burette, made of metal, die pressed, with built in boss head, oxidised.



► CHEMISTRY ► ACCESSORIES ► CORK BORER

CORK BORER

BRASS GERMAN TYPE

Superior quality



SET	SIZE	CODE
Set of 6	4-10 mm	22220
Set of 11	4-18 mm	22221
Set of 18	4-27 mm	22222

REGULAR NICKEL PLATED

Nickel-plated finish. Cutting tube mounted with safety under-flange in shaped handle ensuring that operator cannot be injured by a dislodged tube. With Iron rod for cleaning borers.



SET	SIZE	CODE
Set of 6	4-10 mm	22230
Set of 11	4-18 mm	22231
Set of 18	4-27 mm	22232

SHARPNER

Code No. :22240

Plated metal cone with hinged cutter blade set in slot and metal handle. Borer restored to circular shape by cone, edge cut to correct angle by depressing blade using thumb pressure.

For borer diameters 4-27mm.



CORK BORING MACHINE

Code No. :22250

For drilling uniform and straight holes in cork or rubber stoppers. Cast-iron frame with wood platform 10cm. Diameter to support work and adjustable guide rod, central hole through wheel spindle for ejector rod and introduction of lubricant (water or methylated spirit), complete with set of 12 nickel-plated borers cutting sizes from 7 to 25mm.



CORK PRESS

Code No. :22260

Cast iron, for softening corks evenly, by rolling, without increasing the porosity. To accommodate corks upto 32mm diameter. On wooden base.



TEST TUBE HOLDER**CROSS SECTION**

Made of Iron & Brass with Cross pattern with wooden handle.

Material	Iron	Brass
Code	22270	22271

**STRAIGHT**

Code No. :22273

Metal zinc plated with wooden handle.

**WOODEN**

Code No. :22276

With metal spring.

**WIRE TYPE**

Available in two sizes :

Size	Small	Medium
Code	22278	22279

**CRUCIBLE TONG****C.P.**

Made of iron zinc plated/chrome plated :

Size	15 cm	20 cm	35 cm
Code	22310	22311	22312

**S.S.**

Non-magnetic, Stainless Steel bright finish.

Size	15 cm	20 cm
Code	22320	22321



▶ CHEMISTRY ▶ ACCESSORIES ▶ TONGS & CLIPS



TONG S.S.

BEAKER

With bright finish available in sizes:

Size	25 cm	30 cm	32 cm
Code	22330	22331	22332

FLASK

With bright finish available in sizes:

Size	25 cm	30 cm	32 cm
Code	22340	22341	22342



FURNACE

Bright finish available in following sizes. Photo not shown

Size	50 cm	60 cm	70 cm
Code	22350	22351	22352

CLIP

MOHR Code No. :22360

Made of special spring wire, chrome plated.



HOFFMAN

C.P. SUPERIOR

Made of brass available in :

Size	19 mm	25 mm
Code	22380	22381



C.P.

Made of special steel

Size	19 mm	25 mm
Code	22370	22371



BRASS

Made of brass available in :

Size	19 mm	25 mm
Code	22390	22391



CHEMISTRY

MICRO PIPETTE**FIXED VOLUME**

Calibrated for delivery to jet, with graduation. Last drop expelled

Type of pipette.	Range [μl]	Code
Fixed Volume	5	22400
Fixed Volume	10	22401
Fixed Volume	20	22402
Fixed Volume	25	22403
Fixed Volume	50	22404
Fixed Volume	100	22405
Fixed Volume	200	22406
Fixed Volume	250	22407
Fixed Volume	500	22408
Fixed Volume	1000	22409
Fixed Volume	2000	22410
Fixed Volume	5000	22411

VARIABLE VOLUME

General purpose, continuously for sampling and dispensing accurate amount of liquid volumes. Multi channel micropipettes are also

VARIABLE VOLUME MICROPIPETTE		
Range [μl]	Graduation [μl]	Code
0.1 - 2.5	0.01	22420
0.5 - 10	0.1	22421
5.0-50	0.5	22422
50 - 200	1	22423
200 -1000	5	22424
10 -100	0.5	22425
100 -1000	5	22426
2.0 -20	0.1	22427
20 -200	1	22428
500- 5000	50	22429

MULTICHANNEL

MULTICHANNEL MICROPIPETTE		
No. of channels	Range [μl]	Code
8 channels	0.5 -10	22440
8 channels	5.0- 50	22441
8 channels	30 - 300	22442
12 channels	0.5 -10	22443
12 channels	5.0- 50	22444
12 channels	30 -300	22445

STAND

These pipette gives the facility to put 4 or 6 micropipettes.

Stand	Code
for 4 micropipettes	22450
for 6 micropipettes	22451



▶ CHEMISTRY ▶ ACCESSORIES ▶ CLAMP & BOSS HEAD



CLAMP - RETORT

FOUR PRONG

Code No. :22470

Made from specially rust proof metal.



THREE PRONG

Code No. :22471

Made from specially rust proof metal.



BOSS HEAD

METAL ALLOY

Code No. :22480

Made from specially metal alloy rust proof .



POWDER COATED

Code No. :22481

Powder coated.



RETORT RING

Made of Steel nicely painted hammer tone colour .

SIZE	CODE
75 mm	22490
100 mm	22491

CHEMISTRY

▶ CHEMISTRY ▶ ACCESSORIES ▶ SPATULA & BULBS

SPATULA

S.S. FLAT/SPOON ONE END FLAT & THE OTHER END SPOON

Code :22510

Nicely bright finish for Lab use.



S.S. WITH WOODEN HANDLE

Available in various sizes mentioned below :

SIZE	10 cm	15 cm	18 cm	20 cm	25 cm
CODE	22523	22524	22525	22526	22527



CHATTWAY

Made form S.S. bright finish available in sizes :

SIZE	14 cm	15 cm	16 cm	18 cm	20 cm
CODE	22514	22515	22516	22517	22518



NUFFIELD

Code :22520

Made of Stainless steel nicely polished ,length 145 mm.



BULB - PIPETTE

SIZE	10 ml	15 ml	25 ml
CODE	22530	22531	22532



INFLATOR BULB

Code No. :22540

With non return valve.



CHLOROFORM BULB

Code No. :22550

Complete with cotton net.



▶ CHEMISTRY ▶ ACCESSORIES ▶ TUBES & TEATS



RUBBER TUBING

Superior use for lab in different diameter, colour, wall thickness and different lengths which are as follows :

BoreWall	8.2mm	4.75mm	5.40mm	7.9mm	7.9mm	9.5mm	9.5mm
Thickness	1.6 mm	1.6 mm	1.6mm	1.6mm	2.0mm	2.0mm	2.4mm
Code	22560	22561	22562	22563	22564	22565	22566



DROPPER

With rubber teat and glass jet. Rubber teat can be either Black or Red in colour.

Also available in Latex with natural colour & green colour.

Colour	Black	Red	Natural	Green
Code	22580	22581	22585	22586

TEAT

PIPETTE

Code No. :22590

Latex approx 7 cm.



DROPPER

Latex available in two sizes .

Size	Small	Medium
Code	22600	22601

CHEMISTRY

► CHEMISTRY ► ACCESSORIES ► BRUSHES

BRUSHES

CYLINDER

Nylon head with Fan shaped end, on galvanised wire.

Head dia x Length	Over all Length	Code
120 x 65 mm	600 mm	22610
140 x 75 mm	600 mm	22611



BOTTLE

Bristle head on Nylon handle

Head length x dia	Overall Length	For Bottle size	Code
65 x 45 mm	300 mm	125 ml	22620
75 x 50 mm	350 mm	250 ml	22621
100 x 65 mm	400 mm	500 ml	22622
150 x 75 mm	750 mm	1000 ml	22623



TEST TUBE

Bristle , on galvanised wire. Head sizes available are
Overall size 230 mm

Size	65 x 40 mm	50 x 60 mm
Code	22630	22631



BEAKER

Code No. :22640

Bristle head , 150 mm long x 70 mm. Diameter on hardwood handle. Overall length 400 mm.





LABCOATS

MEN

Made of white polyester/white drill. Modern styling with concealed buttons, back vent & three large pockets. Length 100 cms.

Chest in cms	96	108
Code	22650	22651

WOMEN

Made of white polyester/white drill. Modern styling with concealed buttons, back vent & three large pockets. Length 100 cms.

Chest in cms	84	92
Code	22670	22671

CHEMISTRY

KIPP'S APPARATUS

Kipp's Apparatus made of Polyethylene has three main portions. The top portion is fitted with a thistle funnel and a bulb structure through which dilute acid can be poured which reacts with a metal sulphide in the base of the Apparatus. H_2S gas then evolved collects in the middle dome from where it can be released through a leakproof stopcock fitted with a self lubricating PTFE plug. The base is provided with a residual outlet fitted with a cap for easy cleaning.

Material: High Density Polyethylene.

CAPACITY	Polyethylene
250 ml.	22800
500 ml.	22801
1000 ml.	22802



HOFFMAN VOLTAMETER WITHOUT STAND

Graduated glass unit each limb is 0 to 50 x 0.2 ml without stand.

Platinum electrode for demonstration of electrolysis of water. Carbon electrode is used for Ammonia and Hydrochloric Acid. Both are mounted on Rubber stopper for insertion into the open end of the Voltameter Limbs. The glass units has two connected limbs each of cap. 50 ml approx. along with Reservoir tube and funnel shaped bulb with stop cocks on the back of each limb, for use with 12 volt electric power supply.

Material	Code
Borosilicate glass	22810
Neutral glass	22811



▶ CHEMISTRY ▶ HARDWARE ▶ TAPS



GAS TAP BLACK PAINTED

Made of brass, lever handle, spring loaded, locking arrangement to ensure rotation does not go beyond 90°, standard 3mm bore inlet 1/4 inches BSP, flange dia 54mm, with three screws to fix on bench or any other surface. Designed to operate at pressure upto 2 psi (0.14kg/cm²) painted with special scratch chemical resistant paint available in following sizes:

TYPE	One way	Two way	Three way
CODE	22820	22821	22822



CHROME PLATED

Made of brass, lever handle, spring loaded, locking arrangement to ensure rotation does not go beyond 90°, standard 3mm bore inlet 1/4 inches BSP, flange dia 54mm, with three screws to fix on bench or any other surface. Designed to operate at pressure upto 2 psi (0.14kg/cm²) Chrome plated.

TYPE	One way	Two way	Three way
CODE	22830	22831	22832

WATER TAP SWAN NECK



Available in black oxidised. Made of brass, inlet tail is threaded 1/2 inch BSP outlet tube is made out of 15mm, brass tubing which is coupled to the tap standard by means of a sleeve not allowing the neck to swivel or be locked in a desired position. Leakproof operation, bench mounting.

TYPE	BLACK OXIDISED
One way	22840
Two way	22841
Three way	22842



Available in chrome plated. Made of brass, chrome finish, inlet tail is threaded 1/2 inch BSP outlet tube is made out of 15mm, brass tubing which is coupled to the tap standard by means of a sleeve not allowing the neck to swivel or be locked in a desired position. Leakproof operation, bench mounting.

TYPE	CHROME PLATED
One way	22850
Two way	22851
Three way	22852

MODEL ATOMIC SET

SUPERIOR

Atomic model superior, comprises 60 moulded plastic balls of 3 sizes - 12 mm, 19 mm, 25 mm to represent different elements with 25 lugs which represent valency bonds. Supplied in a plastic box.

Also available in 120 balls and 360 balls.

No. of Balls	60	120	360
Code	23010	23011	23012

REGULAR

Code No. : 23015

Atomic model regular, comprises 60 moulded plastic balls of 3 sizes - 12 mm, 19 mm, 25 mm to represent different elements with 25 lugs which represent valency bonds. Supplied in a plastic box.

ATOMIC MODEL SET

These Polystyrene sets consist of moulded balls of different colours and sizes along with connecting lugs of different sizes. These sets are very helpful in modelling different organic & Inorganic compounds.

SENIOR SET

Code No. : 23020

This set consists of 150 lugs & 370 balls of prescribed colours & sizes, packed in a moulded box having separate space for every particular colour & size of ball.

JUNIOR SET

Code No. : 23021

This set consists of 30 connecting lugs & 75 balls of different colours & sizes.

CRYSTAL MODEL SET

Code No. : 23032

These Crystal Model Sets contain different coloured 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.



CHEMISTRY CHARTS

CHARTS

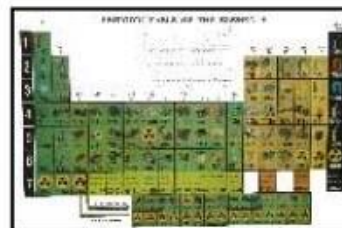
Paper laminated 56cmx90cm



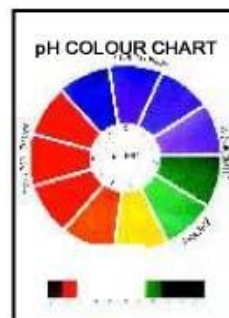
METALS

S.No.	CHEMISTRY CHARTS	CODE
1	The Elements	23300
2	Solids, Liquids & Gases	23301
3	Metals	23302
4	Iron & Steel & Other Metals	23303
5	Hydrogen & the Halogens	23304
6	Carbon, Sulphur & Phosphorus	23305
7	The Air	23306
8	Bonding	23307
9	Compounds & Mixtures	23308
10	Chemical Reactions	23309
11	Oxidation & Reduction	23310
12	Electrolysis	23311
14	Acids, Bases & Alkalis	23312
15	Salts	23313
16	Crystals	23314
17	Organic Chemistry	23315
18	Alcohols & Organic Acids	23316
19	Crude Oil	23317
20	Water	23318
21	Plastics & Natural Polymers	23319

Particulars	Code
Periodic Table of The Elements.	23330
Laboratory Safety.	23340
Laboratory Techniques.	23350
pH colour chart.	23360
Periodic Table of The Elements.	23370



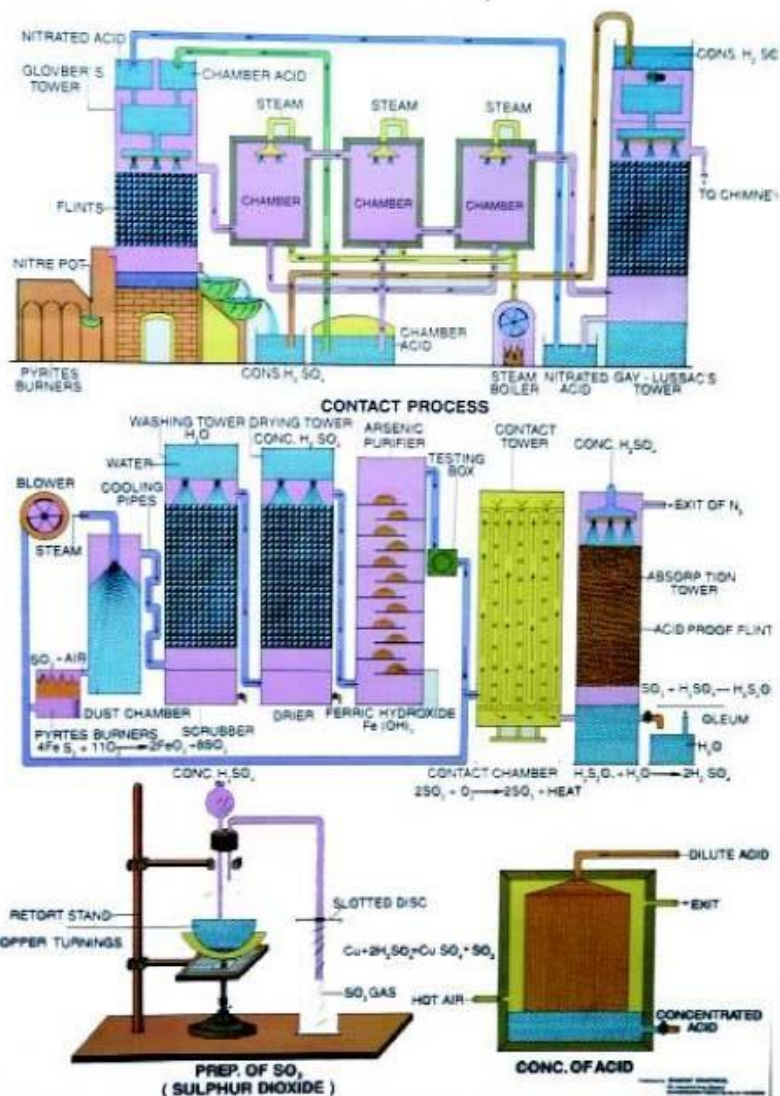
PERIODIC TABLE OF THE ELEMENTS LONG FORM																		
MODERN PERIODIC LAW AS STATED BY MOSELEY:-																		
H																	He	
Li	Be											B	C	N	O	F	Ne	
Na	Mg											Al	Si	P	S	Cl	Ar	
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra	Ac	Unq	Unr	Unh	Uns	Uno	Une										Eka
Lanthanide Series																		
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu				
Actinide Series																		
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr				



CHEMISTRY

POLYART CHARTS

Manufacture of Sulphuric Acid



100cmx75cm fitted with plastic rollers

CODE	CHARTS
23390	Preparation of Ammonia
23391	Preparation of Hydrogen
23392	Preparation of Nitric Acid
23393	Extraction of Metals
23394	Preparation of Oxygen
23395	Manufacture of Sulphuric Acid
23396	Periodic Tables of the Elements
23397	Shapes of atomic Orbitals
23398	Relative Energies of Orbitals
23399	Formation of Molecular orbitals
23400	Geometry of Molecules Part-I
23401	Geometry of Molecules Part-II

CODE	CHARTS
23410	Hybridisation
23411	Orbital Structure of Benzene
23412	Confirmation in Hydrocarbons
23413	Structure of Ionic Solids
23414	Types of Crystal Structure
23415	3D Arrangement Solids
23416	Structural Isomerism Part-I
23417	Structural Isomerism Part-II
23418	Stereoisomerism Part-I
23419	Stereoisomerism Part-II
23420	Estimation of Nitrogen
23421	Determination of Molecular Mass

CODE	CHARTS
23430	Extraction of Metals
23431	Refining of Petroleum
23432	Preparation of Carbon Dioxide
23433	Preparation of HydroChloric Acid
23434	Extraction of Aluminium
23435	Types of Cells
23436	Oxidation & Reduction
23437	Protein Synthesis
23438	Structure of DNA
23439	Structure of RNA
23440	Glycolysis

DIGITAL pH METER

Code No. :20460

PH Meter for Laboratory and Field use.

