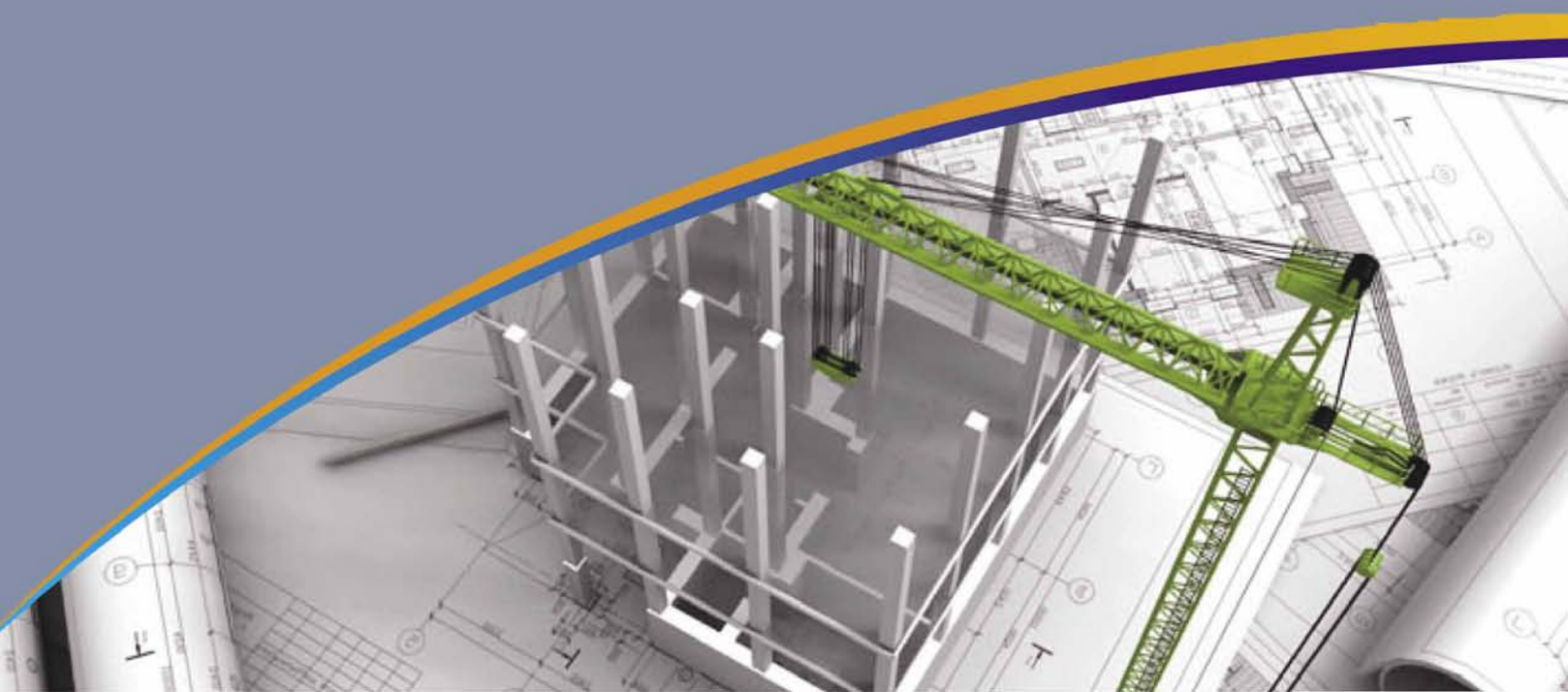
SHANGHAI ROAD CONSTRUCTION EQUIPMENT CO.,LTD.

Testing Equipment

for the construction industry



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SAMPLING OF FRESH CONCRETE

SC series scoop

Material: Stainless steel, Aluminium

The correct sampling and mixing of fresh concrete is important if test results are to be reliable. Most of the equipment necessary for efficient sampling and mixing is standard laboratory equipment detailed in the Laboratory Equipment Section of this catalogue.

STANDARD: EN12350-1

Model No	Capacity(oz)	Weight(g)	Long(mm)
SC-R06	06	78	190
SC-R12	12	120	220
SC-R24	24	210	270
SC-R38	38	300	310
SC-R58	58	440	380
SC-R85	85	525	415
SC-F12	12	115	220
SC-F24	24	210	270
SC-F38	38	300	310
SC-F58	58	440	380
SC-F85	85	525	415

SC-R Series scoop

SC-F Series scoop

SLUMP TEST

SM series slump cone

The Slump Cone (also known as Abrams cone) is spun from heavy gauge steel and is seamless to provide a stronger, more durable product that is easy to clean. All parts are plated for rust resistance.

20 cm Dia base, 10 cm Dia top and 30 cm height.

STANDARD: EN 12350-2, BS 1881:102, ASTM C143

Model No	Dimension (mm)	Weight (kg)	Remark
SM-EG	100x200x300	2.0	Galvanized
SM-EP	100x200x300	2.0	Blue
SM-EB	100x200x300	2.0	Black
SM-LG	100x200x300	3.0	Galvanized
SM-PL	100x200x300	0.7	ABS plastic with funnel
SM-HS	100x200x300	1.5	S/S

SC-M Metal scoop

125 mm dia. x 250 mm long, 5 kg capacity. Ideal for taking increments of concrete.

SC-M Metal scoop

SM-HS Slump cone

SLUMP TEST(CONTINUED)

The test apparatus is carried out by filling the slump cone with freshly mixed concrete which is tamped with a steel rod in three layers. The concrete is levelled off with the top of the slump cone, the cone removed, and the slump of the sample is immediately measured.

To ensure that concrete achieves its maximum possible strength and yet retains its ease of placing on site, it is essential that the design of the concrete mix, in relation to the water-cement ratio and workability, is closely controlled.

SM-EP Slump cone

SM-EB Slump cone

We propose two different models: the standard one particularly suitable for laboratory testing and the portable model very practical for site testing. A number of parts and accessories are however available for particular requirements.

STA-01 Slump cone test set

TR-S600 Steel tamping rod and TR380 tamping bar

Accessories *STA-01 Slump cone test set*

- SM series Slump Cone
- SM-R3 Steel rule 300 mm long
  SM-R5 Steel rule 500 mm long
  (user selectable)
- SM-BP40 Metal base plate 400x400x40 mm
- SM-F Slump cone funnel
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16 x 600 mm
  TR-S380 Metal tamping bar, 25 x 380 mm long
  (user selectable)

SLUMP TEST(CONTINUED)

STA-02 Slump cone test set

STA-04 Slump cone Test Set

STA-03 Slump cone test set

Accessories *STA-03 Slump cone test set*

- SM series Slump cone
- SM-R3 Steel rule 300 mm long
  SM-R5 Steel rule 500 mm long(user selectable)
- SM-BF40 Metal base plate 400x400x1.5 mm galvanized, with one handle.
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16 x 600 mm
  TR-S380 Metal tamping bar, 25 x 380 mm long (user selectable)

Accessories *STA-02 Slump cone test set*

- SM series Slump cone
- SM-R3 Steel rule 300 mm long
  SM-R5 Steel rule 500 mm long(user selectable)
- SM-BP60 Metal base plate 600x400x4 mm galvanized
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16 x 600 mm
  TR-S380 Metal tamping bar, 25 x 380 mm long (user selectable)

Accessories *STA-04 Slump cone Test Set*

- SM series Slump cone
- SM-R3 Steel rule 300 mm long
  SM-R5 Steel rule 500 mm long(user selectable)
- SM-BP40 Metal base plate 400x400x40 mm
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16 x 600 mm
  TR-S380 Metal tamping bar, 25 x 380 mm long (user selectable)

SLUMP TEST(CONTINUED)

STA-05 Portable slump test set

Portable slump cone test set Complete with metal base plate SM-BP/C and TR-G600 tamping rod. Clamps on the base hold the cone for filling and tamping. After the cone is removed, the handle raises over the specimen and the slump is measured using a 22 cm scale engraved in 1 cm increments on the end of the rod. The set of components are fitted together for easy carrying.