Measuring point.	:0 to 14ph. with automatic polarity & decimal
Resolution	:0.01 Ph. for Ph measurement
Accuracy	: $\pm 0.1\%$ ± 2 digit
Temp. Compensation Range	:0 to 80° C manual
Read out	:Digital bright, LED type 3½ digit 7 segment 12.5mm
Height Electrode	:Glass Combination Type
Power Requirements	:230V \pm 10% AC 50 Hz



TABLE MODEL

Code No. :20470

With manual / auto temperature compensation,
With combined pH electrode and a 3½ digit LED Display. Table model.



DIGITAL CONDUCTIVITY METER

Code No. :20480

SPECIFICATIONS:

Read out	:Digital bright, LED type
3½	
Indication resistance.	:Direct conductance &
Range Conductance	:0.01 Microohm to 1000m
Mho	
Resistance	:1 ohms to 2 M ohms
Accuracy Conductance	: $\pm 0.5\%$ of range ± 1 digit
Accuracy Resistance	: $\pm 1\%$ of range ± 1 digit
Cell constant compensation	:0.5 to 1.5
Power Requirements	:230V \pm 10% AC 50 Hz



CHEMISTRY ► PAPER ► FILTER & LITMUS



FILTER PAPER

Round shaped in pack of 100s for use in School for general purpose.

	Size in cms	9	11.5	12.5	15	18	21.5	22	24
Economic	Codes	20370	20371	20372	20373	20374	20375	20376	20377
Regular	Codes	20380	20381	20382	20383	20384	20385	20386	20387
Suprior	Codes	20390	20391	20392	20393	20394	20395	20396	20397



LITMUS PAPER

Supplied in books of 20 leaves of size 63.5 x 10 mm. Packed in box of 5 books each. Available in

LITMUS PAPER	CODE
RED	20400
BLUE	20405



PH INDICATOR

Code No. :20420

Supplied in box of 5 books and each containing 20 leaves of size 63.5 x 10 mm.

The pH range is 1 to 10.



PH DISPENSOR PAPER

Indicator paper supplied in plastic dispenser containing 5 meters of 8 mm wide test strip. A colour chart is provided on the side of each dispenser. Full range paper covering from 1-10 pH in step of 1 pH.

Also available in 10-20 pH range.

pH Range	CODE
1 to 10	20430
10 to 20	20431



ALCOHOL SWAB

Code No. :20440

Single use alcohol Swab for external use. 70% Isopropyl Alcohol (saturated)



LENS CLEANING TISSUE PAPER

Code No. :20450

Pack of 100 leaves.

Size : 9 x 14.5 mm

CHEMISTRY

ELECTRONIC BALANCE & BURNER

CB SERIES

Backlight LCD/LED display with 8 different weighing units such as g, ct, tola etc. Piece counting & percentage weighing function.

CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10110	CB 302	300 gms	0.01 gm	118 mm dia
10111	CB 602	600 gms	0.01 gm	
10113	CB 1202	1200 gms	0.01 gm	118 x 140 mm
10114	CB 3001	3100 gms	0.1 gm	

POCKET SCALES

Simple battery operated model with precise & accurate reading. LCD display with optional power supply.

CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10130	PA 100	100 gms	0.01 gm	65 x 75
10131	PA 200	200 gms	0.01 gm	
10132	PA 250	250 gms	0.05 gm	35 mm dia
10133	CC 50	50 ct/10 gms	0.01 ct/0.001 gm	
10134	CC 100	100ct/20 gms	0.01 ct/0.002 gm	

SPIRIT LAMP

BRASS

Brass sheet die pressed, with woven wick in metal holder, screw on cap available in different capacities.

Capacity	Code
50 ml	20010
100 ml	20011

ALUMINIUM

Aluminium sheet die pressed, with woven wick in metal holder, screw on cap available in different capacities.

Capacity	Code
50 ml	20015
100 ml	20016

STEEL

Steel sheet die pressed, with woven wick in metal holder, screw on cap available in different capacities

Capacity	Code
50 ml	20020
100 ml	20021

GLASS

Burner Methylated spirit glass available in two capacities with metal wick holder and glass stopper.

Capacity	Code
60 ml	20025
120 ml	20026



▶ CHEMISTRY ▶ BALANCE

BALANCE

CHEMICAL

Code No. :10010

With metallic beam, flat form, nicely lacquered / nickelled and graduated in 100 divisions with Zero at centre. With selected and ground agates. Housed in polished wooden case with counter poised sliding front. Capacity : 200 gms , Sensitivity : 5 mg , Length of beam : 125 mm. Diameter of pan 75 mm, with zero adjustment and stainless steel pan 90 mm diameter with two pouring spouts and handle. Height of stirrup 175 mm. Magnetically-damped beam movement ensures rapid weighing. A platform housed in the base can be used for density determination.

Chemical Balance is also available without case. Code No:10011



PHYSICAL WITHOUT CASE

Code No. :10020

With metallic beam engraved with a rider scale and provided with Agate edges. Detachable pans (metallic or bakelite) are suspended from double hooks. Fitted on polished wooden base and provided with levelling screws.

Capacity : 250 gms

Sensitivity : 2 mg

Physical Balance is also available with case. Code No:10021



TRIPLE BEAM

Code No. :10030

A single pan low form balance with three tiered beams, which can weigh up to 2610 gms. when used with supplementary masses, the balance has three notched weighing beams with centre indicating sliding masses giving total capacity of 610 gms. Triple beam balance comes with Magnetic Damping and Additional masses are hung on the end of the beam increasing the capacity up to 2610 gms. and they can be stored in the recessed base, when not required.

Beams 0 to 500 g x 100 g, 100 g x 10 g, 0 to 10 g x 0.1g

Supplementary masses 2 x 1000g, 1 x 500g

Pan stainless steel dia. 150 mm



DOUBLE BEAM

Code No. :10040

Two pan balance for accurate and rapid weighing up to 2 kg. when used with supplementary masses. The balance has a cast alloy base and features angled beams with centre reading pointer, magnetic damping, spring loaded zero adjustment compensator, precision ground knives and cross braced aluminium alloy beam. Equipped with facility for under balance weighing.

Beams 0 to 200g x 10g. 0 to 10g x 0.1g

Pan, stainless steel dia - 150 mm

ACCESSORY optional - Tare (Code No. 10041)

Rod (Code No. 10042)



CHEMISTRY ► BALANCE



SINGLE PAN

Code No. : 10050

Balance Single Pan capacity 311g x 10mg with Four Beams each provided with a non-removable slider and graduated 0 to 200 x 100g, 0 to 100 x 10g, 0 to 10 x 1 g. and 0 to 1g x 10mg respectively. Additional masses are not required. With zero adjustment and stainless steel pan 90 mm diameter with two pouring spouts and handle. Height of stirrup 175 mm. Magnetically-damped beam movement ensures rapid weighing. A platform housed in the base can be used for density determination.



DIAL-O-GRAM

Code No. :10055

Capacity 310g x 10mg with two beams graduated 0 to 200g x 100 g and 0 to 100g x 10g. respectively and a direct reading dial graduated 0 to 10 x 0.1 g having a vernier reading with least count 0.01g.



COMPRESSION TYPE

Accurate & sensitive balance, wide view dial fitted with anti-rust protected parts.

CAPACITY	SUBDIVISION	CODE
5 Kg	25 gm	10060
2 Kg	10 gm	10061
500 gm	2 gm	10062

ELECTRONIC BALANCE

MA SERIES

Simple battery operated model with precise & accurate reading. LCD display with optional power supply.



CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10070	MA 200	200 gms	0.01 gm	120 mm dia
10071	MA 300	300 gms	0.01 gm	155 x 155 mm
10072	MA 500	500 gms	0.05 gm	
10073	MA 1000	1000 gms	0.1 gm	
10074	MA 1500	1500 gms	0.1 gm	
10075	MA 2000	2000 gms	1 gm	
10076	MA 5000	5000 gms	1 gm	

CA SERIES

This model has built-in rechargeable battery with LCD display. Piece counting function is also available.



CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10090	CA 600	600 gms	0.1 gm	120 mm dia
10091	CA 1200	1200 gms	0.2 gm	180 x 140 mm
10092	CA 2000	2000 gms	1 gm	
10093	CA 3000	3000 gms	0.5 gm	
10094	CA 5	5000 gms	1 gm	

CHEMISTRY ► BURNER



BUNSEN BURNER

POWDER COATED BASE - SUPERIOR

Code No. : 20030

Bunsen burner new type brass tube 11 mm dia meter with rotatable non-removable air regulator and riffled gas inlet tube 9mm outer dia meter on heavy metal base powder coated for LPG.



PAINTED BASE

Code No. :20031

Nickel-plated brass tube 13mm diameter with an adjustable non-removable screw type air regulator and riffled gas inlet nickle-plated brass tube 9mm outer diameter, on heavy stable metal base synthetic stove enameled finish for LPG .



WITH COAL GAS

Code No. :20032

Bunsen burner new type brass tube 11 mm dia meter with rotatable non-removable air regulator and riffled gas inlet tube 9mm outer dia meter on light metal base powder coated for Coal Gas.



MAKER TYPE

Code No. :20040

Supplied with base with tapered riffled inlet tube. Chrome plated burner tube has perforated steel plate on top and rotatable air regulator around the jet. Overall height 150mm for LPG gas.



'MAKER' WITH STOP COCK

Code No. :20041

Supplied with base with tapered riffled inlet tube. Chrome plated burner tube has perforated steel plate on top and stopcock air regulator around the jet. Overall height 150mm for LPG gas.

CHEMISTRY

CHEMISTRY

HOT PLATE, WATER STILL & HEATING MANTLE

HOT PLATE

ROUND

The body is made of P.C.R.C. sheet painted with attractive stove enamel. The top of plate is 20.5 cm dia fitted with an indicating lamp. This type of heating plate is very useful for fast heating upto 500°C. To work on 220/230 Volts A.C.

SIZE	RATING	Code
20.5 cm (8")	1.5 K.w.	20320



RECTANGULAR

The body is made of specially designed with P.C.R.C. sheet painted with attractive stove enamel. This is useful for continuous heating upto 350°C. To work on 220/230 Volts A.C.

SIZE	With Energy regulator	With thermostat upto 300deg.C	With Digital Controller
250 X 300 X 180MM, 1.2KW	20300	20305	20310
250 X 400 X 180MM, 1.5KW	20301	20306	20311
300 X 450 X 180MM, 2.2KW	20302	20307	20312

WATER STILL

The unit is recommended for making pyrogen free water of a very High degree of purity. This still is fitted with ISI mark Kettle Element with ejection device. The complete unit is made of stainless steel except tap, to work on 220/230 Volts A.C.

OUTPUT	LOAD	CODE
4 Lt./hour	2 Pc. X 1.5 K.w.	20330
6 Lt./hour	3 Pc. X 1.5 K.w.	20331



MANTLE

Suitable for Laboratories, Chemicals, Pharmaceuticals, Dyes, Glass Plants etc. Particularly useful for Heating inflammable liquids. Electric heating net is hand knitted from glass yarn and there is no joint to maintain the strength of the yarn and stands high temperature upto 350°C.

The body of the mantle is spun from one piece of non rusting Aluminium (upto 5.0 Lt. Capacity) duly Stoving Painted. All heating mantles are lagged with special grade mineral wool. To work on 220/230 Volts A.C.

CAPACITY	MANTLE	
	WITH ENERGY REGULATOR	WITH DIGITAL CONTROLLER
50ML & 100ML, 80 WATTS	20340	20350
250ML & 500ML, 200 WATTS	20341	20351
1 LTR., 300 WATTS	20342	20352
2 LTR., 450 WATTS	20343	20353
3 LTR., 500 WATTS	20344	20354
5 LTR., 600 WATTS	20345	20355
10 LTR., 2x600 WATTS	20346	20356
20 LTR., 3x650 WATTS	20347	20357
50 LTR., 5x850 WATTS	20348	20358



MOISTURE DISH

Moisture dish is made of stainless steel as under:

Diameter	Height	Code
70 mm	17 mm	20360
55 mm	22 mm	20361



MUFFLE FURNACE

Maximum Temp. 950°C - working temp. 900°C.

Light weight with ceramic fibre wool insulation. The outer casing is made of double walled thick P.C.R.C. sheet painted with attractive stove enamel. Heating elements are made of KANTHAL wire backed by cerawool insulation.

A viewing cap is also provided on the door. Temperature control unit consists of Energy regulator & Pyrometer with silver thermal fuse or with Digital controller cum indicator to work on 220/230 Volts AC with an accuracy of $\pm 3^\circ\text{C}$ or better.

Also available in High temperature of 1200°C.

SIZE	TYPE	950 Deg
100 X 100 X 225MM, 1.8KW	With E/R & Pyrometer	20061
100 X 100 X 225MM, 1.8KW	With Digital Controller	20062
125 X 125 X 250MM, 2.2KW	With E/R & Pyrometer	20065
125 X 125 X 250MM, 2.2KW	With Digital Controller	20066
150 X 150 X 300M, 3.0KW	With E/R & Pyrometer	20068
150 X 150 X 300MM, 3.0KW	With Digital Controller	20069
200 X 200 X 300MM, 4.0KW	With E/R & Pyrometer	20070
200 X 200 X 300MM, 4.0KW	With Digital Controller	20071

Furnace With Digital Controller cum indicator	1200 Deg
100 X 100 X 225MM, 1.8KW	20075
125 X 125 X 250MM, 2.2KW	20080
150 X 150 X 300MM, 3.0KW	20081
200 X 200 X 300MM, 4.0KW	20085
200 X 200 X 400MM, 5.0KW	20086
300 X 300 X 300MM, 6.0KW	20090
300 X 300 X 450MM, 9.0KW	20091
300 X 300 X 600MM, 12.0KW	20092



OVEN

In this system there is one path of circulating Hot Air in between the inner chamber and insulation. Forced Air moved by the motorised blower is called PERFECT SYSTEM. It results in minimum temperature variation at any point in working space.

Temperature controlled by a PID controller with Digital Indicator fitted with Safety Alarm from 50°C above ambient to 250°C with a sensitivity of $\pm 1^\circ\text{C}$ or better in Bare Oven. Working chamber is made of Stainless Steel 304 grade and outside made of mild steel painted with good stoving enamel with adjustable wire mesh nickel plated trays. To work on 220/230 Volts A.C. Supply.

OVEN UNIVERSAL TYPE UPTO 250 DEGREE C		
SIZE	ALUMINIUM	STAINLESS STEEL
300 x 300 x 300mm, 27 LTR, 2 TRAY	20100	20105
350 x 350 x 350mm, 43 LTR, 2 TRAY	20110	20115
450 x 450 x 450mm, 91 LTR, 2 TRAY	20120	20125
450 x 600 x 450mm, 122 LTR, 2 TRAY	20130	20135
600 x 600 x 600mm, 216 LTR, 2 TRAY	20140	20145
600 x 900 x 450mm, 243 LTR, 3 TRAY	20150	20155
600 x 900 x 600mm, 324 LTR, 3 TRAY	20160	20165



INCUBATOR

Temperature Thermostatically controlled by hydraulic thermostat 5°C above ambient to 70°C with a sensitivity of $\pm 0.5^\circ\text{C}$ in Bare Incubator. Beaded heating elements are placed in ribs at the bottom and sides. Double walled, inside Aluminium Anodized or Stainless Steel & Outside mild steel sheet painted with attractive stove enamel. Door has double glass viewing, built in horizontal L-shape glass thermometer with wire mesh nickel plated adjustable trays, Rocker Switch and indicator & Thermostat Indicator to work on 220/230 Volts A.C.

INCUBATOR		
SIZE	ALUMINIUM	STAINLESS STEEL
300 x 300 x 300mm, 27 LTR, 2 TRAY	20180	20185
350 x 350 x 350mm, 43 LTR, 2 TRAY	20190	20195
450 x 450 x 450mm, 91 LTR, 2 TRAY	20200	20205
450 x 600 x 450mm, 122 LTR, 2 TRAY	20210	20215
600 x 600 x 600mm, 216 LTR, 2 TRAY	20220	20225
600 x 900 x 450mm, 243 LTR, 3 TRAY	20230	20235
600 x 900 x 600mm, 324 LTR, 3 TRAY	20240	20245



CHEMISTRY ► MAGNETIC STIRRERS



MAGNETIC STIRRERS

The Stainless steel top housing series of magnetic stirrers are most compact models. PMDC motor gives higher torque even at lower speeds and maintains speed stability despite viscosity or volume changes. Accurate stepless speed control allows smooth variation upto 1200 rpm. Stirring is accomplished by a small Teflon coated magnetic paddle to be placed in the container.

TECHNICAL DATA

Capacity	Ltrs	500 ml	1	2	5
WxDxH	mm	105 x 135 x 70	145 x 185 x 135	145 x 185 x 135	180 x 195 x 135
Stirring Paddle	ø x length	7 x 15 mm	9x25mm	9x35mm	13x50mm
Code		22860	22861	22862	22863

Supply : 220-240 Volts 50 Hz Single Phase



MAGNETIC STIRRERS WITH HOTPLATE

Magnetic stirrers with hot plate are similar to the above magnetic stirrers but have additional stainless steel hot plate. PMDC motor gives higher torque even at lower speeds and maintains speed stability despite viscosity or volume changes. Accurate stepless speed control allows smooth variation upto 1200 rpm. Heating energy is controlled by energy regulator.

Saient Features :

PMDC motor for higher torque even at low speeds.

Better low speed stirring even with small volume.

Accurate stepless speed control maintains excellent speed stability.

Specially designed for corrosive atmosphere reducing the changes of fumes entering the unit.

TECHNICAL DATA

Stirring capacity	Ltrs	1	2	5
Heating capacity	Watts	150	300	500
WxDxH	mm	160 x 200 x 160	160 x 200 x 160	175 x 225 x 185
Stirring Paddle	øxlength	9 x 25 mm	9 x 35mm	13 x 50mm
Code		22870	22871	22872

Supply : 220-240 Volts 50 Hz Single Phase

▶ CHEMISTRY ▶ MAGNETIC STIRRERS

DELUXE MAGNETIC STIRRERS

These deluxe magnetic stirrers are unique in design, totally enclosed, highly chemical resistant even to acid and alkali. Ideal for all types of laboratory stirring applications from 500 ml to 10 litres. These magnetic stirrers give better speed regulation even at low speed. The stirring speed and heating energy is controlled by stepless speed and energy regulator.

Salient Features :

Digital Speed indicator for display of stirring speed.
 PMDC motor for higher torque even at low speeds.
 Better low speed stirring even with small volume
 Accurate stepless speed control maintains excellent speed stability. Specially designed for corrosive atmosphere reducing the chances of fumes entering the unit.

Capacity	Ltrs	5	10
WXDXH	mm	200 x 225 x 185	250 x 250 x 205
Hot Plate	Watts	600	
Stirring Paddle	ø x length	13 x 50 mm	13 x 50 mm
Code		22880	22881

Supply 220-240 Volts 5 Hz Single Phase.



ELECTROMAGNETIC STIRRERS

Electromagnetic (motorless) stirrer are ideally suitable for filtration & general lab mixing of solution. They incorporate superior stepless speed controller to control the speed from 100 to 650 RPM. The units have feature of reverse spin direction mode, which can be adjusted from 30 seconds to 4 minutes. In case stirring paddle flies out, it is automatically caught back with the help of Unique Catch Back feature. Different models with multiple 2, 4 & 6 stirring points also available. Supplied with Teflon Paddle 9 x 25mm.

Salient Features :

No moving parts or motor.

Light weight, compact size portable.

Reverse control provides automatic change of direction.

Accurate stepless speed control maintains excellent speed stability despite viscosity or volume changes.

Stirring capacity upto 1000 ml per stirring point.

TECHNICAL DATA

Stirring points	1	2	4	6
W X D X H (mm)	170 x 175 x 60	270 x 165 x 60	270 x 290 x 60	400 x 275 x 60
Code	22890	22891	22892	22893

Supply : 220-240 Volts 50 Hz Single Phase



Physics



BALANCE**CHEMICAL**

Code No. :10010

With metallic beam, flat form, nicely lacquered / nickelled and graduated in 100 divisions with Zero at centre. With selected and ground agates. Housed in polished wooden case with counter poised sliding front. Capacity : 200 gms , Sensitivity : 5 mg , Length of beam : 125 mm. Diameter of pan 75 mm, with zero adjustment and stainless steel pan 90 mm diameter with two pouring spouts and handle. Height of stirrup 175 mm. Magnetically-damped beam movement ensures rapid weighing. A platform housed in the base can be used for density determination.

Chemical Balance is also available without case. Code No:10011

**PHYSICAL WITHOUT CASE**

Code No. :10020

With metallic beam engraved with a rider scale and provided with Agate edges. Detachable pans (metallic or bakelite) are suspended from double hooks. Fitted on polished wooden base and provided with levelling screws. Capacity : 250 gms
Sensitivity : 2 mg

Physical Balance is also available with case. Code No:10021

**TRIPLE BEAM**

Code No. :10030

A single pan low form balance with three tiered beams, which can weigh upto 2610 gms. when used with supplementary masses, the balance has three notched weighing beams with centre indicating sliding masses giving total capacity of 610 gms. Triple beam balance comes with Magnetic Damping and Additional masses are hung on the end of the beam increasing the capacity upto 2610 gms. and they can be stored in the recessed base, when not required.

Beams 0 to 500 g x 100 g, 100 g x 10 g, 0 to 10 g x 0.1g

Supplementary masses 2 x 1000g, 1 x 500g

Pan stainless steel dia. 150 mm

**DOUBLE BEAM**

Code No. :10040

Two pan balance for accurate and rapid weighing upto 2 kg. when used with supplementary masses. The balance has a cast alloy base and features angled beams with centre reading pointer, magnetic damping, spring loaded zero adjustment compensator, precision ground knives and cross braced aluminium alloy beam. Equipped with facility for under balance weighing.

Beams 0 to 200g x 10g

0 to 10g x 0.1g

Pan, stainless steel dia - 150 mm

ACCESSORY optional - Tare (Code No. 10041)

Rod (Code No. 10042)



▶ PHYSICS

▶ MECHANICS

▶ BALANCE

PHYSICS

**SINGLE PAN**

Code No. : 10050

Balance Single Pan capacity 311g x 10mg with Four Beams each provided with a non-removable slider and graduated 0 to 200 x 100g, 0 to 100 x 10g, 0 to 10 x 1 g. and 0 to 1g x 10mg respectively. Additional masses are not required, With zero adjustment and stainless steel pan 90 mm diameter with two pouring spouts and handle. Height of stirrup 175 mm. Magnetically-damped beam movement ensures rapid weighing . A platform housed in the base can be used for density determination.

**DIAL-O-GRAM**

Code No. :10055

Capacity 310g x 10mg with two beams graduated 0 to 200g x 100 g and 0 to 100g x 10g. respectively and a direct reading dial graduated 0 to 10 x 0.1 g having a vernier reading with least count 0.01g.

**COMPRESSION TYPE**

Accurate & sensitive balance, wide view dial fitted with anti-rust protected parts.

CAPACITY	SUBDIVISION	CODE
5 Kg	25 gm	10060
2 Kg	10 gm	10061
500 gm	2 gm	10062

ELECTRONIC BALANCE**MA SERIES**

Simple battery operated model with precise & accurate reading.

LCD display with optional power supply.



CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10070	MA 200	200 gms	0.01 gm	120 mm dia
10071	MA 300	300 gms	0.01 gm	155 x 155 mm
10072	MA 500	500 gms	0.05 gm	
10073	MA 1000	1000 gms	0.1 gm	
10074	MA 1500	1500 gms	0.1 gm	
10075	MA 2000	2000 gms	1 gm	
10076	MA 5000	5000 gms	1 gm	

CA SERIES

This model has built-in rechargeable battery with LCD display. Piece counting function is also available.



CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10090	CA 600	600 gms	0.1 gm	120 mm dia
10091	CA 1200	1200 gms	0.2 gm	180 x 140 mm
10092	CA 2000	2000 gms	1 gm	
10093	CA 3000	3000 gms	0.5 gm	
10094	CA 5	5000 gms	1 gm	

CB SERIES

Backlight LCD/LED display with 8 different weighing units such as g, ct, tola etc. Piece counting & percentage weighing function

CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10110	CB 302	300 gms	0.01 gm	118 mm dia
10111	CB 602	600 gms	0.01 gm	
10113	CB 1202	1200 gms	0.01 gm	
10114	CB 3001	3100 gms	0.1 gm	118 x 140 mm

**POCKET SCALES**

Simple battery operated model with precise & accurate reading. LCD display with optional power supply.

CODE	MODELS	CAPACITY	READABILITY	PAN SIZE(mm)
10130	PA 100	100 gms	0.01 gm	65 x 75
10131	PA 200	200 gms	0.01 gm	
10132	PA 250	250 gms	0.05 gm	
10133	CC 50	50 ct/10 gms	0.01 ct/0.001 gm	35 mm dia
10134	CC 100	100ct/20 gms	0.01 ct/0.002 gm	

LEVER ARM BALANCE

Code No. : 10150

The balance is useful for trial weighing, reading directly in gm. Double range, change from one range to another is accomplished by rotating a hinged arm. Index is of edge reading type to avoid parallax error.

- Capacity - 250 gm and 1000 gm
 Ranges - First range 250 x 1gm
 Second range 1000 x 10gm.

**SPRING BALANCE****DIAL TYPE**

Dial type, circular scale, heavy pattern, suspension and load hooks.

TYPE	CAPACITY	CODE
Outer plastic body	25 kgs x 50g	10160
Outer metal body	25 kgs x 50g	10170

**RECTANGULAR PLASTIC BODY**

Rectangular Plastic Body, metal scale with zero adjuster, suspension ring and load hook, available in Gram, Newton & Gram/Newton range :

CODE	Dual scale N/Gms	CODE	Newton (Grad.)	CODE	Grams (Grad.)
10200	1N/100 gms	10210	1N 0.1 N	10220	100gms 1 gm
10201	2.5N/250 gms	10211	2.5N 0.25 N	10221	250gms 2.5 gms
10202	5N/500 gms	10212	5N 0.5 N	10222	500gms 5 gms
10203	10N/1000 gms	10213	10N 1 N	10223	1000gms 10 gms
10204	20N/2000 gms	10214	20N 2 N	10224	2000gms 20 gms



METAL BODY RECTANGULAR

In flat form, metal case with large easily readable scales both in Dual and single scale.

Code	10230	10231	10232	10233	10234	10235	10236	10237
Capacity	100gm	250gm	500gm	1000gm	2000gm	5000gm	10kgs	12.5kgs
Graduation	1 gm	2.5 gm	5gm	10gm	20gm	50gm	100gm	125gm

Code	10240	10241	10242	10243	10244	10245	10246	10247
Capacity	1N	2.5N	5N	10N	20N	50N	100N	125N
Graduation	0.1N	0.25N	0.5N	1N	2N	5N	10N	12.5 N

Code	10250	10251	10252	10253	10254	10255	10256	10257
Capacity	1N/100gms	2.5N/250gms	5N/500gms	10N/100gms	20N/2kg	50N/5kg	100N/10kg	125N/12.5kg
Graduation	0.1N	0.25N	0.5N	1N	2N	5N	10N	12.5 N

METAL BODY

In flat form, metal case with large easily readable scales both in Dual and single scale.

Code	10260	10261	10262	10263	10264	10265	10266	10267
Capacity	100gm	250gm	500gm	1000gm	2000gm	5000gm	10kgs	12.5kgs
Graduation	1 gm	2.5 gm	5gm	10gm	20gm	50gm	100gm	125gm

Code	10270	10271	10272	10273	10274	10275	10276	10277
Capacity	1N	2.5N	5N	10N	20N	50N	100N	125N
Graduation	0.1N	0.25N	0.5N	1N	2N	5N	10N	12.5 N

Code	10280	10281	10282	10283	10284	10285	10286	10287
Capacity	1N/100gms	2.5N/250gms	5N/500gms	10N/100gms	20N/2kg	50N/5kg	100N/10kg	125N/12.5kg
Graduation	0.1N	0.25N	0.5N	1N	2N	5N	10N	12.5 N

TUBULAR METAL

Aluminium body, black, anodized and with engraved graduation, available With Metric and Newton ranges.

Code	10320	10321	10322	10323	10324
Capacity	1N/100gm	2.5 N/250gm	5 N/500gm	10 N/1000gm	20 N/2000gm

Code	10330	10331	10332	10333	10334
Capacity	1.0N	2.50N	5.0N	10N	20N
Graduation	0.1N	0.25N	0.5N	1.0N	2.0N

BABY BALANCE

Tubular Aluminium body graduated, with zero adjuster, and provided with top suspension loop and hook and spring mechanism. With scale on both sides, in grams and kilograms.

Capacity	Graduation	Code
7 kgs	200 gm	10340
11 kgs	500 gm	10341

**ROUND PLASTIC BODY**

Plastic tubular Spring balance with double scale. Each range is colour coded for convenience and scaled in both grams and Newtons. The spring mechanism is clearly visible and zero adjustment is incorporated

CODE	Grams	(Grad.)	CODE	Newton	(Grad.)
10310	100gms	1 gm	10300	1N	0.1 N
10311	250gms	2.5 gms	10301	2.5N	0.25 N
10312	500gms	5 gms	10302	5N	0.5 N
10313	1000gms	10 gms	10303	10N	1 N
10314	2000gms	20 gms	10304	20N	2 N

CODE	Dual scale N/Gms
10290	1N/100 gms
10291	2.5N/250 gms
10292	5N/500 gms
10293	10N/1000 gms
10294	20N/2000 gms

**WEIGHT BOX****FOR ANALYTICAL BALANCE**

Class B accuracy Brass Plated Weights in velvet lined seasoned wooden box with forceps, fraction weights and two riders.

Code	Capacity	Accuracy
10400	1 mg - 50 gm	0.1 gm
10401	1 mg - 100 gm	0.1 gm
10402	1 mg - 200 gm	0.1 gm

**FOR PHYSICAL BALANCE (SUPERIOR)**

Polished brass in hardwood case with varnish finish and hinged lid. Divided compartments with dust cover. Holds nickel-silver and aluminium fractions. Supplied with chrome plated brass forceps.

Code	Capacity
10410	1 mg - 100 gm
10411	1 mg - 200 gm



▶ PHYSICS ▶ MECHANICS ▶ WEIGHTS



FOR PHYSICAL BALANCE (REGULAR)

Polished, plated brass in hardwood case (deco polish), hinged lid with weights and forceps.

Code	Capacity
10420	10 mg - 100 gms
10421	10 mg - 200 gms

WEIGHTS

IN WOODEN BLOCK

Balance weights, brass finished, with wooden block, as illustrated.



- A Capacity 500 gm. Code : 10430
Comprising 1 x 200 g, 2 x 100g, 1 x 50g,
1 x 20g, 2X 10 g, 1 x 5g, 2 x 2 g, 1 x 1 g.
- B Capacity 1000gm. Code : 10431
Comprising 1 x 500g, 1 x 200g, 2 x 100g,
1 x 50g, 1 x 20g, 2 x 10g, 1 x 5g, 2 x 2 g, 1 x 1 g.
- C Capacity 2000 gm. Code : 10432
Comprising 1 x 1000g, 1 x 500g, 1 x 200g, 2 x 100g, 1 x
50g,
1 x 20g, 2 x 10g, 1 x 5g, 2 x 2 g, 1 x 1 g



SPARES WEIGHTS FOR PHYSICAL BALANCE

Made from Brass (Chrome plated) and in flat form.
Available in various capacities :

Code	10440	10441	10442	10443	10444	10445	10446	10447	10448	10449
Capacity in gms	1	2	5	10	20	50	100	200	500	1000

FRACTIONAL WEIGHT SET

Code No. :10460

Physical fractional weights made from Special Alloy, complete set in plastic round case.



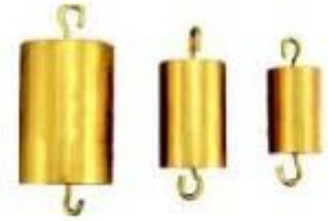
With Capacity available are :
1mg x 1, 2mg x 2, 5mg x 1, 10mg x 1,
20mg x 2, 50mg x 1, 100mg x 1,
200mg x 2, 500mg x 1.

▶ PHYSICS ▶ MECHANICS ▶ WEIGHTS

WITH DOUBLE HOOK

Made in brass finish with double hooks on both sides.

Code	10480	10481	10482	10483	10484	10485
Capacity in gms	5	10	20	50	100	200



WITH SINGLE HOOK

Made in brass finish with single hook

Code	10490	10491	10492	10493	10494	10495
Capacity in gms	5	10	20	50	100	200



SLOTTED WEIGHTS

BRASS

Weights made in brass with a slot running upto the centre hung on a hanger made of brass rod of 5 mm dia.

Available regular quality with Tolerance of $\pm 3\%$ Goldcross with tolerance $\pm 1\%$ superior Heuer.

Total capacity	Description	Tolerance (1 %)		Tolerance (3 %)	
		Codes	Codes	Codes	Codes
50g Set	9 x 5 gm + 1 Hanger of 5gm	10500	10510		
100g Set	9 x 10 gm + 1 Hanger of 10 gm	10501	10511		
200g Set	9 x 20 gm + 1 Hanger of 20 gm	10502	10512		
500g Set	9 x 50 gm + 1 Hanger of 50 gm	10503	10513		
1000g set	9 X 100 gm+ 1 Hanger of 100 gm.	10504	10514		

Weight spares	Code	
	Tolerance 1 %	Tolerance 3 %
5 gm	10518	10524
10 gm	10519	10525
20 gm	10520	10526
50gm	10521	10527
100gm	10522	10528

Hanger	Code
5 gm	10530
10 gm	10531
20 gm	10532
50gm	10533
100gm	10534



IRON

Slotted weights in iron, chrome plated and black painted.

Total capacity	Description	Chrome plated
100 gm set	9 weight x 10 gm. + 1 hanger (10 gms)	10540
200 gm set	9 weight x 20 gm. + 1 hanger (20 gms)	10541
500 gm set	9 weight x 50 gm. + 1 hanger (50 gms)	10542
1000 gm set	9 weight x 100 gm. + 1 hanger (100 gms)	10543

Total capacity	Black painted	Weight spares	Chrome plated	Black painted
100 gm set	10547	10 gm	10551	10560
200 gm set	10548	20 gm	10552	10561
500 gm set	10549	50 gm	10553	10562
1000 gm set	10550	100gm	10554	10563

Spare Hanger	Chrome plated	Black painted
10 gm	10570	10575
20 gm	10571	10576
50 gm	10572	10577
100 gm	10573	10578



▶ PHYSICS

▶ MECHANICS

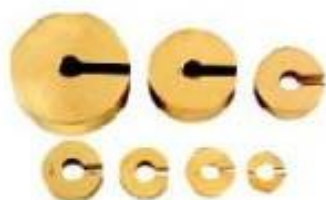
▶ WEIGHTS

**IN BRASS 11 STEPS - SET**

Code No. :10580

Slotted weight set of 11 in brass 250 gms including hanger made from 7 mm brass rod

- 50 gm x 1 Hanger
- 50 gm x 2 Weight
- 20 gm x 3 Weight
- 10 gm x 2 Weight
- 5 gm x 4 Weight

**SPARE BRASS**

Slotted weights in brass.

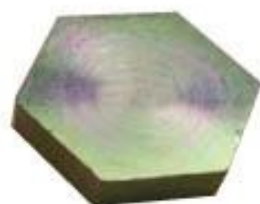
Sizes are:

Code	Capacity	Code	Capacity
10590	1 Gram	10595	50 Gram
10591	2 Gram	10596	100 Gram
10592	5 Gram	10597	200 Gram
10593	10 Gram	10598	500 Gram
10594	20 Gram		

**HEXAGONAL WEIGHT****WITH RING**

Hexagonal weight with ring painted.