Accessories *STA-05 Portable slump test set*

- SM series stainless steel slump cone
- SM-R3 Steel rule 300 mm long
  SM-R5 Steel rule 500 mm long(user selectable)
- SM-BP/C Metal base plate with clamps and measuring bridge
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16 x 600 mm
  TR-S380 Metal tamping bar, 25 x 380 mm long (user selectable)

SCC TESTING APPARATUS

STANDARD: EN12350

Slump-Flow test

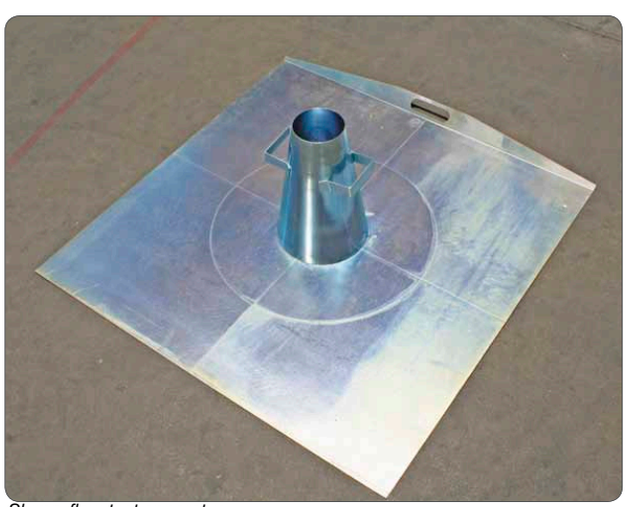
This test method covers evaluation of the deformability of freshly mixed self-compacting concrete(SCC) from observation of the deforming speed and the spread diameter of deformed sample under the self-weight. This test method is intended for use with highly fluidised concretes made with superplasticiser. It is not applicable to concretes made with aggregates whose maximum size exceeds 40 mm.

SM-FL Slump cone

Manufactured from sheet steel protected against corrosion.
Top dia. 100 mm, base dia. 200 mm, height 300 mm.
Weight approx: 2 kg

SM-BP90 Plate

Made of steel, 900 x 900 mm with engraved 200 and 500 mm dia. circles
Weight approx: 10kg



Slump-flow test apparatus

Accessories *This need to be ordered separately.*

- Stop watch – precise to ~0.05 seconds

J-Ring Test

This test method covers the determination of flowability, flow time and the capacity of the SCC concrete to go through obstacles.

54-C0147/C J-Ring apparatus

Galvanised steel, 300 mm dia., with 16 single rods 18 mm dia.
Dimension: 900x900x130mm
Weight approx.: 30 kg

54-C0147/C J-Ring Apparatus

Sieve Segregation Test

Used for determining the sieve segregation resistance of self-compacting concrete. This method is not applicable to concrete containing fibres or lightweight aggregates.

54-C0147/F Sieve segregation test set

The set includes a 300 mm dia. test sieve with perforated plate 5 mm opening, pan and plastic bucket 11 l cap.
Weight approx.: 3kg

54-C0147/F Sieve Segregation Test Set

L-Shape Box Test

The method covers evaluation of self-compactability (confined flowability) of freshly mixed self-compacting concrete. With the L-shaped box it is possible to evaluate different properties, such as filling ability, passing ability, and resistance to segregation.

54-C0147/B L-Shape box apparatus

Complete with funnel tube and frame to simulate reinforcement.
Dimensions: 700x200x700 mm
Weight approx.: 30 kg

54-C0147/B L-Shape box apparatus

U-Shape Box Test

This test method covers the determination of confined flowability and the capacity of the SCC concrete to flow within confined spaces.

54-C0147/D U-Shape box apparatus

Made of galvanised steel with frame consisting of four 10 mm dia. bars and three 13 mm dia. bars.
Dimensions: 250x250x710 mm
Weight approx.: 20 kg

54-C0147/D U-shape box apparatus

V-Funnel Test

54-C0147 V-Funnel

This apparatus is used to evaluate the segregation resistance of freshly mixed self-compacting concrete by the observation on the flowing speed due to the difference of samples remaining period in the funnel. It consists of a funnel placed vertically on a supporting stand, having 10 litres capacity, stand mounted.
The upper edge of the funnel is smooth and reinforced, and the outflow orifice is equipped of an openable seal valve.

Funnel (width x deep): 515 x 75 mm
Height over all: 1000 mm
Weight approx: 20 kg

54-C0147 V-Funnel test apparatus

Accessories *These need to be ordered separately.*

- Stopwatch with the accuracy of 0.1 second for recording the flow time.
- Straightedge for levelling the concrete.
- Buckets with a capacity of 12-14 litres for taking concrete sample.
- Moist sponge or towel for wetting the inner surface of the V-funnel.

DEGREE OF COMPACTABILITY

STANDARD: EN 12350-4

Waltz container

The apparatus consists of a metal box with with two carrying handles. Coated against corrosion.

Dimensions(WidthxDepthxHeight): 200x200x400 mm
Weight approx.: 5 kg

54-C0146 Waltz container

K-SLUMP METHOD

STANDARD: EN C1362

K-slump tester

This device is used to determine the workability and degree of compaction of fresh concrete after being placed in the forms. It can be used for in-situ measurements or inside test moulds and forms. Results can be correlated against the slump test.
The operation is very simple, insert the tester into the concrete up to the level of the disc, after 60 seconds, a measuring rod is lowered onto the surface of the concrete and the Kslump is read directly on a scale. The calibrated hollow tube has a diameter of 20 mm.
Dimensions: 200x200x400(h) mm
Weight approx.: 5 kg

54-C0144 K-slump tester

VEBÉ TEST

STANDARD: ASTMC143, BS1881

This test method is a variation of the simple slump test and subjects the concrete to vibration after removal from the slump cone. The time taken for the concrete to be recompacted is taken as a measure of workability. The small vibrating table operates at a fixed amplitude and frequency, and in the test a plastic disc is placed into contact with the upper surface of the concrete.
The test is completed when the lower surface of the disc has been completely coated with cement grout.

EL34-0300/01 Vebé consistometer

Model EL34-0300/01	
Amplitude(with empty container):	0.5mm
Vibrating frequency:	0.5Hz
Counter weight when VB Test:	2750g±20g
Counter weight when VC Test:	7500g±50g
Counter weight when on modified VC Test:	8700g±50g
Slump cone size (Top Dia. x Bottom Dia. x Height)	100x200x300mm
Power:	380 V, 50Hz, 250 W
Net weight:	30kg

EL34-0300/01 Vebé consistometer

COMPACTION FACTOR APPARATUS

STANDARD: BS 1881-103, BS 5075

The apparatus is used for determining the workability of fresh concrete, provided the maximum size of the aggregate does not exceed 38 mm. The test is particularly useful for concrete mixes of very low workability where true slump values are not reliable.

It consists of two rigid conical hoppers and a cylinder mounted on a rigid metal frame. The lower openings of the hoppers are fitted with hinged trap-doors having quick release catches. A circular metal plate is provided to cover the top of the cylinder.

Model CF-A	
Dimensions:	350 (L) x 320 (W) x 1300 (H)
Net weight:	25 kg

CF-A Compaction factor

FLOW TABLE TEST

This test will be of interest to those involved with concrete having a high workability. The test determines the flow index as an arithmetic mean of the diameter of the specimen after working on a flow table.

Concrete flow table

STANDARD: EN 12350-5

General description and specifications

54-C0151/A Concrete flow table consists of a double wooden table measuring 700x700 mm and hinged at one side. The top table is covered with a flat metal plate 2 mm thick, inscribed, and protected against corrosion. The galvanised steel cone has a top 130 mm dia., base 200 mm dia., and is 200 mm high. Supplied complete with wooden tamping rod.

Weight appox: 25 Kg

Spare parts

- 54-C0151/1 Flow cone top 130 mm dia., base 200 mm dia., 200 mm high
- 54-C0151/2 Wooden tamping rod

Concrete flow table

When fresh concrete is delivered to a site by a truck mixer it is sometimes necessary to check its consistence before pouring it into formwork.
If the consistence is not correct, the concrete will not have the desired qualities once it has set, particularly the desired strength. If the concrete is too pasty, it may result in cavities within the concrete which leads to corrosion of the rebar, eventually leading to the formation of cracks which will accelerate the whole process, rather like insufficient concrete cover. Cavities will also lower the stress the concrete is able to support.

Conducting the test

- The flowtable is wetted.
- The upside down funnel is placed on the flowtable and filled with fresh concrete.
- The funnel is lifted up, allowing the concrete to flow.
- The flowtable is then lifted up several centimeters and then dropped, causing the concrete flow a little bit further.
- After this the diameter of the concrete is measured. The result is called "Ausbreitmaß" in German.

The upside down funnel filled with concrete prior to lifting.

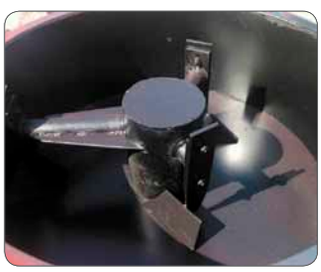
The diameter of the resulting flow is measured.
These images show a flow test with very fluid concrete for a special application which made compression impossible.

CONCRETE MIXER

Pan mixer

The machine is perfect for 2-3 persons construction crew. Why go through all the hassles of towing a mixer to the job site, when the machine can make a wheelbarrow of mortar,stucco, grout or dry pack mortar every 3minutes.

Inside of mixer(Left: XH-PCM120, Right: VEM-30)



Model XH-PCM120 pan mixer

Model XH-PCM120	
Drum capacity:	120 liter
Batch output:	60liter/175lbs
Motor rating:	2.2HP
Paddle speed:	32rpm
Drum diameter:	27"
Wheel size:	12"
Motor Power:	1600W
Voltage:	230V/110V
Frequency:	50Hz/60Hz

Vertical Concrete Mixer

Model VEM-30	
Capacity:	30 Liter
Max. grain size:	40 mm
Motor rating:	2.2HP
Mixing speed:	22-35rpm
Voltage:	380V
Frequency:	50Hz

Model VEM-30 Vertical Concrete Mixer

Horizontal Concrete Mixer

Model SJD-60 Horizontal Concrete Mixer

Model SJD-60	
Feeding capacity:	96L
Output capacity:	60L
Speed of mix shaft:	45rpm
Voltage:	220V
Frequency:	50Hz/60Hz
Dimension:	1520x530x1060mm
Weight:	380kg

CONCRETE CORE DRILL

CD-E Core drilling machine. Electric motor.

Main features:

1. Full 360° operation for coring at any angle.
2. Be equipped with safety clutch to prevent damaging body when bit freezing torque force is too high.

Model CD-E	
Max.drilling diameter:	180 mm
Rated Voltage:	110/220/240V
Rated frequency:	50-60 Hz
Rated input power:	2300 w
No-load speed:	750 r/min
N.W:	26 kg

CD-E core drilling machine

**Please note that all core bits that are eqquipped with drilling machine need to be ordered separately.*

DB Series diamond core drill bit

This diamond core drill bit has excellent ability in drilling concrete, reinforced concrete and brick wall. Thinner diamond segment and thinner tube wall can easily reduce the resistance and increase the drilling speed. It may be ordered separately or with core drilling machine.

Feature:

1. Thinner diamond segment and thinner tube wall can easily reduce the resistance and increase the drilling speed.
2. Very fast cutting speed and low cutting pressure.
3. Different connection end for different drilling machine.
4. Especiall effective in drilling through reinfored concrete
5. The diameter of them can be produce according to the requirment of users, the main dimensions are as follow table.

ITEM NO	Diameter	Working Length	Seg. Nr.	Segment size	Thread
DB042	42mm	400mm	5	15x3.5x8mm	1-1/4UNC
DB051	51mm	400mm	5	24x3.5x8mm	1-1/4UNC
DB056	56mm	400mm	5	24x3.5x8mm	1-1/4UNC
DB063	63mm	400mm	6	24x3.5x8mm	1-1/4UNC
DB066	66mm	400mm	6	24x3.5x8mm	1-1/4UNC
DB076	76mm	400mm	7	24x3.5x8mm	1-1/4UNC
DB083	83mm	400mm	7	24x3.7x8mm	1-1/4UNC
DB089	89mm	400mm	8	24x3.7x8mm	1-1/4UNC
DB102	102mm	400mm	9	24x4x8mm	1-1/4UNC
DB108	108mm	400mm	9	24x4x8mm	1-1/4UNC
DB112	112mm	400mm	9	24x4x8mm	1-1/4UNC
DB120	120mm	400mm	10	24x4x8mm	1-1/4UNC
DB127	127mm	400mm	11	24x4x8mm	1-1/4UNC
DB132	132mm	400mm	11	24x4.5x8mm	1-1/4UNC
DB152	152mm	400mm	12	24x4.5x8mm	1-1/4UNC
DB160	160mm	400mm	12	24x4.5x8mm	1-1/4UNC
DB165	165mm	400mm	12	24x4.5x8mm	1-1/4UNC
DB172	172mm	400mm	12	24x4.5x8mm	1-1/4UNC
DB178	178mm	400mm	13	24x4.5x8mm	1-1/4UNC
DB180	180mm	400mm	13	24x4.5x8mm	1-1/4UNC
DB182	182mm	400mm	13	24x4.5x8mm	1-1/4UNC
DB186	186mm	400mm	13	24x4.5x8mm	1-1/4UNC
DB200	200mm	400mm	15	24x4.5x8mm	1-1/4UNC

CUBE MOULD

STANDARD:
EN 12390-1, BS1881

Test procedures require that specimens are cast in a number of standard sizes convenient for compressive and flexural strength determination. The engineering tolerances specified for moulds are very stringent and the internal finish of the surface must be of a high order to comply with the recommendations laid down in many International standards. Moulds must not deform during manufacture of concrete specimens if the specimen dimensions are to be maintained.

CM-FA 4-part with clamp attached base plate. Cube mould for concrete hardened testing. Material is cast iron. Machined surface finished by flat grinding machine. No distortion during specimen preparation.

Model No	Dimension(mm)	Weight(kg)
CM-FA100	100×100×100	9.5
CM-FA150	150×150×150	18

CM-FA cast iron cube mould

Verification of dimension using digital vernier caliper

Accessories for Making Specimens

- Tamping rod 16 mm dia. x 600 mm
- Tamping bar 380 mm long x 25 mm sq.
- Steel straightedge
- Wire brush for cleaning moulds
- Specimen mould spanner
- Mould oil, 10 kg can
- Trowel
- Heavy duty mixing tray
- Square mouthed shovel
- Rubber mallet

Verification of dimension using electronic digital display depth caliper

Accessories for Making Specimens

CUBE MOULDS(CONTINUED)

CM-FB Cube mould
4-part with clamp attached base plate.


CM-FB Cast iron cube mould

Model No	Dimension(mm)	Weight(kg)
CM-FB100	100×100×100	9
CM-FB150	150×150×150	16

CM-FC Cube mould
CM-FC Cube mould is build up by four parts 45 degree wall, save time to assamble or reassamble, we may regard two connect wall as one wall, only want to disjoin two parts together.

CM-FC Cast iron cube mould

Model No	Dimension(mm)	Weight(kg)
CM-FC100	100×100×100	9
CM-FC150	150×150×150	16

CM-SA150 Steel cube mould

Model No	Dimension(mm)	Weight(kg)
CM-SA150	150×150×150	15.8


CM-SA Steel cube mould

CM-E Cast iron cube mould

Model No	Dimension(mm)	Weight(kg)
CM-E100	100×100×100	5.5
CM-E150	150×150×150	10
CM-E200	200×200×200	16


CM-E Cast iron cube mould

CUBE MOULDS(CONTINUED)

CM-T Cube mould is new design product, one blot connect two parts in every side. Save time to assemble or dissassemble the mould. Base clamps on this mould are slotted.