Code	10620	10621	10622	10623	10624
Capacity in gms	20	50	100	200	500

**WITHOUT RING**

Hexagonal weight without ring zinc plated.

Code	10630	10631	10632	10633	10634
Capacity in gms	20	50	100	200	500

PHYSICS

METRE SCALE**HARDWOOD**

Metre Scale Rules (Dual Reading) made from seasoned wood, both edges divided in mm, polished numbered every 10mm.

Rule in mm/mm:

100cm long Code : 10700

50cm long Code : 10701

One edge reading 0-100 Left to right & the other reverse.

Rule in mm/Inches:

100 cm long Code : 10710

50 cm long Code : 10711

**VERNIER CALIPER****THUMB WHEEL TYPE**

Code No. :10730

Dual scale capacity 125mm x 0.1 mm and 5 x 1/128 inches for internal , external reading and depth.Made of plated steel with thumb wheel for easy motion of jaws.

**IME TYPE**

Code No.: 10760

Improved design,steel(chromium plated) double scale graduated 150mm, vernier reading 0.1mm and inch scale graduated to 6 inches, vernier reading 1/128 inch. Provided with thumb movement individually packed in velvet lined box plastic case.

Also available in 300mm/12 Inches. Code No.: 10761

**4" BRASS**

Code No. :10780

For direct reading 60 mm graduated in 1mm, made of brass.



**CALIPER****INSIDE OUTSIDE COMBINED**

Caliper for internal and external measurement made of special steel/ zinc plate.

Available in following sizes:

Length	Zinc plated	Stainless Steel
100 mm	10800	10806
150 mm	10801	10807

**INTERNAL**

For measuring internal diameter of circular and spherical objects. Available in lengths of :

Code	Length
10820	100 mm
10821	150 mm
10822	200 mm

**EXTERNAL**

Metal nickel plated for external measurements, available in lengths 100mm, 150mm and 200mm.

Code	Length
10830	100 mm
10831	150 mm
10832	200 mm

**SPHEROMETER****WITH SINGLE DISC**

Brass dial head divided in 100 parts with steel screw resting on a black painted frame with a vertical scale reading, 10-0-10 or 7-0-7.

Code	Screw pitch
10850	1 mm x 0.01 mm
10851	0.5mm x 0.005 mm

**WITH DOUBLE DISC**

With Stainless steel screw head divided in 100 parts, lead screw travel 20mm, with read out on vertical scale 10-0-10, distance between stainless steel legs approximately 40mm

Code	Screw pitch
10860	1 mm x 0.01 mm
10861	0.5mm x 0.005 mm

MICROMETER**WITH SS ROD (SUPERIOR)**

Micrometer screw gauge with stainless steel spindle, ratchet stop, brass body, metric, with lock
Supplied in wooden box.

Code	Size	Pitch
10900	25 mm	1 mm
10901	25 mm	0.5 mm

**WITH SS ROD (REGULAR)**

Micrometer screw gauge with stainless steel spindle ratchet stop brass body metric
Supplied in plastic case.

Code	Size	Pitch
10920	25 mm	1 mm
10921	25 mm	0.5 mm

**WITH STEEL ROD**

Micrometer screw gauge with ratchet stop brass body plated, threaded oxidised rod, metric
Supplied in cardboard box.

Code	Size	Pitch
10930	25 mm	1 mm
10931	25 mm	0.5 mm

**MEASURING TAPES**

Code	Measuring tapes	Length
10960	Plastic body with Key Ring	1 Mtr
10961	In metal	1 Mtr
10962	In metal	2 Mtr

**OPISOMETER**

Code No. : 10980

Comprises of a knurled wheel for measuring the length of curved lines, running on a transversely mounted threaded spindle.





VERNIER MICROSCOPE

HORIZONTAL & VERTICAL

Code No. : 11000

Horizontal and vertical scales of stainless steel. The cast iron base is fitted with levelling screws with the top machined, over which slides a metal carriage. The slide travel is 165 mm horizontally and 140 mm vertically & can be clamped at any position by means of clamping screw. Fine adjustment for final reading is done 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 is fitted with a perspex or ground glass plate for placing objects for measurement. The microscope uses Achromatic lenses. Scales are accurately divided with Vernier reading 0.02 or 0.01 mm. The unit is packed in wooden polished case with lock & key.

ADVANCE TYPE

Code No. :11010



The heavy cast base is fitted with leveling screws with the top machined over which slides a metal carriage. The slide travel 165 mm horizontally and 140 mm vertically & can be clamped at any position by means of clamping screw. Fine adjustment for final reading is done 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. Special arrangement is provided for the transverse movement of the microscope. The movement can be measured with the help of scale and vernier. The stage is fitted with a perspex or ground glass plate for placing objects for measurement. The microscope uses Achromatic lenses. Scales are accurately divided with Vernier reading 0.01 mm. It can also be used as co-ordinating microscope. The unit is packed in wooden polished case with lock & key.

SPECIAL TYPE

Mounted on a travelling carriage, fitted with 10x Ramsden eye piece with cross line graticule. Achromatic objective glass lens is of 75mm focal length. Focusing by rack and pinion. Scale graduated in half millimeter on inlaid strip of nickel silver, vernier attached. Microscope traverse 16.5cm. BASE : Heavy cast Iron. Accurately machined. Travelling carriage on the top, which can be clamped in any position. Fine motion screw for finer adjustment. Complete with case.



- | | |
|--|-----------------|
| A. Vernier reading to 0.02 mm. | Code No. :11020 |
| B. Same as above reading 0.01mm | Code No. :11021 |
| C. Same as above, but fitted with micrometer head giving direct reading to 0.01 mm | Code No. :11022 |

PULLEY**METAL**

Aluminium in metal frame, with two hooks.

Code	Pulley 50 mm Dia
11030	Single
11031	Double
11032	Triple
11033	Triple in line

Code	Pulley 38 mm Dia
11040	Single 1 hook
11041	Single 2 hooks
11042	Double parallel 2 hooks
11043	Double in line 2 hooks

Pulley in 25 mm dia are also available.

**PLASTIC**

In metal frame, with two hooks.

Code	Plastic Pulley 50 mm Dia
11060	Single
11061	Double Parallel
11062	Triple Parallel

Code	Plastic Pulley
11080	Single 25 mm dia
11081	Single 38 mm dia
11082	Double in line
11086	Triple in line

**DIFFERENTIAL TRIPLE**

Code No. : 11100

One piece aluminium, mounted in a metal frame with hook.

**BENCH CLAMP FITTING**

Code No. : 11110

Aluminium pulley diameter 50mm, in metal frame for clamping to board or bench upto 25mm thick.



▶ PHYSICS

▶ MECHANICS

▶ PENDULUM

PHYSICS



PENDULUM

SIMPLE

Code No. :11120

With iron ball about 5 cms. in dia. suspended by steel wire, clamps for altering length of the same, steel knife edge support and bracket for fixing to a shelf.

COMPOUND REVERSIBLE

Code No. :11130

A metal bar 1000x19x6 mm with holes at every 50mm along the centre line. A steel knife edge is mounted in wall bracket for suspension of the bar.

KATER

Code No. :11140

Stainless steel rod 1200 mm long, 10 mm diam. with one pair each of small & large, light & heavy masses, two steel knife edges set in adjustable holders & a metal bracket support for wall mounting.

Also available in brass chrome/ nickel plated. Code No. :11141

PENDULUM BOB WITH HOOK

Made of Brass, Lead, Copper, Iron, Aluminium.

Sizes	CODES				
	Brass	Lead	Copper	Iron	Aluminium
12 mm	11150	11155	11160	11165	11170
18 mm	11151	11156	11161	11166	11171
25 mm	11152	11157	11162	11167	11172

FLY WHEEL METAL

Code No. :11180

Cast iron, approx. 200 mm diameter, 35mm thick at rim, mounted on balanced horizontal shaft on ball bearing. The wheel is marked & a pointer is fixed on the bracket. The bracket has four holes for wall mounting.

WHEEL & AXLE WOODEN

Code No. :11190

Two wheels of about 150 mm and 50 mm diameter. Made from solid hardwood with flat bottom grooves and metal axle supplied without stand & mass.

TICKER TAPE TIMER

Code No. :11200

For the measurement of velocity & acceleration by providing dots on moving tape at $1/50$ or $1/60$ second intervals, depending on the frequency of the mains supply. Operates on 12 V. a.c. It has an electromagnet spring loaded armature which vibrates above a support table. Paper tape, drawn through guides on the table is stuck by a dotting screw, carried on the armature. A peg on the table is provided to allow full use of carbon paper disc.



TAPE FOR TICKER TIMER

Code No. :11210

9mm width, 300 meter roll



STOP WATCH

MECHANICAL TYPE

Code No. :11230

Stop Watch- non rusting, dust & damp proof chrome plated. 7 jewelled lever movement. Start, Stop & Reset function.



DIGITAL TYPE

Code No. :11220

Digital Stop Watch with LCD Display.

Display Modes :

- Normal - Minutes/ Seconds
- Split Seconds - Seconds/100th's of Second



STOP CLOCK

Code No. :11240

Smith type, stop, start and fly back action, 100mm projected dial. Entire assembly housed in metal case nicely finished. Reading 60 seconds and 60 minutes.



▶ PHYSICS ▶ MECHANICS ▶ FRICTION & FORCE



INCLINED PLANE

Code No. :11250

Made of hard wood with base 600 x 100x20 mm with pulley hinged to a wooden polished base 450x100x20 mm. The plane can be fixed at any height by clamping the wing nut. Complete with aluminium graduated arc, cylindrical metal roller 38mm diameter. Supplied with scale pan but without weight



FRICTION BOARD APPARATUS

Code No. :11260

One wooden friction board with hook & one wooden slider with balance pan & string with pulley.



BALANCE PAN

Code No. :11270

Made of light alloy, diameter 150 mm along with chains & ring .



PARALLELOGRAM OF FORCE APPARATUS

Code No. :11280

Board of dimension 65 x 50 cms along with two numbers 50mm diameter pulleys made of aluminium along with clamps for mounting at any position. Supplied with 3 hangers of iron nickle plated weighing 50 grams and 12 slotted weights of 50 grams each.



DYNAMIC TROLLEY

WOODEN

Code No. :11290

Hardwood, 300 mm long, metal reinforced ends three low friction ball bearing wheels, quick release triple impulse spring, 4 removable metal legs to enable stacking of trolleys, mass 0.9 kg. Approx.

SPECIFIC GRAVITY BOTTLE

Available in various sizes in neutral or borosilicate glass.

Sizes	CODES	
	Neutral glass	Borosilicate glass
10 ml	11500	11510
25 ml	11501	11511
50 ml	11502	11512
100ml	11503	11513

**DISPLACEMENT VESSEL**GLASS

Code No. : 11520

For specific gravity experiments made from neutral glass or borosilicate glass with overflow spout . Capacity : 250 ml

COPPER

Code No. :11525

For specific gravity experiments displacement vessel copper with overflow spout

Size dia 75 x height 100 mm

METAL PAINTED

Overflow vessel, metal, hammertone finish with overflow spout in :

SIZE	CODE
Large	11530
Medium	11531

**YOUNG'S MODULUS OF WIRES APPARATUS**SEARLE'S PATTERN

Code No. :11550

The apparatus comes with black stove-enamel finish. Consists of spirit level mounted in two rectangular metal frame. At one end is micrometer screw & the other end of spirit level is pivoted in second frame. Micrometer with vertical scale & vernier reading 0.01 is provided with ceiling bracket having two self-centering chucks & tension weight.





HOOKE'S LAW APPARATUS

Code No. :11560

To demonstrate that the amount of elongation or bending of a spring is directly proportional to the force that is applied. Consist of a 12 cm long mirror scale with support spring, weight holder and slotted weight of 250 gm capacity.



SET OF GEOMETRICAL MODELS

Code No. :11570

Consists of sixteen pieces of various geometrical models and figures. Made of hardwood and supplied in wooden box.



BUCKET AND CYLINDER

Code No. :11580

To demonstrate Archimedes principle, all brass, bucket with suspension loop at top and a hook at bottom, with the cylinder having a suspension hook at top. Cylinder is 50 x 16mm dia, overall length including hook and suspension loop is 110mm approx.

HYDROMETER

For specific gravity. Shot loaded. Overall length approx. 250mm, sub-divided in 0.01.



RANGE	CODE
0.70 to 1.00 / 0.01	11590
1.0 to 2.00 / 0.01	11591
0.7 to 2.00 / 0.01 (UNIVERSAL)	11592

HARE'S APPARATUS

Code No. :11600

For comparing the density of liquids by measuring the height of two columns of liquid produced by applying suction to the short centre limb. Glass tube 45 cm of corning glass mounted on graduated wooden stand.



HOPE'S ARRARATUS

Code No. :11610

To show maximum density of water at 4°C. It consists of a sheet metal cylinder with two tubes in the upper & lower regions for inserting thermometers. Mounted on a base & encircled midway by an outer trough for holding mixture of ice & salt..

**NICHOLSON'S HYDROMETER**

Code No. :11620

For density experiments on solids & liquids, hollow metal body, upper loading pan & weighted lower loading pan, made of brass.

**FORCE PUMP**

Code No. :11630

Working model made from clear corning glass 40 x 15 cms approximately.

**LIFT PUMP**

Code No. :11640

Working model made from clear corning glass with overall height of 35 cms approximately.

**PRESSURE PUMP**

Code No. :11650

Comprises of glass flask with holes and glass piston. Made from corning glass.

**FILTER PUMP GLASS**

Code No. :11660

With riffled inlet & outlet tube. The pump vacuum nozzle is 7 mm made from corning glass.





BERNOULLI TUBE APPARATUS

Code No. : 11670

Demonstrates the Bernoulli effect produced by water flow. Tube comes with central constriction, a constant bore gradient tube, 6 lengths glass tubings, 2 swan neck outlet tubes & 8 pre-cut lengths of rubber connecting tubings. The two flow tubes, each 500 x 13 mm length, 25 x 150 mm spacing, extended to form 500 mm manometers with the length of glass tubings.



LIQUID LEVEL APPARATUS

Code No. : 11680

To demonstrate that the pressure in liquid is transmitted equally in all directions. Made from corning glass.



CAPILLARY TUBE APPARATUS

Code No. : 11690

For demonstrating the relationship between capillary pressure and the bore diameter of the capillary tube. The Apparatus comprises of a metal frame, the base of which takes the form of a trough 115x 40x 10 mm. The upper part of the frame supports six capillary tubes, each of a different bore, their lower ends resting in the bottom trough. The trough is filled with water & the difference in the heights of the resulting columns of water in the tubes is readily apparent. Overall frame height: 90 mm & capillary tubes length: 150 mm.



MEGDEBURG HEMISPHERE

To demonstrate the effect of atmospheric pressure, fitted with stopcock and handles. Made of brass and Nickel plated.

Diameter	Code
62 mm	11700
75 mm	11701

BAROMETER**ANEROID**

Code No. :11900

A circular, 10-cm dial is graduated 960 -1065 x 1hPa. Also marked in inches and mm. Plastic body with resetable index pointer. Can be wall-mounted.

**ANEROID DEMONSTRATION**

Code No. :11920

With a transparent, plastic case for demonstration. With rubber bellows to show the effect of increasing or decreasing pressure.

**FORTIN'S**

Code No. :11930

Mercury barometer made of brass with plated and painted finish mounted on polished wooden base, mercury thermometer-10 to 50 x 1°C. Barometer is suitable for altitude upto 600 metres. The dual scale reads 675 to 810 mm, 26" to 32" in 1 mm and 0.05" respectively, vernier reading 0.05mm and 0.002" provided with adjustable knob. The barometer tube, cistern and scale covering glass are of corning glass. Supplied without mercury.

**RAIN GAUGE****COPPER**

Code No. :11940

It comprises of a copper metal funnel 12.5 cm x 25 cm, with an inner receiving & outer body cylindrical with 20 x 7 cm & 40 x 12.5 cm diameter respectively and a glass measuring cylinder graduated 0 to 10mm x 0.1 mm(100 divisions)

**SYMON'S PAINTED**

Code No. :11950

It comprises of a Galvanised Iron metal funnel 12.5 cm x 25 cm with brass collar which fits into the top and drains into an inner cylinder. When the inner cylinder fills the vessel collects the overflow. Complete with glass measure.

**WIND VANE**

Code No. :11960

Fully balanced, mounted on bearing on steel pivot with cut out of a weather cock on top.





SONOMETER

(3 WIRE TYPE)

Code No. :12100

Comprising a wooden resonance box, with two meter rules (scale) 1000 x 1mm, having metal fittings. Complete with two moveable bridges, pulley and three different wires. Without stand and weights.



ORGAN PIPE

Code No. :12110

Made from varnished wood overall length 760mm



POWELL'S WAVE MACHINE

Consists of a number of eccentric disc & series of metal rods to demonstrate Transverse & longitudinal motion. Eccentric discs supporting a series of metal rods on revolving the handle shows transverse waves. Longitudinal waves are obtained with bent rods running in metal guide.

Wave Machine	Code
12 pulley	12120
18 pulley	12121
24 pulley	12122

WAVE FORM HELIX

Code No. :12130

Close wound, steel wire helix of 19 mm dia. Closed length 3 meter & extended length 9 meters with ends looped. Photo not shown.



CLINOSTAT

Code No. :12140

To run 24 hrs. in vertical or horizontal position to carry weights with clock movement fitted on a heavy metal stand.

WHIRLING TABLE

Code No. :12150

Stand for use in vertical or horizontal position with height of 43 cms, fitted with handwheel and wire helix belt drive to pulley. Suitable for use with Savart wheel and disc and adapter to accommodate colour discs.