Model No	Dimension(mm)	Weight(kg)
CM-T100	100×100×100	9
CM-T150	150×150×150	16

CM-PT Plastic cube mould

CM-T Cast iron cube mould

CM-P Plastic cube mould

CM-P Cube mould is best economic mould in this range, it is made of ABS plastic and use special self motion injection plastice machine to squeezed out, one time finished and easy to carry.

Model No	Dimension(mm)	Weight(kg)
CM-P100	100×100×100	0.7
CM-P150	150×150×150	0.9
CM-PT150	150×150×150	1.0

CM-PA150 Plastic concrete test cube mould is reusable and sturdy in this range, it is light and easy to carry, made in collapsible-two parts for quick to install. It will not rust and easy to maitain.

Model No	Dimension(mm)	Weight(kg)
CM-PA150	150×150×150	2.7

CM-PA150 Plastic cube mould

CYLINDER MOULD

STANDARD:
ASTM C39, C192 –AASHTO T23, T126

CY-MS Steel cylinder mould

These moulds are constructed of plated steel for rust resistance and are dimensionally stable under severe use. Moulds are split along one side with 2 quick-acting clamps welded to mould. When open, mould springs apart slightly to allow specimen removal. Include detachable base plate.

CY-MS Steel cylinder mould

Model No	Dimension (mm) Dia.×Height	Weight (kg)
CY-MS50	50×100	1
CY-MS100	100×200	9
CY-MS150	150×300	16
CY-MS160	160×320	18

Model No	Dimension(mm) Dia.×Height	Weight (kg)
CY-MC100	100×200	9
CY-MC150	150×300	17
CY-MC160	160×320	22

Model No	Dimension(mm) Dia.×Height	Weight (kg)	Wall thickness (mm)
CY-CW100	100×200	9	5

CY-MC Cast iron cylinder mould

This type cylinder mould is made of cast iron and surface is coated black or blue and the inner surface is all grinded by the lathe. It's very heavy.

CY-MC Cast iron cylinder mould

CY-CW Steel cylinder mould

CY-CW100 Steel cylinder mould with handle and lid

CYLINDER MOULD(CONTINUED)

CY-MP Plastic cylinder mould

Plastic concrete test cylinder mould is reusable and sturdy in this range, it is light and easy to carry, made in collapsible-two parts for quick to install. It will not rust and easy to maintain.

CY-MP Plastic cylinder mould

Model No	Dimension(mm) Dia.×Height	Weight (kg)
CY-MP/A(with bolt)	100×200	0.89
CY-MP/B(with clip)	100×200	0.92
CY-MP/C(with bolt)	150×300	1.76

CY-PP150 Plastic cylinder mould

CY-PP150 Plastic cylinder mould

The air gun is generally used for demoulding. Below is the using photo.

Model No	Dimension(mm) Dia.×Height	Weight(kg)
CY-PP150	150×300	1.0

AG150 air gun and CY-PP150 plastic cylinder mould

CY-SS Steel cylinder mould

The Steel Cylinder Mould is available for preparing concrete test specimens for compression testing. It comprises the mold with a ring keep it tightly closed and a base plate that is fixed to the cylinder when being used. Both items are plated to resist corrosion.

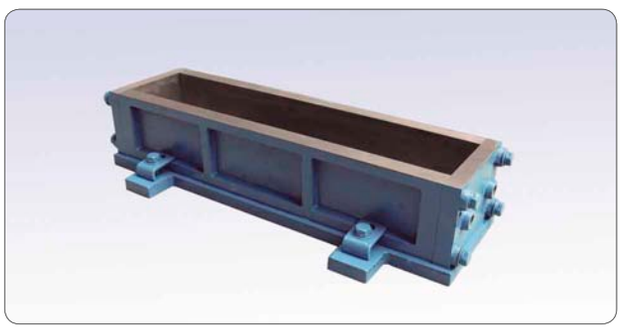
Model No	Dimension(mm) Dia.×Height	Weight (kg)	Wall thickness (mm)
CY-SS11	150×150	8.6	6
CY-SS12	100×200	6.5	6
CY-SS13	150×300	13	6

CY-SS Steel cylinder mould

BEAM MOULD

STANDARD: EN 12390-1, -2

These beam moulds are designed to produce accurate specimens while avoiding distortion over the length of the mould. The top brim is special design and avoids defacing the machined surface. Inner surface are all machined by grind machine.



BM-C75 Cast iron beam mould

Model No	Dimension(mm)	Weight(kg)	Remark
BM-C15	100×100×500	30	Cast iron
BM-C55	150×150×550	45	Cast iron
BM-C75	150×150×750	55	Cast iron

Model No	Dimension(mm)	Weight(kg)	Remark
CM-GS40	40×40×40	2.5	Steel
CM-GS50	50×50×50	3.5	Steel
CM-GS70	70.7×70.7×70.7	7	Steel

Model No	Dimension(mm)	Weight(kg)	Remark
CM-GC50	50×50×50	4	Cast iron
CM-GC70	70.7×70.7×70.7	7.5	Cast iron
CM-GC100	100×100×100	12.5	Cast iron
CM-GC150	150×150×150	32	Cast iron

CM-GS Steel three gang mould

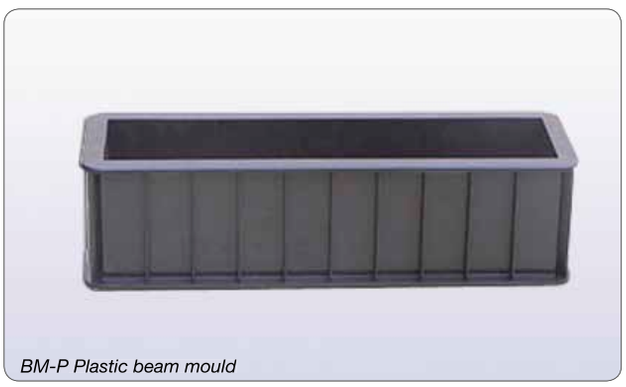
CM-G series three gang moulds

These moulds are made of cast iron, steel or ABS plastic. Machined surface finished by flat grinding machine. No distortion during specimen preparation.

CM-GP Plastic three gang mould

Model No	Dimension(mm)	Weight(kg)	Remark
CM-GP70	70.7×70.7×70.7	0.9	Plastic
CM-GP100	100×100×100	1.3	Plastic

Model No	Dimension(mm)	Remark
BM-P13	100×100×300	ABS plastic
BM-P14	100×100×400	ABS plastic
BM-P53	150×150×300	ABS plastic
BM-P55	150×150×500	ABS plastic



BM-P Plastic beam mould

CM-GC Cast iron three gang mould

BEAM MOULD(CONTINUED)

Beam mould: steel construction

BM-S Steel beam mould

Model No	Dimension(mm)
BM-S13	100×100×300
BM-S14	100×100×400
BM-S15	100×100×500
BM-S55	150×150×500
BM-S56	150×150×600
BM-S75	150×150×750

GROUT FLOW

STANDARD: ASTM C939, ASTM C6449

Grout flow Cone Set

Test set for measuring the flow of grout for preplaced, aggregate concrete. Intended for neat grout and grouts containing fine aggregate capable of passing a No. 8 sieve and grouts which have an eflux time of less than 35 seconds.

FC-13 Grout Flow Cone, 1/2" (13mm)

Steel flow cone from above set, has 1/2" (13mm) replaceable orifice. Can also accommodate 3/4" (19mm) orifice, which can be purchased below. Includes adjustable point gauge assembly. Overall dimensions: 8" dia. x 12"H (203 x 305mm).

FC-19 Grout Flow Cone, 3/4" (19mm)

Steel flow cone from above set, has 3/4" (19mm) replaceable orifice. Can also accommodate 1/2" (13mm) orifice, which can be purchased below. Includes adjustable point gauge assembly. Overall dimensions: 8" dia. x 12"H (203 x 305mm).

Flow Cone Stand

Sturdy well-constructed steel stand to support flow cones so the top is level and the cone free from vibration. Overall dimensions: 21"W x 9-1/2"D x 23"H.

Grout flow Cone Set

MIXTURE PRESSURE WEEPAGE TESTER

It is used to make pressure bleeding test for concrete mixture. Concrete partical side should be no more than 40mm.

MPWT-01 Concrete mixture pressure weepage tester

Model MPWT-01

Max. range of pressure meter:	6 MPa
Scale division:	not more than 0.1 MPa
Inside diameter of cylinder:	125±0.2 mm;
height of cylinder:	200±0.2 mm
Pressure of working piston:	3.2 MPa
Piston diameter:	125 mm
Mesh size of sieve:	0.315 mm
Net weight:	20 kg

Curing of Specimen

Both ASTM and EN specifications require the specimens to be left in the mould for the first 16 hours up to a maximum of three days, protected against shock, vibration and dehydration at a temperature from 20 ± 5°C or 25 ± 5°C in hot climates (EN method) and 16 to 27°C (ASTM method). After the removal from the moulds the specimens have to be stored in a moist condition at 20 ± 2°C (EN) or 23 ± 1.7°C (ASTM) with a relative humidity ≥ 95%. Alternatively they can be cured in water at the same temperature.

CURING CABINET AND TANK

TPBY-40B Curing Cabinet

STANDARD: EN 12390-1, BS1881

Use high-power heating tube, it can quickly increase the temperature in the cabinet to setted temperature.
Use advanced ultrasonic humidifier, it has automatic constant control humidification for fog, make sure that the humidity in the cabinet 95%.

TPBY-40B Curing Cabinet

Model TPBY-40B	
Temperature control Type:	Automatic
Humidity Control Type:	Automatic
Max Temperature:	20 ± 2°C
Accuracy:	± 1°C
Relative Humidity Control:	≥ 95%
Compressor Frequency:	145W
Heat Power:	600W
Effictive Capacity:	590 × 550 × 1180mm
Power:	220V, 50Hz
Net weight:	120 Kg

55-C0193/A Plastic Concrete specimen curing tank

Model 55-C0193/A plastic curing tank is designed for curing concrete cubes and cylinders.
Temperature range: from ambient to +40°C
Wattage: 3000 W
Capacity: 165 litres
Overall dimensions: 870x570x370 mm
Weight approx.: 10 kg

TPHJ-84 Accelerated Curing Tank

STANDARD: ASTM C684

This special curing tank has been designed for hot water curing in accelerated strength concrete. The interior is made from stainless steel, it is fitted with electronic programmer capable of controlling different test cycles with a choice of thermal gradients and curing time to a defined temperature value for a complete automatic curing cycle.

Model TPHJ-84	
Temperature range:	Ambient to 100°C
Inside dimension(W×D×H):	800×580×400mm
Capacity of the tank:	2 samples 150×150mm cube mould 3 samples 100×100mm cube mould
Temperature Control Type:	Automatic
Max Control Time:	9999 min
Heat Power:	10 kW
Power:	AC380V, 50Hz

TPHJ-84 Accelerated Curing Tank

SPECIMEN GRINDING MACHINE

STANDARD: EN 12390-2

It is used for producing all types of rocks and non-metallic solid concrete samples. It is used with automatic cutting machine together, also can be processed into high-precision cube or cylinder specimen.

Model TPMP-300

Sample diameter:	50, 75, 100, 150mm
Sample height:	47.5-300mm
Grinding head rotate speed:	3400r/min
Grinding head diameter:	120mm
Motor power:	1.7kw
Dimension:	550X420X700mm

TPMP-300 Specimen grinding machine

SPECIMEN CUTTING MACHINE

STANDARD: EN 12390-2

The cutting machine is suitable for various specimen with different sizes in lab of asphalt, Concrete, and stone material.
The model is supplied complete with bearing parts with high precision sealing fabrication, also matched with diamond blades.

Model TPCE-600

Diameter of specimen:	50, 75, 100, 150mm
Length of specimen:	47.5-205mm
Rating speed of main shaft:	2300r/min
Diamond blade:	dia. 350mm, thinkness 3mm
Rated power:	2.2 kw
Voltage:	380V
Dia. of saw blade:	Dia. 400mm
Dimension:	900 × 460 × 830mm
Net Weight :	120kg

TPCE-600 Specimen cutting machine

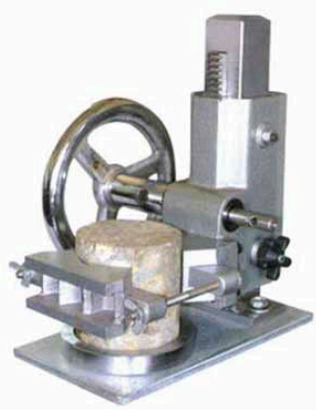
SPECIMEN CAPPING MACHINE

STANDARD: EN 12390-3

It is mainly used in the road construction, building construction, airport as well as some main inspection lab.

Model TPCD-150

Max concrete cylinder diameter:	150mm
Movement :	manual
Vertical degree:	≤0.04



TPCD-150 Specimen capping machine

SHRINKAGE AND EXPANSION APPARATUS

Apparatus for Concrete Shrinkage & Expansion is especially used for measuring axial restrained expansion rate and axial restrained dry shrinkage rate of compensating concrete specimen during hardening under certain environmental condition.

Model TPSE-400

Measuring range:	350-360mm
Length of standard rod:	355mm±0.02mm
Measuring range of dial gauge:	0-10mm±0.001mm
Specimen dimensions:	100mm×100mm×400mm
Net weight:	17kg

LENGTH COMPAROTOR

This apparatus is used to determine the changes in length of cement prisms in the accelerated soundness test. It is also used to measure length changes of 40x40x160 mm, and other sizes of cement and concrete specimens. The instrument consists of an analogic or digital dial gauge, which is mounted on a steel frame. The top anvil is adjustable to suit the required specimen.
Valid testing space is 156-305mm.

Model BC156-300 is equipped with dial indicator with a range of 10mm and resolution of 0.01mm.

Model BC-II is equipped with digial indicator with a range of 12.7mm and resolution of 0.001mm.

BC156-300 Length comparotor

Digital indicator

ELASTIC MODULUS OF CONCRETE

Used for determining the axial deformation and diametrical extension of concrete cylinder specimens during the compression test. Complete with 2x0.001 mm dial gauge and wooden box.

TPEM-01 Concrete cylinder compressometer-extensometer

Model TPEM-01

Dial gauge:	1mm, 0.001mm
Distance from upper ring center to bottom ring center:	150mm
Specimen size suitable :	cylinder specimen: dia.150x300mm; beam specimen: 150x150x300mm; beam specimen: 100x100x300mm

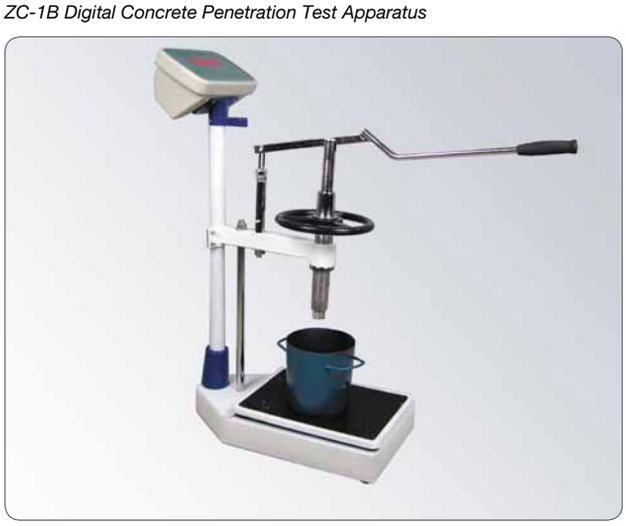
DIGITAL CONCRETE PENETRATION TEST APPARATUS

This apparatus is used to determine the setting time of concrete by means of penetrations resistance measurements on mortar. There are two types ZC-1A and 1B.