TUNING FORK**ALUMINIUM (TOP QUALITY ,SET OF 8)**

Code No. :12160

Top quality, frequency as in German type. Supplied in plastic case.
Individual codes for different tuning forks are mentioned below:

Frequency Hz	Note	Code
256	C	12161
288	D	12162
320	E	12163
341	F	12164
384	G	12165
426	A	12166
480	B	12167
512	C	12168

**ALUMINIUM SET OF 8 (SUPERIOR)**

Code No. :12170

Superior quality, frequency as in German type. Supplied in plastic case.
Individual codes for different tuning forks are mentioned below:

Frequency Hz	Note	Code
256	C	12171
288	D	12172
320	E	12173
341	F	12174
384	G	12175
426	A	12176
480	B	12177
512	C	12178

**C.P. SET OF 8 (REGULAR)**

Code No. :12180

Regular quality, frequency as in German type. Supplied in velvet case.
Individual codes for different tuning forks are mentioned below:

Frequency Hz	Note	Code
256	C	12181
288	D	12182
320	E	12183
341	F	12184
384	G	12185
426	A	12186
480	B	12187
512	C	12188

**SET OF 13**

Code No. :12190

Tuning fork in special steel giving chromatic scale of C3 & C4 with each fork marked with its pitch & numbers of vibrations. Supplied in a velvet box.



▶ PHYSICS ▶ SOUND ▶ TUNING FORK & RIPPLE TANK



STANDING MODEL

Made of special steel with frequency from 128 to 512 cycles per second. Also available with frequency 128 cycles/sec.

Frequency Hz	Code
128	12200
256	12201
288	12202
320	12203
341	12204
384	12205
426	12206
480	12207
512	12208



ELECTRICAL

Code No. :12210

Prong size : 300 x 25 x 10 mm

Electro magnetically operated working with 6 volt D.C. supply. Vibration amplitude can be varied by adjusting the position of the electro magnet.



WITH STAND ON RESONANCE BOX

Threaded shanks, mounted on a common resonance box and having frequencies of C3(256), E(320), G384, C4(512), Hz. Size of box 285 x 115 x 63mm. approx., Complete with hammer.

Tuning Fork on Resonance Box	Code
Single	12220
Double	12221
Triple	12222
Quadruple	12223



WIRE HELIX (SLINKY)

To illustrate wave motion, flat section steel wire in helical coil.

Diameter	Length	Code
75 mm	75 mm	12230
75 mm	100 mm	12231



RIPPLE TANK

Code No. :12240

To demonstrate the rectilinear & circular propagation, refraction, diffraction & interference of wave phenomena using ripple on water surface with wave generator and light source. The frame work of the tank is made of seasoned material and is provided with four adjustable legs. The level of the tank can be set easily. The base is of glass plate. A parabolic reflector and lamp are adjustable for accurate adjustment. The wave generator works on 220V/50Hz electric supply. Complete with a simple rheostat, crocodile clip and complete working instructions.

MIRROR**CONCAVE & CONVEX**

Spherical, optically worked and back silvered, unmounted

F.Length in mm	Codes			
	Convex Mirror		Concave Mirror	
	50 mm dia	75 mm dia	50 mm dia	75 mm dia
100	12400	12410	12420	12430
150	12401	12411	12421	12431
200	12402	12412	12422	12432
300	12403	12413	12423	12433

**STRIPS**

Back silvered with protective coating unmounted.

Dimensions in mm	Codes
75 x 25	12450
75 x 50	12451
75 x 75	12452
100 x 25	12453
150 x 25	12454
150 x 50	12455

**LENS**

Spherical, optically worked glass, with ground edges, highly polished.

F.L.length in mm	Codes			
	Concave lens		Convex lens	
	50 mm dia	75 mm dia	50 mm dia	75 mm dia
50	12460	12470	12480	12500
100	12461	12471	12491	12501
150	12462	12472	12492	12502
200	12463	12473	12493	12503
250	12464	12474	12494	12504
300	12465	12475	12495	12505
500	12466	12476	12496	12506
1000	12467	12477	12497	12507



F.L.length in mm	Codes					
	Double Concave lens			Double Convex lens		
	38 mm dia	50 mm dia	60 mm dia	38 mm dia	50 mm dia	60 mm dia
100	12540	12550	12560	12580	12590	12600
150	12541	12551	12561	12581	12591	12601
200	12542	12552	12562	12582	12592	12602
250	12543	12553	12563	12583	12593	12603
300	12544	12554	12564	12584	12594	12604
500	12545	12555	12565	12585	12595	12605
1000	12546	12556	12566	12586	12596	12606

**WATCH GLASS**

Polished, ground edges, made from selected glass sheet.

DIA. Cms	5	6	7.5	9	10	12.5	15
CODE	22700	22701	22702	22703	22704	22705	22706

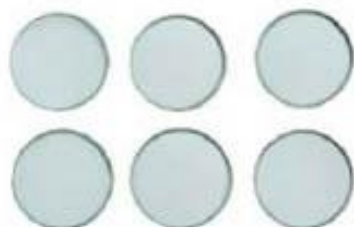




CYLINDRICAL

Optically worked faces, ground edges, white glass, well polished, size : 50 x 45 mm

F.L. length in mm	Codes for Cylindrical lens of Sizes 50 x 45 mm			
	BiConvex	BiConcave	Plano Convex	Plano Concave
60	12610	12620	12630	12640
75	12611	12621	12631	x
100	12612	12622	12632	12642
150	12613	12623	12633	12643
200	12614	12624	x	x
300	x	x	x	12645



SET OF 6

Code No. : 12650

Comprises of Converging concavo-convex, Diverging concavo-convex, Double concave, Plano concave, Double Convex, Plano Convex . In 50 mm diameter with ground and polished faces and ground edges . Supplied in a box.



MAGNIFIER

SUPERIOR QUALITY

Magnifier (Reading Glass) with handle. In nickel plated metal mount with bakelite handle, individually packed.

Code	Diameter	Focal length	Magnification
12660	50 mm	100 mm	3.5 x
12661	60 mm	150 mm	2.5 x
12662	60 mm	200 mm	2.25 x
12663	75 mm	150 mm	2.5 x
12664	75 mm	200 mm	2.25 x
12665	100 mm	150 mm	2.5 x
12666	100 mm	200 mm	2.25 x



REGULAR QUALITY

Magnifier with plastic moulded frame with plastic handle

Diameter in mm	38	50	62	75
Codes	12670	12671	12672	12673



SINGLE, DOUBLE & TRIPLE

Magnifier folding. Pocket type with 25mm diameter lens, mounted in plastic case.

Magnifier	Magnification	Codes
Single	3.5x	12680
Double	7x	12681
Triple	10x	12682



FOLDING IN POUCH

Code No. : 12690

Single, diameter 40 mm, magnification 3.5x.

IN FOLDING BOX

Pocket type. A pair of plano convex lenses arranged to provide 10 x magnification in plastic lens holder with anodised aluminium cover. Available in :

Magnifier Folding Box	Code
Superior	12700
Regular	12701



ON TRIPOD STAND

Magnifiers seated with adjustable screw top. Diameter 38 mm

Magnification	Code
4x	12710
5x	12711
6x	12712



FOR THREAD COUNTERS

Linen Prover, Double fold lens system.

Diameter	Code
10 mm	12720
20 mm	12721



FOR WATCH MAKERS

Code No.: 12730

Plastic lens, comes in black plastic eye-grip frame. Magnification 3.5x With a focal length of 75 mm & diameter 25 mm.



BLOCK RECTANGULAR GLASS / ACRYLIC

For refraction experiments. Polished on all sides, edges, slightly Beveled and glass is free from bubbles.

Size in mm			
Glass	Codes	Acrylic	Codes
75x50x12	12740	75x50x20	12750
75x50x18	12741	75x50x25	12751
100x60x18	12742	100x60x20	12752
115x65x18	12743	100x60x25	12753
125x65x18	12744	115x60x20	12754
		115x60x25	12755





PRISM

EQUILATERAL- GLASS :

Non-optically worked with polished faces, edges slightly bevelled.

Sizes in	Equilateral prism 60 x 60 x 60 Deg.					
	Glass			Acrylic		
	Regular Quality	Superior Quality	Extra white Quality	Regular Quality	Superior Quality	Extra white Quality
25	12760	12770	12780	12790	12800	12810
38	12761	12771	12781	12791	12801	12811
50	12762	12772	12782	12792	12802	12812



RIGHT ANGLE- GLASS :

Right angled, Non-optically worked with polished faces, edges slightly bevelled.

Sizes in mm	Right angle prism 90 x 45 x 45 Deg.			
	Glass		Acrylic	
	Regular	Superior	Regular	Superior
38	12830	12835	12840	12845
50	12831	12836	12841	12846

PRISM FOR SPECTROMETER:

Optically worked glass prism. Equilateral with two faces polished 32x32mm height.

Material	Code
Borosilicate crown glass	12850
Dense flint glass prism	12851
Extra dense flint glass prism	12852
Double extra dense flint	12853



BLOCK SEMICIRCULAR

GLASS / ACRYLIC

For refraction experiments. Polished on all sides, edges, slightly Beveled and glass is free from bubbles.

Glass block		Acrylic block	
Dia x thickness	Codes	Dia x thickness	Codes
90x18	12860	90x20	12870
100x18	12861	90x25	12871
100x50	12862	100x20	12872
90x45	12863	100x25	12873

STROBOSCOPE

Code No.: 12880

For optically slowing or completely stopping any object in motion and for measuring the frequency of periodic motion. Simple model, hand driven to show the student stroboscopic effects.



PIN HOLE CAMERA

Code No. :12885

To demonstrate image produced by small aperture. Comprises of a polished wooden box with a hole at one end and crown glass screen at the opposite end.

SPECTROMETERINTERMEDIATE

Code No. :12890

Reads to 1 minute of arc. 150mm diam. Scale with protective cover and acrylic windows to read verniers is fixed to the telescope movement. The table is attached to the double ended verniers reading to 1 minute of arc with magnifiers provided for the purpose. Both telescope and table rotations have fine adjustments. Collimator is on a fixed pillar with 175 mm focal length achromatic objective of 25mm aperture and an adjustable slit. The telescope is on a movable pillar with 175mm achromatic objective x8 Ramsden eye-piece and glass crossing graticule. Both telescope and collimator have rack and pinion focussing and their optical axes can also be adjusted. Prism table has lines to assist prism placement and has three levelling screws. With prism clamp diffraction grating holder & one tommy bar for axis adjustment, in a wooden case.

STANDARD

Code No. :12900

Reads to 6 minutes of arc (0.1°) 170 mm diam. Metal scale graduated $360^\circ \times 1^\circ$, independently rotatable, with locking screw, vernier attached to the telescope reads to 0.1° (6 minutes of arc) Collimator is mounted on a fixed pillar, with an achromatic objective of 150 mm focal length and 21 mm aperture and has an adjustable slit 6mm long. The telescope is on a movable pillar, with a fine adjustment screw, an achromatic objective of 170mm focal length, 21 mm aperture, Ramsden eye-piece and glass crosswire graticule. Both collimator and telescope have spiral focussing system and have axis adjusting arrangement. The table has 3 levelling screws, with lines marked to assist prism placement. With prism and grating holders, one small screw driver and one tommy bar for axis adjustment. Without prism in wooden case.

**NEWTON'S COLOUR DISC**

Code No. :12910

For demonstration of composition of white light. 150 mm multi-coloured disc mounted on metal stand, rotated by a hand wheel.

**OPTICAL BENCH**ON WOODEN BASE

Code No. :12920

Comprising of a wooden baseboard 1.12 m x 115 mm with 1 metre scale divided in millimeters. Fixed along the front edge and complete with the accessories.

METAL (SUPERIOR)

Code No. :12930

One metre long, single square steel rod accurately graduated fitted on two sturdy metal feet with levelling screws. Four special designed heavy sliders having fine index marks. Two of the sliders are having fine transverse slow motion arrangement complete with four accessories (two lens holders and two optical pins).



Also available in 1.5 meters Code No. :12931

▶ PHYSICS ▶ OPTICS & LIGHT ▶ RAY BOX, TELESCOPE

WITH DOUBLE ROD

Code No. :12940

One meter long, double steel rod accurately graduated, other details are same as single rod optical bench.



RAY BOX

Code No. :12950

A ventilated lamp house having an open front with extended sides finned externally for heat dissipation and vertical internal grooves to accommodate a slit plate and a cylindrical lens. It has a light source comprising a 12 volts lamp in a holder with one metre of twin flex having banana plugs. Complete with metal plate having single and triple slits and whitened on one side and other side black matt. With instructions and without lens.



PERISCOPE

Code No. :12960

Made of seasoned wood, nicely polished.



RESONANCE APPARATUS

Code No. :12970

chrome plated brass tube, 100 cm long with a meter scale mounted on metal stand. Complete with brass reservoir 250 ml and rubber tubing.



READING TELESCOPE MODEL

Code No. :12980

Consists of a achromatic objective of f.l. 178 mm, clear aperture 23 mm and 8X Ramsden eye piece with a 90 deg. Cross line reticule. The focussing is done by rack & pinion mechanism with a range from 1000 mm to infinity.



MAGNET**BAR SUPERIOR(ALNICO)**

In pairs, very strong, with special keepers, packed in beautiful card box.

Sizes	Codes
50 x15x 10 mm	13200
75 x15x 10 mm	13201
100x 15x 10 mm	13202

**BAR SUPERIOR**

With keepers. Dimensions are nominal. Supplied in

Sizes	Codes
50 x 12 x 8 mm	13210
75 x 12 x 8 mm	13211
100 x 12 x 8 mm	13212

**BAR CHROME STEEL**

With keepers. Dimensions are nominal. Supplied in cardboard boxes.

Sizes	Codes
50 x 12 x 5 mm	13220
75 x 12 x 5 mm	13221
100 x 12 x 5 mm	13222
125 x 12 x 5 mm	13223
102 x 12 x 5 mm	13224

**HORSE-SHOE**

Steel, red spray painted, with keeper. Sizes are given in the table below:

Length	Codes
50 mm	13230
75 mm	13231
100 mm	13232
150 mm	13233

**U-SHAPE**

Available in Alnico superior & regular quality with following sizes:

Alnico Superior Quality		Regular Quality	
Sizes	Codes	Sizes	Codes
37x13x10 mm	13240	50 mm	13250
50x13x10 mm	13241	75 mm	13251
75x13x10 mm	13242	100 mm	13252



**CYLINDRICAL**

In pairs, very strong, with special keepers, packed in beautiful card box.

Cylindrical magnets	
Sizes in mm	Codes
50x6	13260
75x6	13261
100x6	13262

**RING CERAMIC**

Magnetised.

Sizes	Codes
32 x 18 x 8 mm	13270
32 x 18 x 6 mm	13271
36 x 18 x 8 mm	13272
36 x 18 x 6 mm	13273
45 x 18 x 11 mm	13274
46 x 18 x 9 mm	13275

**FLOATING RING**

Code No. : 13280

Comprises five ceramic ring magnets, 32 mm external diameter to demonstrate magnetic repulsion and a wooden rod on a base, overall height 160 mm. If the magnets are placed on the rod so that they mutually repel, the 'floating' effect is readily apparent.

**ELECTRO MAGNET U FORM**

Soft iron, with armature and carrying hook, wound with insulated copper wire and provided with barrel connectors for use on 3-6 volt d.c.

Length in mm	75	100	150
Code	13290	13291	13292

MAGNETISING & DEMAGNETISING COIL

Code No. :13300

Low voltage, comprises a solenoid wound with insulated copper wire suited for magnetising and demagnetising ordinary magnets, iron bars, strips etc. and mounted on a base, complete with switch and 4 mm, terminals.

Magnetising by A.C. or D.C.

Demagnetising by D.C only



MAGNETOMETER

Code No. :13310

Consists of a stout metal box, 100 mm diameter mounted on wooden base with meter scale. Aluminium dial graduated in degrees 0-90deg in each quarter of dial, anti parallelax mirror slot, but made of bakelite case .



MAGNETIC NEEDLE

NEEDLE ONLY

Carbon steel with brass cup bearing for pivoting.

Length	50 mm	75 mm	100 mm
Code	13320	13321	13322



NEEDLE ON STAND

For magnetic needles, with plastic base and metal pillar which supports a steel needle pivot, overall height 100 mm. Available length of needle are given below:

Length	50 mm	75 mm	100 mm
Code	13330	13331	13332



DIP NEEDLE

10 CM.LONG GRADUATED QUADRANT

Code No. : 13340

Steel needle Brass Stand, graduated quadrant fully rotatable on metal base marked every 45 degree with special needle, 10 cm.



DIP CIRCLE

Code No. :13350

The case is made of non-magnetic cast alloy, duco painted and has easily removable plate glass window and rotates fully on a heavy base, its rotation being measured by a brass silvered dial reading 0-360°. It is fitted with levelling screw. Accurately balanced magnetic needle, strongly magnetised is fitted with hardened steel pivot working in agate cup bearings. The needle can be easily removed for reversal. Inclination scale is of silvered brass graduated in degrees 0 - 90° four times.



▶ PHYSICS ▶ MAGNETISM ▶ COMPASS & COIL



COMPASS

PLOTTING

Code No. : 13360

With two clear glass faces and needle pivoted between top and bottom glass plates, Size 18mm diameter. Pack of 10 pieces.



ALUMINIUM REGULAR

With dial marked with principal points of the compass, one glass face only in plastic/aluminium case.

Sizes in mm	20	25	38	50	75
Codes	13370	13371	13372	13373	13374



ALUMINIUM SUPERIOR

Code : 13380

Magnetic needle with metal dial body. Marked aluminium body 43 mm dia superior.



MAGNETOMETER COMPASS

Code No. :13400

A plastic box with aluminium dial graduated in 0-90° in each quarter, anti-parallax mirror and steel pivot. The short magnetic needle has a synthetic sapphire bearing and a light aluminium pointer designed for precise readings and maximum damping. The compass box has a hollow circular cavity to fit tangent galvanometer stand or deflection magnetometer base.



DEMONSTRATION INDUCTION COIL

Code No. :13420

Primary coil of heavy gauge enamelled copper wire has resistance 0.5 ohms wound on former 121 x 35 mm, length x diameter. Secondary coil same as primary with resistance 100 ohms on former 110 x 82 mm, length x diameter. Both coils fitted with 4mm sockets, Iron core 125 x 16 mm. length x diameter..

INDUCED CURRENT APPARATUS

Code No. : 13430

Consisting of a primary coil of insulated copper wire wound upon cylinders with terminals, secondary coil wound upon cylinder into which primary fits. A soft iron core fits the cylinder of the primary. Complete with terminals.