Specification:

1. Penetration needle: 100mm², 50 mm², 20 mm²
2. Max penetration force: 1000N, resolution:1N
3. Voltage: AC220V

ZC-1B Digital Concrete Penetration Test Apparatus



ZC-1A Digital Concrete Penetration Test Apparatus

VIBRATING TABLE

Vibrating table

STANDARD: EN 12350-6, -7, 12390-2, 13286-50, 1354

For compacting concrete specimen in the laboratory vibrating table mounted on a steel stand, supplied with clamp assembly.

VT-U68/VT-U88 Vibrating table

VT-M68/VT-M101 Magnetic vibrating table

Model VT-U68/VT-U88

Table size:	VT-U68: 600 × 800 mm, VT-U88: 800 × 800 mm
Amplitude:	0.3-0.6 mm
Vibrating frequency:	2860 vibrations/min
Power:	380 V, 1.1 kW

Model VT-M68/VT-M101

Table size:	VT-M68: 600 × 800 mm, VT-M101: 1 m × 1 m
Amplitude:	0.5 mm
Num. Of specimens for compaction:	6pcs of 150^3 mould 3pcs of 100^3 tri-mould
Vibrating frequency:	50 Hz
Power:	380 V, 1.1 kW

CONCRETE VIBRATOR

STANDARD: EN 12390-2 – ASTM C31 C192 –AASHTO T23, T126

TX series internal concrete vibrators, using the pendulum principle, 3000rpm of the devices unit translates via the flexible shaft into 12,000 vibrations per minute in the poker head. The low output speed ensures high reliability and extended services life, can be used between two types of drive units (interchangeable): electrical motor and petrol or diesel engine drive units' series, with standard poker diameters.

Concrete vibrator

Model No	Diameter	Vibrating frequency	Outside Dia of Flexible Hose(mm)	Inner Dia of Flexible Hose(mm)	Length(m)	Max. vibration Force (KN)	Vibrating Amplitude (mm)	Available Motor or engine
TX35	35	183	30	15	1 to 12	5.293	1.15	Electric motor, Gasoline Engine, Diesel Engine
TX50	50	183	36	20	1 to 12	6.251	1.21	
TX70	70	183	36	20	1 to 12	7.157	1.32	
TX28	28	183	30	15	1 to 12	4.846	1.11	
TX32	32	184	30	15	1 to 12	5.104	1.13	
TX38	38	185	30	15	1 to 12	5.485	1.18	
TX45	45	186	32	17	1 to 12	5.932	1.2	
TX60	60	187	36	20	1 to 12	6.704	1.28	

COMPRESSION TESTING MACHINE

Main features

- Meet the requirements of EN 12390-4 ASTM C39, AASHTO T22
- Tests 200, 150 and 100 mm concrete cubes and cylinders up to 320 x 160 mm diameter
- Platen handling machines include BS 6073-1, EN 772-1 specification rectangular platens.
- Supplied with Windows download software.

SYE-300

SYE-2000

SYE-1000

Code	SYE-300	SYE-1000	SYE-2000	SYE-2000D	SYE-3000D	HYE-2000	HYE-3000
Features:	Manual load	Four standard column	Manual load, Protect cover	Electric screw, Protect cover	Electric screw, Protect cover	With computer, protect cover	With computer, protect cover
Max load capacity:	300kN	1000kN	2000kN	2000kN	3000kN	2000kN	3000kN
Compression space:	210mm	280mm	320mm	320mm	340mm	320mm	340mm
Piston stroke(mm):	80	150	50	50	80	50	80
Size of compression plates(mm):	Dia. 170	Dia. 230	250×250	250×250	270×270	250×250	270×270
Dimension (load frame mm):	850×400×1350	880×420×1350	900×400×1150	950×420×1350	1000×500×1500	700×430×1350	750×500×1500
Power(kW):	1.0	1.0	1.0	2.0	2.0	2.0	2.0
Weight(kg):	400	600	750	950	1500	1090	1640

SYE-2000D/SYE-3000D

HYE-2000/HYE-3000

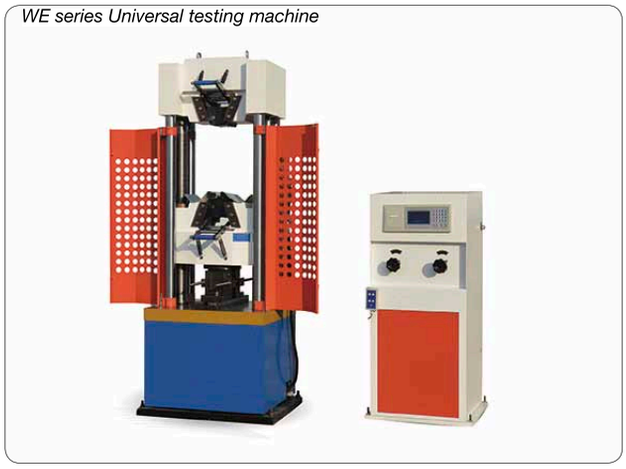
Compression and flexural testing machines

CONCRETE TESTING

UNIVERSAL TESTING MACHINE

WEW series Universal testing machine

WE series Universal testing machine



It can be used for the tensile, compression, bend and shear test of various metal material, plastic, concrete, cement and other non-metal material.

Code	WE-100B	WE-300B	WE-600B	WE-1000B	WEW-100B	WE-300B	WE-600B	WE-1000B
Max load capacity(kN):	100	300	600	1000	100	300	600	1000
Structure type:	Underneath oil cylinder, Four stand column, double screw, Protect cover, Coil spring buffer device				Underneath oil cylinder, Four stand column, double screw, Protect cover, Coil spring buffer device, Hydraulic automatic clamping			
Maximum speed of sentre sill (mm/min)	280				280			
Compression space (mm):	500	600	600	600	500	600	600	600
Tensile space (mm)	600	700	700	700	600	700	700	700
Piston stroke (mm)	200	200	200	200	200	200	200	200
Diameter of round specimen (mm):	Dia. 6-22	Dia.10-32	Dia.13-40	Dia. 14-45	Dia. 6-22	Dia.10-32	Dia.13-40	Dia. 14-45
Thickness of flat specimen (mm):	0-15	0-20	0-20	0-40	0-15	0-20	0-20	0-40
Maximum distance of bending test (mm)	300	300	300	300	300	300	300	300
Size of compression plates (mm):	Dia.110	Dia. 150	Dia. 220	Dia. 225	Dia.110	Dia. 150	Dia. 220	Dia. 225
Dimension (load frame mm):	800×620×1850	800×620×1870	800×620×1900	900×700×2250	800×620×1850	800×620×1870	800×620×1900	900×700×2250
Dimension (control console mm):	550×500×1200	550×500×1200	550×500×1200	550×500×1200	1100×750×900	1100×750×900	1100×750×900	1100×750×900
Power(kW):	1.5	1.5	2.0	2.0	2.2	2.2	2.8	2.8
Weight (load frame kg):	160	160	160	160	200	200	200	200
Weight (control console):	1400	1500	1800	2500	1450	1550	1850	2550

UNIVERSAL TESTING MACHINE(CONTINUED)

Used for a variety of metal materials, tensile, compression, bending and shear tests can also be used as plastic, concrete, cement and other non-metallic materials, compression tests, increasing simple accessories to complete tape chain, wire rope, welding rod, tile, and a variety of component performance tests. The machine is mounted under the cylinder, a low profile, light weight, especially for construction sector.

The control system:

1. Electronic measuring, liquid crystal display pilot force - time curve, test power, test power peak, with significant yield characteristics of the material yield strength, the experimental data easy and intuitive;
2. A digital health input sample number, cross-sectional area can be the direct determination of the material tensile strength, yield strength and other mechanical properties;
3. Test results can be printed.

WAW/WAWD series universal testing machine

Code	WAW-100B	WAW-300B	WAW-600B	WAW-1000B
Max load capacity(kN):	100	300	600	1000
Structure type:	Underneath oil cylinder, Four stand column, double screw, Protect cover, Coil spring buffer device			
Accuracy class:	Class 1(0.5)			
Test force range:	1%-100% F.S			
Test force accuracy:	±1%(±0.5%)			
Measuring range of extension:	1%-100% F.S			
Extension accuracy:	±1%(±0.5%)			
Displacement accuracy:	±1%			
Displacement resolution:	0.001mm			
Relative error of stress-controlled velocity:	±2%(±1%)			
Speed setting accuracy:	±1%(±0.5%)			
Adjusting range of strain-controlled velocity:	0.00025/s-0.0025/s			
Relative of force/extension/ displacement-control:	±2%(±1%)			
Range of force/extension/ displacement-control:	0.3%-100% F.S			
Relative error of force/extension/ displacement-control:	<=1%			
Maximum speed of sentre sill (mm/ min)	280			
Compression space(mm):	500	600	600	600
Tensile space (mm):	600	700	700	700
Piston stroke (mm):	200	200	200	200
Diameter of round specimen (mm):	Dia. 6-22	Dia.10-32	Dia.13-40	Dia. 14-45
Thickness of flat specimen (mm):	0-15	0-20	0-20	0-40
Maximum distance of bending test (mm):	300	300	300	300
Size of compression plates(mm):	Dia.110	Dia. 150	Dia. 220	Dia. 225
Dimension (load frame mm):	800×620×1850	800×620×1900	800×620×2000	900×700×2300
Dimension (control console mm):	1100×750×900	1100×750×900	1100×750×900	1100×750×900
Power(kW):	2.2	2.2	2.8	2.8
Weight (load frame kg):	300	300	300	300
Weight (control console):	1450	1600	1900	2600

UNIVERSAL TESTING MACHINE(CONTINUED)

The proving ring is 0.3 (3/1000) level standard “the Value of Pressure" measuring instruments. It is mainly used for verification and calibration about material testing Machines, compression testing machine and other measuring instruments, equipment. It is also used for other relevant instruments, equipment, spare parts, components "force value" measurement.

The proving ring is a device used to measure force. It consists of an elastic ring of known diameter with a measuring device located in the center of the ring.
Proving rings come in a variety of sizes.They are made of a steel alloy. Manufacturing consists of rough machining from annealed forgings, heat treatment, and precision grinding to final size and finish.

PROVING RINGS

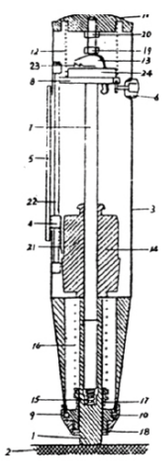
Max load (Kn)	Type	Load Measuring	Dimension (LxWxH mm)	N.W. kg
30	EHB-30	pull-push	210×115×230	4.6
	EHB-30A	push	210×115×200	3.7
60	EHB-60	pull-push	210×115×230	6.1
	EHB-60A	push	210×115×200	5.1
100	EHB-100	pull-push	210×130×250	7.2
	EHB-100A	push	210×130×230	7.5
300	EHB-300	pull-push	225×160×335	13.3
	EHB-300A	push	225×160×235	10.8
600	EHB-600A		250×195×250	20.3
	EHB-600B		165×150×205	6.5
1000	EHB-1000A		270×205×270	31.0
	EHB-1000B		170×160×225	9.8
2000	EHB-2000A		220×180×260	22.1

Code	WAWD-100B	WAWD-300B	WAWD-600B	WAWD-1000B	WAWD-2000B
Max load capacity(kN):	100	300	600	1000	2000
Structure type:	Underneath oil cylinder, Four stand column, double screw, Protect cover, Coil spring buffer device				
Accuracy class:	Class 1(0.5)				
Test force range:	1%-100% F.S				
Test force accuracy:	±1%(±0.5%)				
Measuring range of extension:	1%-100% F.S				
Extension accuracy:	±1%(±0.5%)				
Displacement accuracy:	±1%				
Displacement resolution:	0.001mm				
Relative error of stress-controlled velocity:	±2%(±1%)				
Speed setting accuracy:	±1%(±0.5%)				
Adjusting range of strain-controlled velocity:	0.00025/s-0.0025/s				
Relative error of force/extension/displacement-control:	±2%(±1%)				
Range of force/extension/displacement-control:	0.3%-100% F.S				
Relative error of force/extension/displacement-control:	<=1%				
Maximum speed of sentre sill (mm/min)	280	280	280	280	320
Compression space(mm):	550	600	600	600	650
Tensile space (mm):	600	700	700	700	750
Piston stroke (mm):	200	200	200	200	200
Diameter of round specimen (mm):	Dia. 6-22	Dia.10-32	Dia.13-40	Dia. 14-45	Dia. 20-50
Thickness of flat specimen (mm):	0-15	0-20	0-20	0-40	0-40
Maximum distance of bending test (mm):	300	300	300	300	300
Size of compression plates(mm):	Dia.110	Dia. 150	Dia. 220	Dia. 225	220×220
Dimension (load frame mm):	800×620×1900	800×620×2000	900×700×2300	1050×800×2500	1200×900×2850
Dimension (control console mm):	1100×750×900	1100×750×900	1100×750×900	1100×750×900	1100×750×900
Power(kW):	2.2	2.2	2.8	2.8	4.0
Weight (load frame kg):	300	300	300	300	300
Weight (control console):	1550	1850	2550	3200	5500

CONCRETE TEST HAMMERS

STANDARD: ASTM C 805, BS 1881:202, NF P18-417, DIN 1048 AND UNI 9189

For the non-destructive testing of the surface of hardened concrete in order to evaluate the strength in various parts of a structure.
The concrete hammer is supplied complete with carrying case, grinding stone, and instruction manual.



1. Flip rod
2. Test surface
3. Shell
4. Pointer block
5. Dividing rule
6. Pushbutton
7. Center guide rod
8. Guide flange
9. Cap
10. Clasp
11. Tail hood
12. Pressure spring
13. Hanger
14. Impact hammer
15. Buffer pressure spring
16. Flip tension spring
17. Tension spring seat
18. Felt ring
19. Bolt
20. Nut
21. Pointer piece
22. Pointer shaft
23. Hanger
24. Hanger dowel

HT-225A concrete test hammer

HT-75 Paper/Concrete test hammer

Model HT-225A

Measuring strength ranges:	10-60 MPa
Impact energy:	2.207 Nm
Strike hammer stroke:	75 mm
Spherical radius of strike rod:	25 mm±1 mm
The rebound values calibrated on steel anvil:	80±2
Dimensions:	Dia. 54×278 mm
Gross weight approx:	1.6 Kg

Model HT-225

Impact energy:	2.207 Nm
Strike hammer stroke:	75 mm
Stiffness of strike tension spring:	785±40 N/cm
The rebound values calibrated on steel anvil:	80±2
Free length of strike tension spring:	61.5±0.3 mm
Work temperature:	-4°c— +40°c
Environment humidity:	≤95% (relative humidity)
Gross weight appox:	1.4 Kg

Model HT-75

Application: Lightweight aggregate concrete and Paper roll hardness testing	
Impact energy:	0.735 Nm
Strike hammer stroke:	75 mm
The friction force of pointer slider:	0.5±0.1 N
Spherical radius of strike rod:	25±1 mm
The rebound values calibrated on steel anvil:	74±2
Dimensions:	Dia. 54×268 mm
Gross Weight approx:	2.1 Kg

HT-225 Concrete test hammer

CONCRETE TEST HAMMERS(CONTINUED)

HT-225V Concrete test hammer

This new and advanced model of digital concrete hammer microprocessor operated consists of the standard unit similar to the model HT225-A but equipped with an electronic transducer which converts the rebound of the hammer into an electric signal and displays it in the selected stress unit.
The digital hammer, which is battery operated, can be easily connected to a PC or serial printer via the RS 232 port. A large permanent memory can store up to 48000 results. Supplied complete with battery charger and serial cable.