WIMSHURT MACHINE

Code No. : 13450

250 mm dia discs with radial aluminium segments driven in opposite directions by hand wheel complete with layden jar.



MAGNETIC FORCE APPARATUS

Code No. : 13460

Comprises of a u - magnet & a brass axle with two wheels which can roll on brass rails positioned on the outer sides of the magnet, to show force on the brass axle.



BARLOW'S WHEEL

Code No. : 13470

To illustrate the motion of a movable conductor carrying current in a magnetic field. Star shaped copper disc rotates vertically between horse shoe magnet on wooden base having groove for mercury, disc adjustable vertically on metal pillar.



▶ PHYSICS

▶ ELECTRICITY

▶ POTENTIOMETER &
WHEATSTONE BRIDGE

PHYSICS



WHEAT STONE BRIDGE

4 GAPS

Code No. :13700

Four gap bridge plated brass strips mounted on polished hardwood base. Terminals with 4mm. Gaps are closed by removable plated brass strips which are held in position by the terminals. Sockets are provided to reduce unwanted resistance to a minimum. The 24SWG constantan wire is stretched along the top of a metre scale subdivided into millimeters and numbered every centimeter. The ends of the wire are securely clamped to the terminating strips to reduce end errors to a negligible level. Supplied with jockey of approx. dimensions 1.10 x 79 x 48 mm.



POTENTIO METER

1 WIRE

Code No. :13710

A one metre long single resistance wire passes over a metre scale and is firmly clamped to stout brass end-plates, on wooden base. Complete with knife-edge jockey.



4 WIRE

Code No. :13720

On polished plywood base with white sunmica sheet, having 4 wires of 24 SWG constantan wire connected in series give effective length of four metre, two bakelite terminals lock type and wood rule graduated 0-100 and 100-0 cm x 1 mm. The wires are stretched over pulleys and rigidly fixed to prevent any loosening or misalignment, with end corrector strips eliminating zero end error. With multiple metallic jockey having four correctly aligned, independent spring contacts each operated by its own key knob. Jockey slides on rods.



PENCIL JOCKEY

Code No. :13730

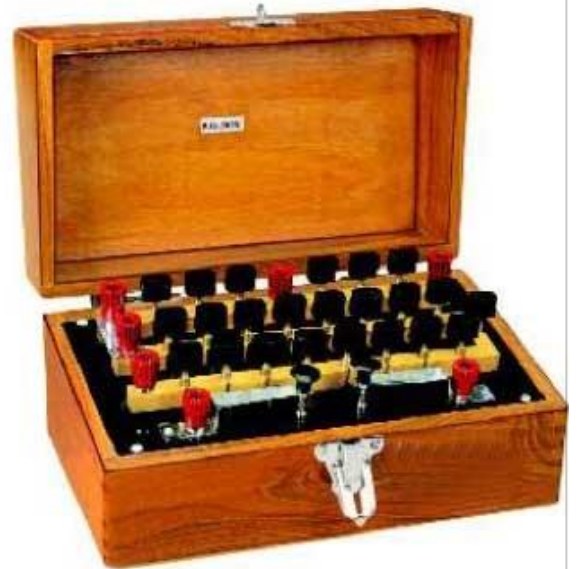
With brass metal knife edge, ebonite handle and terminal at top over all length 100mm

POST OFFICE BOX

PLUG TYPE "A GRADE"

Code No. : 13740

Coils of manganin wire, double silk covered are wound non-inductively and have a negligible temperature co-efficient. Three pairs of ratio arms are each 10,100, 1000 ohms and resistance arms contains 16 coils from 1 to 5000 ohms with infinity plug (total value 11,110 ohms). Two spring keys having special contact for battery and galvanometer are biased off. Accuracy of coils 100 to 500 ohms $\pm 0.05\%$ and of the rest other coils $\pm 0.1\%$



RESISTANCE BOX

PLUG TYPE

In polished teak wood box and bakelite panel figured in white. Split brass contact blocks hold precision cut, interchangeable plug having moulded black bakelite, fluted tops. Coils of constantan wire, double silk covered are wound non-inductively and have a negligible temperature co-efficient. Coils are connected with double nut system. Accuracy $\pm 0.1\%$.

Range of ohms	Total ohms	Codes
1 to 50	110	13750
1 to 100	210	13751
1 to 500	1110	13752
1 to 1000	2110	13753
1 to 5000	11110	13754



▶ PHYSICS ▶ ELECTRICITY ▶ RHEOSTATS



RHEOSTAT PLASTIC LEG

Diameter 43 mm, current carrying capacity from 0.3 to 2.8 amps.

Amps	Length in mm											
	150 mm		200 mm		250 mm		300 mm		400 mm		500 mm	
	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes
2.8	19	13770	28	13785	38	13801	48	13820	66	13836	86	13855
2.3	26	13771	41	13786	56	13802	71	13821	102	13837	128	13856
1.8	47	13772	70	13787	93	13803	116	13822	160	13838	210	13857
1.6	64	13773	96	13788	125	13804	160	13823	225	13839	290	13858
1.4	82	13774	120	13789	160	13805	200	13824	285	13840	360	13859
1.2	115	13775	170	13790	230	13806	290	13825	400	13841	500	13860
1	148	13776	225	13791	295	13807	365	13826	520	13842	675	13861
0.8	200	13777	300	13792	400	13808	500	13827	700	13843	925	13862
0.6	345	13778	510	13793	676	13809	835	13828	1165	13844	1500	13863
0.5	500	13779	750	13794	1000	13810	1250	13829	1800	13845	2300	13864
0.4	840	13780	1250	13795	1650	13811	2270	13830	2900	13846	3750	13865
0.3	1350	13781	2100	13796	2350	13812	3600	13831	5100	13847	6750	13866



RHEOSTAT BAKELITE LEG

Diameter 43 mm, current carrying capacity from 0.3 to 8.0 amps.

Amps	Length in mm											
	150 mm		200 mm		250 mm		300 mm		400 mm		500 mm	
	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes
8	1.5	13870	2.5	13890	3.5	13910	4.5	13930	6.5	13950	86	13970
6.5	3	13871	4.4	13891	6	13911	7.5	13931	10.5	13951	13	13971
5	4.5	13872	6.5	13892	9	13912	11	13932	15	13952	20	13972
4.2	8	13873	12	13893	16	13913	20	13933	28	13953	36	13973
3.3	11	13874	16	13894	22	13914	27	13934	37	13954	50	13974
2.8	15	13875	22	13895	29	13915	36	13935	50	13955	64	13975
2.3	23	13876	34	13896	45	13916	56	13936	80	13956	100	13976
1.8	36	13877	55	13897	74	13917	92	13937	128	13957	165	13977
1.6	50	13878	75	13898	100	13918	125	13938	175	13958	225	13978
1.4	64	13879	96	13899	128	13919	160	13939	220	13959	290	13979
1.2	89	13880	135	13900	180	13920	225	13940	315	13960	395	13980
1	115	13881	175	13901	235	13921	290	13941	405	13961	515	13981
0.8	160	13882	240	13902	320	13922	400	13942	560	13962	720	13982
0.6	270	13883	400	13903	540	13923	670	13943	930	13963	1200	13983
0.5	400	13884	600	13904	800	13924	1000	13944	1400	13964	1800	13984
0.4	660	13885	975	13905	1300	13925	1625	13945	2275	13965	2950	13985
0.3	1150	13886	1700	13906	2250	13926	2850	13946	3950	13966	5150	13986

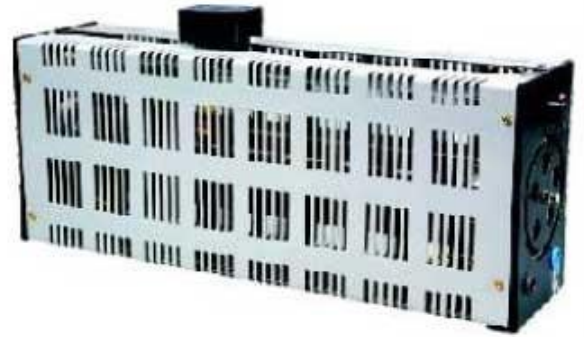
PHYSICS

RHEOSTAT

METAL LEG (WITH COVER)

Diameter 43 mm , current carrying capacity from 0.8 to 12 amps. Single tube, for use with high voltage upto 220 V. fitted with 4 mm socket terminals.

Resistance in ohms	Current in amps	Codes
3	12	14000
10	8	14001
33	4.4	14002
100	2.5	14003
330	1.4	14004
1000	0.8	14005



METAL LEG

Diameter 43 mm, current carrying capacity from 0.3 to 8.0 amps.

Amps	Length in mm											
	150 mm		200 mm		250 mm		300 mm		400 mm		500 mm	
	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes	Resistance in ohms	Codes
8	1.5	14020	2.5	14040	3.5	14060	4.5	14080	6.5	14100	86	14120
6.5	3	14021	4.4	14041	6	14061	7.5	14081	10.5	14101	13	14121
5	4.5	14022	6.5	14042	9	14062	11	14082	15	14102	20	14122
4.2	8	14023	12	14043	16	14063	20	14083	28	14103	36	14123
3.3	11	14024	16	14044	22	14064	27	14084	37	14104	50	14124
2.8	15	14025	22	14045	29	14065	36	14085	50	14105	64	14125
2.3	23	14026	34	14046	45	14066	56	14086	80	14106	100	14126
1.8	36	14027	55	14047	74	14067	92	14087	128	14107	165	14127
1.6	50	14028	75	14048	100	14068	125	14088	175	14108	225	14128
1.4	64	14029	96	14049	128	14069	160	14089	220	14109	290	14129
1.2	89	14030	135	14050	180	14070	225	14090	315	14110	395	14130
1	115	14031	175	14051	235	14071	290	14091	405	14111	515	14131
0.8	160	14032	240	14052	320	14072	400	14092	560	14112	720	14132
0.6	270	14033	400	14053	540	14073	670	14093	930	14113	1200	14133
0.5	400	14034	600	14054	800	14074	1000	14094	1400	14114	1800	14134
0.4	660	14035	975	14055	1300	14075	1625	14095	2275	14115	2950	14135
0.3	1150	14036	1700	14056	2250	14076	2850	14096	3950	14116	5150	14136

PHYSICS

ELECTRICITY

RESISTANCE COIL & INDUCTION COIL

RESISTANCE COILTRANSPARENT

Non-inductively wound double silk covered, constantan coils on plastic rod enclosed in transparent plastic tube with two terminals and values are figured in white. Accuracy $\pm 0.2\%$ rating 1 watt. Individually.

Range of ohms	Codes	Range of ohms	Codes
0.1	14150	5	14155
0.2	14151	10	14156
0.5	14152	20	14157
1	14153	50	14158
2	14154	100	14159

BOBBIN TYPE

In bakelite case with 4mm socket captive head terminals. Bobbin non inductively wound with double silk covered constantan wire.

Range of ohms	Codes	Range of ohms	Codes
0.1	14170	5	14175
0.2	14171	10	14176
0.5	14172	20	14177
1	14173	50	14178
2	14174	100	14179

RECTANGULAR SUPERIOR

In black plastic rectangular case, with two 4 mm socket terminals, accuracy $\pm 0.5\%$

Range of ohms	Codes	Range of ohms	Codes
0.1	14190	5	14195
0.2	14191	10	14196
0.5	14192	20	14197
1	14193	50	14198
2	14194	100	14199

INDUCTION COIL

Box form, coils are wound from insulated copper wire and paraffin wax insulation is provided throughout with condenser, in polished case. A fully adjustable trembler system is incorporated & spark suppression capacitors are housed in a base. A pair of pointer electrodes are supplied with the instrument, the pointer electrode having an insulating handle for adjustment of the spark gap. Low voltage input is via a pair of baseboard mounted 4mm. sockets.

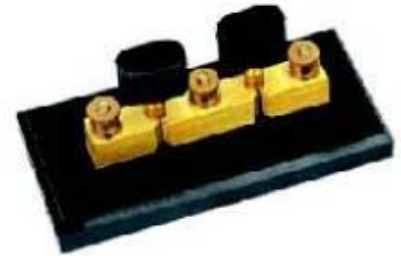
Spark in air in	Codes	Spark in air in	Codes
10mm	14210	50mm	14214
15mm	14211	75mm	14215
20mm	14212		
37mm	14213		

PHYSICS

PLUG KEY**TWO WAY**

Code No. : 14230

Comprising three brass blocks fitted with plated brass 4 mm, socket terminals and mounted on a moulded bakelite base. Two accurately tapered plugs fluted plastic tops are supplied and fit into the holes between the blocks providing contacts with very low resistance.

**ONE WAY**

Code No. : 14231

Comprising two brass blocks fitted with plated brass 4 mm. Socket terminals and mounted on a moulded base. An accurately tapered plug with a fluted plastic top is supplied and fits into the hole between the block providing a very low contact resistance.

**CONTACT KEY SINGLE**

Code No. : 14240

A spring arm, press knob, contact stud and a connecting strip with two 4 mm terminals on plastic base of 100 x 60 mm size.

Also available contact key double Code No: 14241

**REVERSING SWITCH**

Code No. : 14250

To change polarity rapidly. A plastic bar with two terminals and two phosphorus bronze brushes is pivoted to rotate over two contact strips so that its rotation reverses polarity of connections on the base.

**KNIFE SWITCH****KNIFE SWITCH SINGLE**

Code No. : 14260

Low voltage, double pole double throw, may be used as changeover switch with appropriate connections, moulded base with plated spring metal contact and screw connectors.

**KNIFE SWITCH DOUBLE**

Code No. : 14261

Low voltage, single pole double throw. Moulded base with plated spring metal contacts and screw connectors.





MOTOR OPEN MODEL

Code No. : 14270

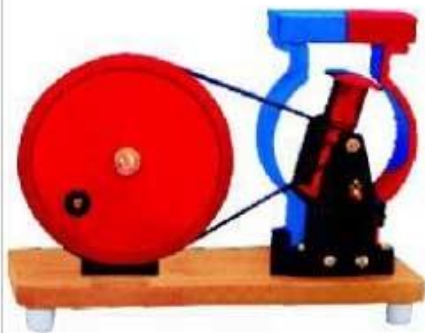
Open construction, shows all parts, operated by 4-6 V battery. Mounted on a wooden base. Can be fitted with Newton's colour disc.



DEMONSTRATION MOTOR ST. LOUIS

Code No. : 14280

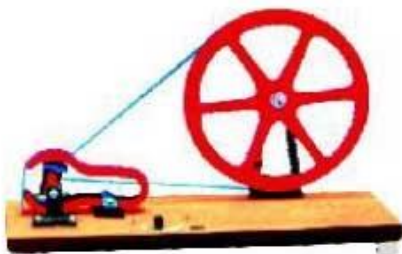
For demonstrating the fundamental principles of electric motor and generators. The motor consists of a two pole D.C armature with a rotatable brush holder, with two binding post terminals. Permanent magnets are supported by spring brass clamps, which are not adjustable in the horizontal plane, so that the effects of pole separation can be demonstrated. The set comes complete with two bar magnets and a two pole D.C. Armature.



DEMONSTRATION DYNAMO

Code No. : 14300

Same arrangement as the Demonstration motor, but is mounted on a base plate 220 x 85 mm. Approx. which also carries a hand driven pulley 120mm diameter, coupled to the smaller dynamo pulley by a rubber belt to increase the speed of the dynamo. Electrical output is through a pair of 4mm socket. An LED is provided as a simple output indicator. The model may also be used as a motor when connected to a 6-8 V D.C. Supply.



DYNAMO

Code No. : 14290

With driving wheel, to generate current, mounted on polished wooden base with driving wheel in vertical position, a lamp holder and a lamp.

STEP DOWN TRANSFORMER

Code No. :14310

With 240 V A.C. mains input, this transformer provides outputs of 2,4,6,8 and 12 V at 8A (96VA maximum power loading) via 4mm sockets, thus covering most low voltage a.c. requirements. Complete with 1.5 metre detachable 3 core mains cable.



BATTERY ELIMINATOR

Code No. :14320

A substitute for (batteries secondary cells) or source of d.c. voltage. Out put 2,4 and 6 volts d.c. maximum current 1 Amp in metal case synthetic hammer finish with mains on/off switch, indicator lamp and fuse. Complete with mains cable with plug, for operation on 230 volts a.c. 50 Hz supply.



BATTERY CHARGER

Battery charger are designed to give constant output & are having wound transformers & full wave rectifiers. Built in nicely polished box with on/off switch, jewel light & fuse etc.

Input: 220 V AC 50 c/s

Output	Code
2-12 volts at 1 Amp	14333
2-12 volts at 2 Amp	14334
2-12 volts at 3 Amp	14335

FULLY AUTOMATIC BATTERY CHARGER :

The instrument is designed to give constant output & has solid-state circuit. Built in a nicely polished box with indicator, Meter, etc.

Input : 230 Volts AC.

Output	Code
12 volts DC at 3 Amp	14340
12 volts DC at 4 Amp	14341
12 volts DC at 6 Amp	14342



PHYSICS ► ELECTRICITY ► METERS

METER-MOVING COIL

DC RECTANGULAR

VOLTMETER, AMMETER, GALVANOMETER

Accuracy : Class ± 2 F.S.D. Case : Clear transparent front cover. Scale length : 85 mm (Approx) with knife edge pointer and anti parallex mirror scale.Desk Stand : Front terminal unbreakable ABS black.Overall Size : 100 x 100 x 140 approx. Packing : Thermocol box.



Current (Amps)	AMMETER Code		Voltage (volts)	VOLTMETER Code		Range in mA/mV	GALVANOMETER Code	
	Single Range	Dual Range		Single Range	Dual Range		Single Range	Dual Range
1	14360	14355	1	14370	14375	30-0-30 mV	14390	14395
2	14351	14356	2	14371	14376	35-0-35 mV	14391	14396
3	14362	14357	3	14372	14377	1-0-1mA	14392	14397
5	14353	14358	5	14373	14378	3.5-0-3.5 mA	14393	14398
10	14364	14359	10	14374	14379	x	x	x

DC SQUARE

VOLTMETER, AMMETER, GALVANOMETER

Accuracy : Class ± 2 F.S.D. Case : Clear transparent front cover ABS black. Scale length : 60 mm (Approx) with knife edge pointer and anti parallex mirror scale.Desk Stand: Front terminal unbreakable ABS black/cream white. Overall Size : 90 x 110 x 125 approx.



Current (Amps)	AMMETER Code			Voltage (volts)	VOLTMETER Code			Range in mA/mV	GALVANOMETER Code		
	Single Range	Dual Range	Triple Range		Single Range	Dual Range	Triple Range		Single Range	Dual Range	Triple Range
1	14400	14405	14410	1	14420	14425	14430	30-0-30 mV	14440	14444	14448
2	14401	14406	14411	2	14421	14426	14431	35-0-35 mV	14441	14445	14449
3	14402	14407	14412	3	14422	14427	14432	1-0-1mA	14442	14446	14450
5	14403	14408	14413	5	14423	14428	14433	3.5-0-3.5 mA	14443	14447	14451
10	14404	14409	14414	10	14424	14429	14434	x	x	x	x

DC ROUND

VOLTMETER, AMMETER, GALVANOMETER

Accuracy : Class ± 2 F.S.D. Case : Black ABS plastic case. Scale length : 50 mm (Approx) with knife edge pointer. Desk Stand: Top terminal unbreakable ABS black/cream white. Overall Size : 90 x 110 x 90 approx.



Current (Amps)	AMMETER Code			Voltage (volts)	VOLTMETER Code			Range in mA/mV	GALVANOMETER Code		
	Single Range	Dual Range	Triple Range		Single Range	Dual Range	Triple Range		Single Range	Dual Range	Triple Range
1	14460	14465	14470	1	14480	14485	14490	30-0-30 mV	14500	14504	14508
2	14461	14466	14471	2	14481	14486	14491	35-0-35 mV	14501	14505	14509
3	14462	14467	14472	3	14482	14487	14492	1-0-1mA	14502	14506	14510
5	14463	14468	14473	5	14483	14488	14493	3.5-0-3.5 mA	14503	14507	14511
10	14464	14469	14474	10	14484	14489	14494	x	x	x	x

METER MOVING IRON

Voltmeter Size : 72 x 72 mm
Ammeter Size : 96 x 96 mm



TYPE	RANGE	CODE
Voltmeter	0-300 V	14520
Ammeter	0-30 A	14521
Galvanometer	0-35 mV	14522

PHYSICS

METER MOVING COIL

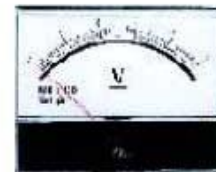
Case - Clear Transparent front cover
 Scale length - 65 mm, Desk Stand - ABS Plastic Black
 Overall Size - 120 x 80 x 85
 Voltmeter - Code : 14530,
 Ammeter - Code : 14531,
 Galvanometer - Code : 14532



Size - 65 x 65 mm, Scale length - 50 mm
 Mounting - Rear type, Range : 0-15 Volt
 Voltmeter - Code : 14534,
 Ammeter - Code : 14535,
 Galvanometer - Code : 14536



Size - 80 x 100
 Scale Length - 85 mm, Mounting - Flush type
 Voltmeter - Code : 14537,
 Ammeter - Code : 14538,
 Galvanometer - Code : 14539

**DIGITAL METERS**

Display - LCD type 3 1/2 digit
 Power - 9 volt battery operated



AMMETER Range	199.9μA	1.99 mA	19.99 mA	199.9 mA	1.99 A	19.99 A
Codes	14545	14546	14547	14548	14549	14550
Voltmeter Range	199.9mV	1.99 V	19.99 V	199.9 V		
Codes	14551	14552	14553	14554		

MULTIMETER(DIGITAL)

Code No. : 14570

SPECIFICATIONS

DC Voltage	: 200mV-1000V ± 0.5% + 2
AC Voltage	: 200V-750V ± 1.2% + 10
DC Current	: 200μA-10A ± 1% + 2
Resistance	: 200Ohm-2000kOhm ± 0.8% + 2
Range	: Manual
Transistor Test	: Yes
Standard Accessories	: Battery, Testing probes with Instruction Manual

**SPOT GALVANOMETER**

Code No. : 14575

High quality, very useful as null detector. Housed in sturdy plastic case with in built lamp and scale arrangement, taut band type movement, with Alcomax magnet, clamp and free arrangement for safe transportation, easy replacement of the 6V lamp, working on 220V a.c. with internal transformer. With a rotary switch for selecting any of the five shunt powers : 1, 1/10, 1/100, 1/1000 and short circuit.

Galvanometer resistance	: 125ohms
Current per mm deflection	: 5×10^{-8}
Volts per mm deflection	: 6.25×10^{-6}
Critical damping resistance	: 1000 ohms



DEMONSTRATION METER

VERTICAL TYPE

Code No. : 14580

With interchangeable scales. A versatile instrument and demonstration meter that can be converted to an a.c. d.c voltmeter or ammeter with selection of various ranges to each mode. With a high quality moving coil, spring controlled movement with full scale deflection of 5 mA or 100mV d.c. The long pointer has a spade end and is clearly visible from a distance. Fitted in case with glass front and back.

The instrument can be used with different dials to give different voltage and current ranges. All dials are interchangeable and each has a plug coupler to fit the instrument. The coupler connects appropriate resistors, shunts or rectifiers to convert the instrument to the range as given on the scale of the particular dial. The scales have clear bold figures and are marked on both sides to enable the lecturer also to observe the reading from the back of the instrument. A zero adjuster allows the instrument to be used for centre zero dials. One dial of range 0-5V d.c.

DIALS INTERCHANGEABLE

For use with demonstration meter. Each dial comprises of plastic panel with sealed moulded capsule on one side containing appropriate shunts, or voltage multipliers. Available in the following range :

A.C CURRENT		D.C CURRENT	
Range	Codes	Range	Codes
0-10 mA	14590	2.5-0-2.5 mA	14600
0-50 mA	14591	10-0-10 mA	14601
0-100 mA	14592	0-10 mA	14602
0-500 mA	14593	0-50 mA	14603
0-1 A	14594	0-100 mA	14604
0-5 A	14595	0-500 mA	14605
x	x	0-1 A	14606
x	x	0-5 A	14607
x	x	0-10 A	14608

A.C VOLTAGE		D.C VOLTAGE	
Range	Codes	Range	Codes
0-5 V	14613	0-1 V	14620
0-10 V	14614	0-5 V	14621
0-15 V	14615	0-10 V	14622
0-50 V	14616	0-15 V	14623
0-300 V	14617	0-300 V	14624
0-100 mV	14618	5-0-5 V	14625
0-500 mV	14619	10-0-10 V	14626

HORIZONTAL TYPE

Horizontal type in transparent case bakelite base.

Scale length : 85 mm

Overall size : 140 x 100 x 45 mm

Voltmeter - Code : 14585, Ammeter - Code : 14586,

Galvanometer - Code : 14587

TANGENT GALVANOMETER

Code No. : 14630

The bakelite ring or bobbin, 162.5 mm overall diameter wound with three coils of insulated copper wire with 2,50 and 500 turns, mounted on black bakelite moulded platform fitted with 4 terminals, rotating on a tripod non-magnetic metal base, supported by brass N.P. levelling screws. Complete with compass box (magnetometer) mounted at the centre of the ring.



OSCILLOSCOPE

Code No. : 14640

SINGLE CHANNEL OSCILLOSCOPE- 1210

Band width : DC-110 Mhz

Vertical deflection : 5 mv/div to 20 v/div

Horizontal deflection : 300ns/div to 30ms/div

130 mm CRT.

Input :220 volts

Also available in dual channel Code No.: 14641

**POWER SUPPLY IC REGULATED**

Code No. :14650

SPECIFICATIONS :

Input : 230 volts AC

Output : 0-30 volts at 1 Amps

Load regulation : $\pm 0.05\%$ Line regulation : $\pm 0.01\%$

Ripple : Less than 1 mv r.m.s.

Protection : Protected against short circuit.

Meters : Two meters are provided to read volts % Amps.

**WIRE, BARE**

Available in following sizes :

Dia .in		Manganin	Nichrome	Constantan/Eureka	Copper
mm	s.w.g.	wire(100 gms)	wire(100 gms)	wire(100gms)	wire(100 gms)
2	14	x	x	x	14690
1.6	16	x	x	14680	14691
1.25	18	x	14670	14681	14692
0.9	20	14660	14671	14682	14693
0.71	22	14661	14672	14683	14694
0.56	24	14662	14673	14684	14695
0.45	26	14663	14674	14685	14696
0.4	28	14664	14675	14686	14697
0.31	30	14665	14676	14687	14698
0.28	32	x	14677	14688	14699
0.25	34	x	x	14689	x



Wire Double Rayon covered is also available in above diameters & s.w.g.

► PHYSICS ► ELECTRICITY ► ACCESSORIES



CROCODILE CLIP

Code No. : 14760

With strong spring, clamping screw for wire. The shank will accept 4 mm plugs. Available in black and red colour.

Quality	Economic	Regular	Superior
Code	14760	14761	14762



MES BULB HOLDER

Rolled shell of brass mounted in moulded black bakelite base. Code No. :14770

Also available in plastic. Code No. :14771



BANANA PLUGS

Plugs of length 40mm.having 4 mm Pin and 18mm long spring insert and hard plastic body.

Quality	Economic	Regular	Superior
Code	14780	14781	14782



SOCKET FOR BANANA PLUGS

Hard plastic body of 4 mm moulded is threaded with fixing nut. Maximum panel thickness 5 mm. Plated brass insert with solder pin. Requires 8 mm diameter panel hole.

Colour	Black	Red	Yellow	Green
Code	14800	14801	14802	14803



SOCKET FOR TERMINAL INSULATED

Spade terminals comes in black and red colour with moulded captive head, 4 mm Socket, nuts and washers. The screw top will clamp ordinary connecting wires.

Quality	Economic	Regular	Superior
Code	14800	14801	14802



BELL PUSH

Moulded plastic body, superior quality.

Quality	Economic	Regular	Superior
Code	14810	14811	14812



ELECTRIC BELL

Code No. :14820

With detachable "snap-on bakelite cover, metal thread terminals, silver contacts. Dome gang dia.75 mm. Approx. For use on 3 to 6V AC/DC supplies.

ELECTRIC BELL DEMONSTRATION MODEL

Code No. :15000

Electric bell with individual component for easy understanding.
Works on 6 volt DC.

**BUTTERFLY NET, FARADAY**

Code No. :15010

Net with cord, on insulated pillar on a metal tripod base, to show electric charge resides on outer surface of a conductor.

**ELECTROSCOPE GOLDLEAF**RECTANGULAR WOODEN Code No. :15020

In rectangular wooden case, with removable glass window and fitted with 4 mm earthing socket. A metal disc is fitted on the top of a rod which passes through an insulating polythene bush and ends in a flat support for "gold leaf" with a transparent scale to show quantum of deflection. Supplied with a spare leaves and instructions for fitting.

RECTANGULAR - METAL

Code No. :15030

In rectangular sheet metal case, with removable glass window and fitted with 4 mm earthing socket. A metal disc is fitted on the top of a rod which passes through an insulating polythene bush and ends in a flat support for "gold leaves" with a transparent scale to show quantum of deflection. Supplied with spare leaves and instructions for fitting.

IN CONICAL FLASK

Code No. :15040

Conical flask with rubber stopper which holds a metal rod with disc top & lower flat end to which two gold leaves are pasted. Supplied with two leaves and instructions for fitting.





PHYSICS



ELECTROSTATICS

ELECTROSCOPES



VAN DE GRAFF GENERATOR

Code No. :15040

It consists of a metal sphere which surrounds the upper pulley assembly and charge accumulates on the sphere, which is insulated by a plastic column supporting the pulley assembly. The charge builds up until electrical break down of air surrounding the sphere occurs. Supplied with a discharging sphere. Generator is hand operated on the base.

PLATES FOR SIMPLE CELL

Plate Copper : With brass terminal for construction of a simple cell. Size 125 x 50mm.

Plate thickness in swg	22	20	16
Codes	15060	15061	15062

Plate Zinc : With brass terminal for construction of a simple cell. Size 125 x 50mm.

Plate thickness in swg	22	20	16
Codes	15065	15066	15067

Plate Carbon : With brass terminal for construction of a simple cell. Thickness of the plate is 6 mm.

Code No: 15070

SIMPLE CELL

Code No. : 15080

For experiments in electrolysis 3 thick copper plates suspended from bakelite cover in a PP jar 150 x 100mm, height x diameter. The outer plates form anode and the central one is cathode. The central plate may be taken out or put into the holder without being touched by the fingers.

CONDUCTOR

CONICAL

Code No. :15090

Brass cone 10 x 5 cm dia. fitted with insulator of ebonite on metal base.

CYLINDRICAL

Code No. :15100

Brass cylinder 12.5 x 5 cm. dia fitted with insulator of ebonite on metal base.

SPHERICAL

Code No. :15110

Brass sphere 5 cm. dia. fitted with insulator of ebonite on metal base.



PHYSICS

DANIEL CELL

Code No. :15120

Stout cylindrical copper vessel jointless 135 x 100 mm fitted with terminal perforated shelf with porous pot & wooden cover fitted with zinc rod & terminal, EMF 1.08 volt individually packed.



POROUS POT CYLINDRICAL

Cylindrical in shape and available in various sizes below :

Height	Diameter	Codes
75mm	25mm	15130
100mm	25mm	15131
150mm	50mm	15132
150mm	60mm	15133



LECLANCHE CELL

Code No. : 15140

Charged porous pot 140 x 60 mm (height x diameter) , with brass terminal, having e.m.f. 1.5 volts and zinc rod 12.5mm diameter in rectangular plastic jar.



CHARGED POROUS POT SPARE

Code No. :15150

150x60 mm height x diameter ,with brass screw & emf 1.5 volts for leclanche cell



▶ PHYSICS ▶ ELECTROCHEMISTRY ▶ ACCUMULATOR



ACCUMULATOR

Accumulators (batteries, storage) Mass type. 2 Volts plastic container with terminals. without acid, uncharged.

Single Plate		Multiplate		
Capacity Ah.	Code	Capacity Ah.	No. of Plates	Code
20	15250	30	7	15255
40	15251	40	9	15256
X	X	50	11	15257



COPPER VOLTAMETER

Code No. :15270

Consists of a copper plate with insulated cover polypropylene jar



BATTERY HYDROMETER

Pipette type, comprising glass float calibrated having coloured zones to indicate charged, partly charged and uncharged conditions. Compressible bulb and rubber tube is fitted to glass body.

Size	Code
Large	15280
Medium	15281
Small	15282



CARBON ELECTRODE WITH TERMINAL

Available in sizes :

Sizes	150 x 10 mm	150 x 12 mm
Code	15290	15291



CARBON ELECTRODE

Code No. :15300

Having dia of 6mm and available in different lengths, such as 10 cm, 15 cm and 20 cm.

Sizes	10 cm	15 cm	20 cm
Code	15290	15291	15292



FOUR STROKE DIESEL ENGINE

Code No. :15450

A model of four stroke water cooled diesel engine. This is of the chain driven overhead camshaft type and all functional components like camshaft, rocker-arms, tappets etc. are clearly demonstrated. The functioning of fuel injection system is also shown. Ignition is shown by means of a miniature bulb. Mounted on base, with printed diagram showing working.



TWO STROKE DIESEL ENGINE

Code No. :15460

Made of Aluminium alloy & gun metal. Ignition is shown by means of a miniature bulb. Fuel supply is also sectioned. With hand crank, provided for manual operation. Mounted on base, with printed diagram showing working.



TWO STROKE PETROL ENGINE

Code No. :15470

Made of aluminium alloy to demonstrate internal structure and operating principles of an air-cooled two stroke engine. Ignition is shown by means of a miniature bulb. Carburettor and fuel supply also sectioned. Mounted on base, with printed diagram showing working.



FOUR STROKE PETROL ENGINE

Code No. :15480

Four stroke aircooled petrol engine sectional model with the operation of the valves is clearly visible. Also the cams being driven by a gear train from rear of the main crank can be seen.

Simulated spark plug uses a small lamp to indicate the firing point. Screw terminals are provided for connection to 3 volts battery. Cross section of carburettor is shown.

Mounted on base, with printed diagram showing working.





PHYSICS



HEAT



ENGINE MODELS



WANKEL ENGINE

Code No. :15490

Cut out model demonstrating the principle of operation of Wankel engine showing internal construction details. Unlike other engines the rotary piston engine avoids reciprocating parts. The power piston is an arch like triangular rotor which on rotating generates an epitrechoid. Mounted on the base with printed diagram showing the working.



STEAM ENGINE

WITH BOILER

Code No. :15500

Operation of a commercial steam engine is well illustrated with this working model. The extra large size unit is provided with a horizontal boiler with a whistle, safety valve, steam gauge on metal base. Operates on 220V A.C. 50 Hz.



STEAM ENGINE

Code No. :15510

Metallic model with section cut of metal cylinder which is enclosed in a glass box, with working parts like piston, slide valve clearly visible so that link motion and reversing method can be observed. The movement of the wheel is light enough to demonstrate working even by blowing with mouth.



TURBOJET ENGINE

Code No. :15520

Constructed of light and strong metal, section cut model showing air intake, axial flow, two stage compressor, fuel supply, combustion chamber, rotary turbine, thrust jet and exhaust. Printed diagram shows the working.



HERO' S ENGINE

Code No. :15530

A functional model in metal. Comprises of a hollow bulb fixed at the center of a hollow shaft. Two arms bent at right angles at the end are fixed on to the shaft in opposite directions. Water introduced in to the bulb is heated to boiling point to produce steam which comes out of the bent arms, the ends of which are formed into jets. The bulb along with this shaft rests on two stands at the two ends and rotates around its axis. Supplied without burner..

PHYSICS

THERMO METER**MAXIMUM & MINIMUM**

Code No. :15550

Six's pattern, wall mounting. Spirit in glass thermometer with mercury indicating thread and two cursors mounted on dual scale, range -22 to 55 x 1°C and -10 to 140 x 2°F in metal frame, complete with magnet for resetting.

**WALL TYPE WOODEN**

Code No. :15555

Wall mounted double scale mounted on polished wooden base with screw painted marking & figures. Range -20 to +55° x 1°C and 1 - 120° x 2 F, red spirit filled, overall dimensions 500 x 90mm.

Wall type thermometer is also available in plastic base with a range -20 to 50 x 1°C. Code No.: 15556

**CHEMICAL THERMO METER****MERCURY/ALCOHOL**

Total immersion type, mercury filled engraved stem with white enamelled

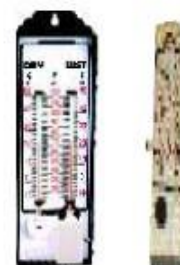
back 5-7 mm diam. with reinforced bulb in round card case, accuracy $\pm 1^\circ$ of the scale. LENGTH 300 mm

RANGE	GRADUATION	MERCURY	ALCOHOL
0 to 50 °C	1	15560	15575
-10 to 110 °C	1	15561	15576
-10 to 110 °C	1/2	15562	15577
0 to 150 °C	1	15563	15578
0 to 200 °C	1	15564	15579
0 to 250 °C	1	15565	15580
0 to 300 °C	1	15566	15581
0 to 360 °C	2	15567	15582
0 to 400 °C	2	15568	15583
0 to 120 °F	1	15569	15584
0 to 220 °F	1	15570	15585
0 to 400 °F	2	15571	15586

**HYGROMETER - WET & DRY MASON'S**

Code No. :15590

Consists of two thermometers with range -10 to +55 deg. C out of which one bulb is covered with muslin which is kept moist by connecting it to a reservoir of water. Mounted in a white enamelled case.





RESISTANCE THERMOMETER , PLATINUM

Code No. :15600

For accurate temperature measurement by Bridge Method. Consists of a fine Platinum wire of approx.2 ohms. resistance, wound non-inductively on a mica frame, which has soldered copper lead. One pair of composite leads are provided along with 4mm socket terminals, suitable for temperature up to 150 Degree Celsius and also for low temperature work.

SOIL THERMOMETER WITH ENGRAVED STEM

Code No. :15610

Red spirit filled tube with slotted aluminium case with pointed end Read ball handle. Range 50 deg to 115 Deg. Celsius.

BALL & RING**WITH CHAIN SINGLE HANDLE**

For demonstrating volumetric thermal expansion of metals. It consists of a brass ball with ring in a wooden handle attached by chain.

Ball Dia.	Code
19 mm	15630
22 mm	15631
25 mm	15632

**WITH CHAIN AND TWO HANDLES**

For demonstrating volumetric expansion of metals. It consists of a brass ring with a wooden handle and separately a brass ball attached by chain, to a rod with handle. It has a separate handle.

Ball Dia.	Code
19 mm	15640
22 mm	15641
25 mm	15642

**TWO HANDLES WITHOUT CHAIN**

Ball and ring for demonstrating volumetric expansion of metal. One handle has a ring and the other has a ball.

Ball Dia.	Code
19 mm	15640
22 mm	15641
25 mm	15642

**BAR AND GAUGE**

Code No. :15660

For demonstrating the expansion by heating and contraction by cooling. A steel rod mounted on a support with wooden handle. Gap gauge made of brass with handle just fits over ends of bar at room temperature. It includes one hole which just accepts the ends of the bar.

**COMPOUND BAR**

BRASS & IRON Code No. :15670

For demonstrating the differential expansion of two metals as shown by the curvature produced when the bar is heated. Comprising a bar of copper and a bar of iron, each riveted together.



▶ PHYSICS

▶ HEAT ▶ THERMAL EXPANSION

PHYSICS



LINEAR EXPANSION APPARATUS

Code No. :15680

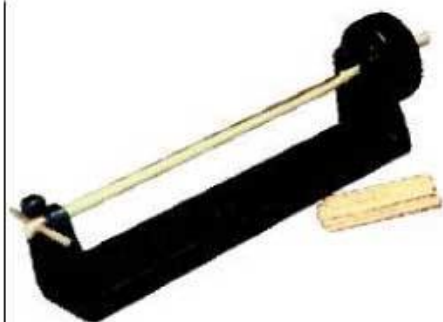
A 500 mm long metal rod is supported in a plated brass tube with three tubules for steam inlet, outlet and thermometer. The tube is mounted on a stand with an adjusting screw at one end and a micrometer screw reading to 0.01 mm on the other, with terminals for connecting a bell or galvanometer to indicate contact. With copper, brass and iron test rods but without thermometer.



EXPANSION APPARATUS GUNTHER

Code No. :15690

Comprising three nickel-plated rods carrying two sliding V-supports for a glass jacket with inlet and outlet tubes & joins two cast end pieces. One end-piece fitted with spherometer reading to 0.005 mm, and the other with contact screw. A brass and a copper rod each 500 x 7 mm length x diameter enclosed in glass jacket, fitted through corks, a half turn of the jacket changing rod in contact with the spherometer. A thermometer can be attached to either of the rods by rubber bands. Brass terminals are fitted to the apparatus so that an electrical circuit can be made through either rod to indicate the moment of contact of centre tube and spherometer. Supplied with 3 metal rods one each of copper, brass and iron.



BAR BREAKING APPARATUS

Code No. :15700

To demonstrate the force which is exerted during thermal expansion & contraction. A heavy cast iron frame with slotted end pillar to carry a stout iron bar. This bar is threaded at one end for a larger tensioning nut and has a hole at the other end to accommodate the cast iron breaking bar, supplied with 6 breaking bars.

▶ PHYSICS ▶ HEAT ▶ GAS LAWS

BOYLE'S LAW APPARATUS

Code No. :15780

Made of wooden stand, polished, mounted on heavy metal base with two levelling screws. A graduated metre scale is fixed in mm readings vertically. Two metal clamps provided to fix the closed glass tube 200mm long, along side either upper or lower portion of the scale. A metal clamp for holding open glass tube, sliding on a metal rod. Jolly air bulb 50mm dia is supplied mounted on a wooden frame which can be fitted on the side of the stand to enable the apparatus to be used, as Jolly's apparatus. Supplied without mercury with pressure rubber tubing.



CHARLE'S LAW APPARATUS

Code No. :15790

Mounted on a wooden stand height 125 cm, with heavy metal base having levelling screws, nicely polished in grey colour. Boxwood scale 100 cm, graduated in mm, reading in both directions. The mercury reservoir held in a clamp slides on metal rod chromium plated. A Jolly's air bulb made from corning glass is supplied mounted on a wooden frame which can be slotted on the side. Complete with pressure rubber tubing and set of two hard glass tubes, without mercury.



CHARLE'S LAW IN GLASS JAR

Code No. :15800

Consists of "U" shaped glass tube of dia 15mm and one limb plain 220mm long, while the other one 120mm long is graduated 25 to 35 x 0.2 ml with a bulb of 37mm diameter at the end. Third limb is 185mm length with 6mm bore joined at right angles to the plain tube. A short length of rubber tube with two pinch clips is mounted on short length for grooves. Tubing mounted at the end of wide bore plain glass hub with rubber bung. Complete with a beaker of 1000 ml capacity and stirrer.



THERMOPILE

Code No. :15810

Bismuth and antimony bars - 12 pairs, joined in series with insulation between them, enclosed in a brass frame having two terminals, connected to Bismuth and Antimony poles, complete with Nickel plated brass cone, is mounted on an adjustable stand.

**THERMOCOUPLE COPPER - IRON**

Code No. :15820

With two copper and two iron wires joined together to form three junctions with brass connectors.

**LESLIE'S CUBE**

Code No. :15830

Made of tin plate box with 130mm. The different vertical faces of the box are blackened, roughened, varnished and polished respectively. 75mm dia top opening is fitted with lid, filled with water at boiling point by a low Bunsen burner flame.

**RADIOMETER CROOK'S**

Code No. :15840

Consists of partial evacuated glass bulb of dia 70mm with a pivot at the center, supporting four light weight metal arms, with vanes. One side of each vane is blackened, while the other side is bright. The whole assembly is mounted on round base.



PHYSICS CHARTS

SCIENCE CHARTS
ELECTRICITY

Electricity is a kind of energy. Most electricity takes the form of a flow of tiny particles, called electrons. Electricity can be made by generators. It can flow along wires in the form of an electric current. Electricity was first described by the Greeks around 500 BC. Nowadays, many scientists have added to the world's knowledge of electricity.

WHAT IS ELECTRICITY?
Electricity is the effect caused by electrically charged particles. It is a form of energy that can be used to do work. It is made up of tiny particles called electrons. These particles are attracted to the positive terminal and repelled by the negative terminal of a battery.

HOW IS ELECTRICITY MADE?
Electricity is made by generators. These are machines that convert mechanical energy into electrical energy. They work by rotating a coil of wire in a magnetic field. This causes the electrons in the coil to move, creating an electric current.

HOW DOES ELECTRICITY FLOW?
Electricity flows through wires. The wires are made of materials that allow electrons to move easily. The flow of electrons is called an electric current. It flows from the positive terminal to the negative terminal of a battery.

WHAT IS A CIRCUIT?
A circuit is a path through which electricity can flow. It consists of a battery, wires, and a device that uses electricity. The circuit must be closed for electricity to flow.

HOW DOES A BATTERY WORK?
A battery is a source of electrical energy. It consists of several cells connected together. Each cell has a positive terminal and a negative terminal. The chemical reactions in the cells create an electric current.

HOW DOES A MOTOR WORK?
A motor is a device that converts electrical energy into mechanical energy. It works by using the force between a current-carrying wire and a magnetic field to rotate a coil.

HOW DOES A LIGHT BULB WORK?
A light bulb is a device that converts electrical energy into light and heat. It works by passing an electric current through a thin filament of wire, which glows when it gets hot.

HOW DOES A TRANSISTOR WORK?
A transistor is a small electronic component that can amplify or switch electronic signals. It is made of semiconductor materials and is used in many electronic devices.

HOW DOES A MICROPROCESSOR WORK?
A microprocessor is a small integrated circuit that contains millions of transistors. It is the brain of a computer and performs all the calculations and control functions.

HOW DOES A TELEVISION WORK?
A television is a device that receives and displays video and audio signals. It works by converting electrical signals into light and sound.

HOW DOES A RADIO WORK?
A radio is a device that receives and plays back audio signals. It works by converting electrical signals into sound waves.

HOW DOES A TELEPHONE WORK?
A telephone is a device that allows people to communicate over long distances. It works by converting sound waves into electrical signals and vice versa.

HOW DOES A COMPUTER WORK?
A computer is a device that processes data and performs calculations. It works by using a microprocessor to execute instructions and control the flow of data.

HOW DOES A SMARTPHONE WORK?
A smartphone is a mobile phone that can perform many tasks, such as sending text messages, taking photos, and using apps. It works by combining a mobile phone with a computer.

HOW DOES A SMART TV WORK?
A smart TV is a television that can connect to the internet and stream video content. It works by using a microprocessor to control the TV's functions and connect to the internet.

HOW DOES A SMART HOME WORK?
A smart home is a home with various devices that can be controlled remotely. It works by using a central hub to connect and control devices like lights, locks, and thermostats.

HOW DOES A SMART CAR WORK?
A smart car is a car with various features that can be controlled remotely. It works by using a microprocessor to control the car's functions and connect to the internet.

HOW DOES A SMART CITY WORK?
A smart city is a city that uses technology to improve its services and infrastructure. It works by using sensors and data to optimize traffic, energy, and other resources.

HOW DOES A SMART FARM WORK?
A smart farm is a farm that uses technology to improve its productivity and efficiency. It works by using sensors and data to monitor crop health and optimize resource use.

HOW DOES A SMART FACTORY WORK?
A smart factory is a factory that uses technology to improve its production and quality control. It works by using sensors and data to monitor production and optimize processes.

HOW DOES A SMART GRID WORK?
A smart grid is a power grid that uses technology to improve its efficiency and reliability. It works by using sensors and data to monitor power usage and optimize distribution.

HOW DOES A SMART TRANSPORT WORK?
A smart transport system is a transportation system that uses technology to improve its efficiency and safety. It works by using sensors and data to monitor traffic and optimize routes.

HOW DOES A SMART HEALTHCARE WORK?
A smart healthcare system is a healthcare system that uses technology to improve patient care and diagnosis. It works by using sensors and data to monitor patient health and optimize treatment.

HOW DOES A SMART EDUCATION WORK?
A smart education system is an education system that uses technology to improve learning and teaching. It works by using sensors and data to monitor student progress and optimize instruction.

HOW DOES A SMART ENVIRONMENT WORK?
A smart environment is an environment that uses technology to improve its sustainability and quality of life. It works by using sensors and data to monitor environmental conditions and optimize resource use.

HOW DOES A SMART SOCIETY WORK?
A smart society is a society that uses technology to improve its overall well-being and progress. It works by using sensors and data to monitor social issues and optimize policies.

KEY TERMS
Circuit: A path through which electricity can flow.
Current: The flow of electrons through a wire.
Voltage: The potential difference between two points in a circuit.
Resistance: The opposition to the flow of current in a circuit.
Power: The rate at which energy is converted in a circuit.
Energy: The capacity to do work.

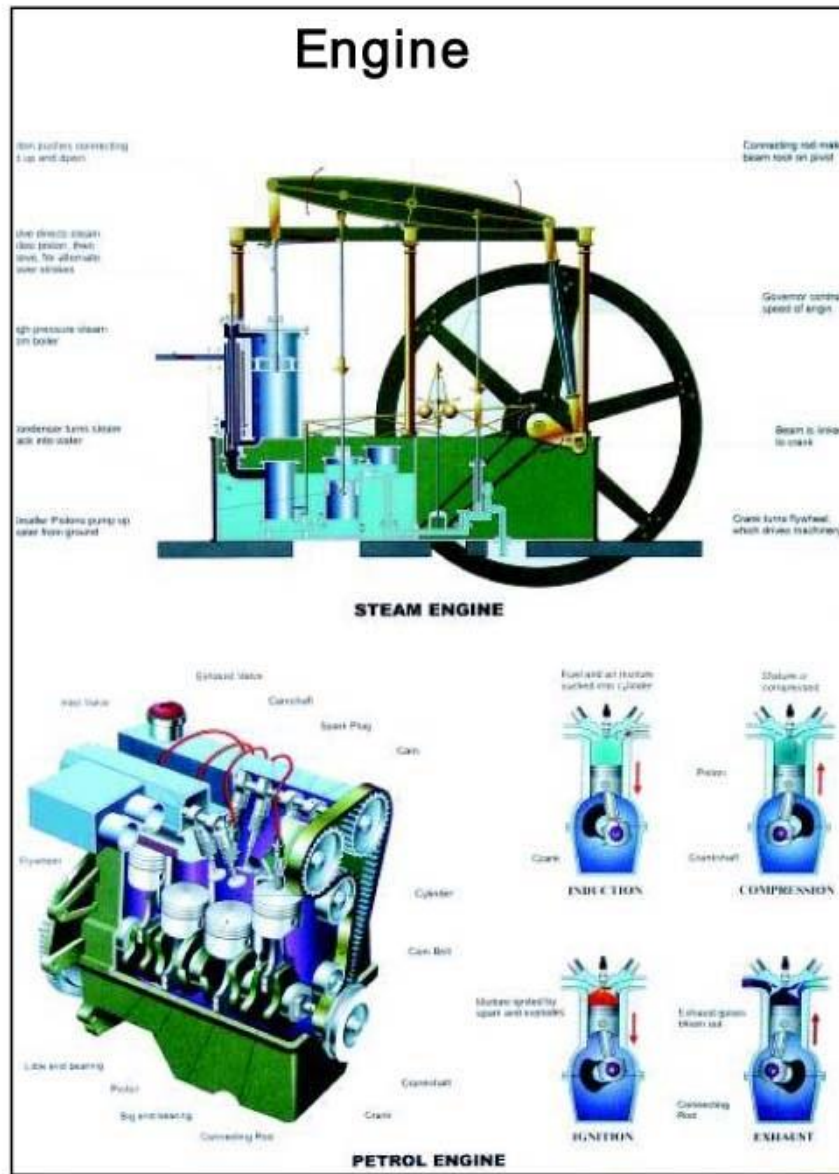
ELECTRICITY

CHARTS
paper laminated 56cmx90cm

CODE	PHYSICS CHARTS	CODE	PHYSICS CHARTS	CODE	PHYSICS CHARTS
16400	Inventors & their Inventions-1	16410	Nuclear Energy & Radioactivity	16420	Engines
16401	Inventors & their Inventions-2	16411	Forces	16421	Cars & Motorbikes
16402	Computer Technology	16412	Dynamics	16422	Astronomy
16403	Electronics	16413	Friction	16423	Rockets & Spacecraft
16404	Electricity	16414	Motion	16424	Radio
16405	Cameras & Photography	16415	Gravity	16425	Television & Video
16406	Lenses & Mirrors	16416	Pressure	16426	Sound
16407	Light & Colour	16417	Work & Simple Machines	16427	Waves
16408	Atoms & Molecules	16418	Floating	16428	Heat & Temperature
16409	Energy	16419	Flight	16429	Magnetism & Electromagnetism

PHYSICS

► PHYSICS ► CHARTS



POLYART CHARTS
100cmx75cm fitted with plastic rollers

CODE	PHYSICS CHARTS	CODE	PHYSICS CHARTS	CODE	PHYSICS CHARTS
16440	Engine (Petrol & Steam)	16450	Kirchoff's Laws-Bridges	16460	Magnet & its Properties
16441	Nuclear Fission of Atom	16451	Oscillators	16461	Electro Magnetic Induction
16442	Images formed by Mirrors.	16452	Logic Gates	16462	Types of Crystal Structure
16443	Images formed by Lenses.	16453	Transistor Characteristics	16463	Surface Tension
16444	Light Dispersion	16454	Triode Characteristics	16464	Newton's Laws of Motion
16445	Light Diffraction	16455	Rectifiers	16465	Dimensional Formulae
16446	Light Polarisation	16456	Electronics Symbols-I	16466	Structure of Atom
16447	Light Interference	16457	Electronic Symbols-II	16467	Separation of substances
16448	Semi-Conductor-I	16458	Inter Conversion of Energy forms	16468	Joule's Apparatus
16449	Semi-Conductor-II	16459	Atomic Reactor	16469	Electro Magnetic Spectrum