Model HT-225V	
Measuring strength ranges:	10-60 Mpa
Impact energy:	2.207 Nm
Strike hammer stroke:	75 mm
The consistency of the sample displayed values:	≤±0.5(difference value between digital sampling output value and the pointer readings)
Measurement range	from 10 to 70N/mm^2
The rebound values calibrated on steel anvil:	80±2
Display:	16-bit true color, 176×220 resolution, 5 grades backlight adjustment
Power:	3.6V/1300mAH recharging lithium battery, charging power adapter 5V/2A. Maximum backlight, turn off speech cases, it can be continuous work 13 hours.
Power consumption appox:	100 mA (Voice off) Maximum backlight situation
Communication interface:	USB2.0 full-speed
Gross weight approx:	4.5 Kg

Detail of HT-225V Concrete test hammer

Model HT-225D	
Measuring strength ranges:	10-60 Mpa
Impact energy:	2.207 Nm
Strike hammer stroke:	75 mm
The consistency of the sample displayed values:	0.1R
Measurement range	from 10 to 70N/mm^2
The rebound values calibrated on steel anvil:	80±2
Power:	13.7V Li-ion rechargeable battery charged via USB port
Communication:	USB2.0 or Blue tooth (optional)
Display:	OLED digital
Dimension:	280x75x60mm
Storage:	4000 testing results
Gross weight approx:	2.0 Kg

HT-225V Concrete test hammer

HT-225D Concrete test hammer

CONCRETE TEST HAMMERS(CONTINUED)

HT-20 Concrete test hammer

This instrument applies to inspect compressive strength of mortar in masonry for industrial and civil buildings in general sintered common brick masonry.

Model HT-20	
Measuring strength ranges:	1.0-25 Mpa
Normal impact energy:	0.196 J(0.02kgf.m)
Strike hammer stroke:	75 mm
The friction force of pointer slider:	0.5±0.1 N
Spherical radius of strike rod:	25 mm
The rebound values calibrated on steel anvil:	74±2
Dimensions:	Dia. 54×268 mm
Gross weight approx:	1.6 Kg

HT-1000 Concrete test hammer

Model HT-1000 is suitable for inspecting compressive strength of high-rise building components, bridges and concrete structures (such as blabs, beams, columns, bridge etc.)

Model HT-1000	
Measuring strength ranges:	50-80 Mpa
Normal impact energy:	9.8 J(1 Kgf.m)
Strike hammer stroke:	140 mm
The friction force of pointer slider:	0.5±0.8 N
Stiffness of strike tension spring	10 N/cm
The rebound values calibrated on steel anvil:	83±2
Dimensions:	Dia. 65×486 mm
Gross weight approx:	3.5 Kg

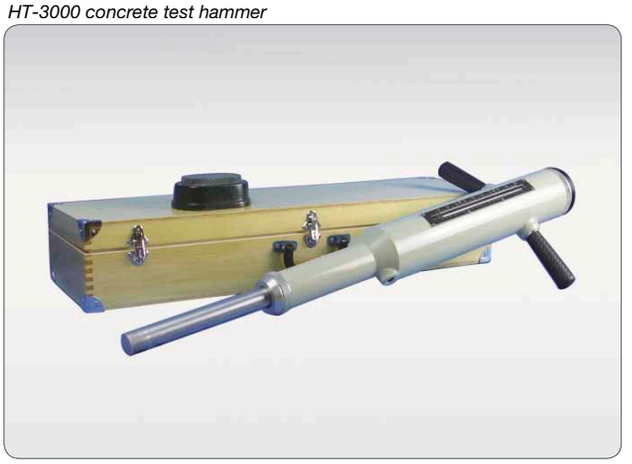
HT-20 Concrete test hammer

HT-3000 Concrete test hammer

HT-3000 is a heavy type Concrete Test Hammer, its kinetic energy of impact is 29.43J. It is extensively used for testing the concrete's quality of large concrete component, water conservancy project, railway tunnel, mines, bridges, heavy ways of roads, runways, building foundation beams and etc.

Model HT-3000	
Normal impact energy:	29.43 J
Strike hammer stroke:	75 mm
The friction force of pointer slider:	0.5±0.1 N
Spherical radius of strike rod:	25 mm
The rebound values calibrated on steel anvil:	63±2
Hammer weight:	2 Kg
Static friction between vernier and vernier shaft:	100-150g
Dimensions:	105×320×680 mm
Gross weight approx:	8 Kg

HT-3000 concrete test hammer



HT-1000 concrete test hammer

CALIBRATION ANVIL

STANDARD:
EN 12504-2; ASTM C805, D5873

Used for calibration of concrete test hammer (models HT series). Made of special alloy steel and supplied complete with traceable hardness certificate. It is essential for the periodical laboratory verification of the Rock classification hammer.

EL35-1530 Calibration anvil

GZ45 Calibration anvil

Type of calibration avil	Type of concrete test hammer	Normal impact energy	Rebound values calibrated on steel anvil	Weight
EL35-1530	HT-225A, HT-225P, HT-225V, HT-225W	2.207 J	80±2	17 kg
GZ45	HT-3000	29.43 J	63±2	45 kg
GZ45A	HT-1000	9.8 J	83±2	/

PULL-OFF STRENGTH (BOND STRENGTH)

STANDARD:
ISO4624, ASTM D4541 AND ASTM D7234

This method is particularly suitable for applications concerning testing repairs of concrete structures where the bond strength between two layers is an important factor. The same principle is applied to test the adhesive strength of different types of surface coatings like cement plaster, lime, wall plaster, etc. on its support.

Maximum pressure: 2.5 tons
Accuracy: 0.5%.

Features:
1. Serial communication port:
Communicate with the computer through RS-232 serial communication port through which stored test data can be transmitted to the computer.
Test results can be printed out by the provided software.
2. Sensor input port:
Through shielded wire of sensor and straight load sensor to measure adhesion force.
3. Zero adjustment potentiometer:
allow to manually adjust the initial value of sensor to zero.
4. Calibration potentiometer: calibrate the sensor

Packing List

- Actuator 1 piece
- Load Sensor 1 piece
- Display instrument 1piece
- Dolly(dia.10mm, dia.14mm, dia. 20mm and dia. 50mm, each type has 5 individuals)
- Cutting tool(dia. 10mm, dia.14mm, dia.20mm and dia.50mm, each type has 1 individual)
- Adhesive 3 pieces
- Software CD 1 piece

RAPID CONCRETE ALKALI TESTER

Rapid Concrete Alkali Tester

Portable Rapid concrete Alkali Content Tester tests the alkali content to prevent the alkali aggregate reaction in concrete construction.

With Ion Selective Electrode Method(ISE), the composite Potassium Ion Eletrode and composite Sodium Ions Eletrode rapidly test the Alkali content (%) under room temperature in the concrete: Fresh concrete, Wet concrete, Harden concrete, Power sample and Raw material: Cement, chemical addtitive, admixture.

Model NJAL-H

Power :	AC 220V
Working power:	DC3.6V
Measuring precision:	≤10%
Printer:	DC 5V
Storage:	100 data
PC Communication parameter:	2400 braud rate
Measuring time:	≤3min
Standby time:	>24 h
Range:	0.001%-30.000%
Measuring temperature:	0°c-45°c
Resolution:	0.001%
Acquisition cycle:	10min
Weight:	240g
LCD:	128*128
Result:	Oxidation sodium (%) Oxidation potassium (%), Alkali (%)

Packing List

- Rapid Concrete Alkali Tester's host
- Imported compound sodium ion selective electrode
- Imported compound potassium ion selective electrode
- Standard solution, Ion intensity regulator
- Portable printer
- Charger
- PC analysis software

RAPID CHLORIDE TESTER

Chloride is an important factor in inducing steel corrosion. In order to avoid premature corrosion of steel, concrete materials control chloride ion content of it very strict.

Rapid chloride tester

Features:

- Handheld Instruments have light weight and small size which easy for users to take with and on-site inspection. Printer to print data in any time is available for select. This run independently even without computer control. Bench Instruments have large-size LCD panel to indicate data and an embedded printer to print data easily.
- Unique anti- ion interference agent can prevent it from cyanide , ammonia oxidation effect of ions as well as manganese and lead made the combined effect of metal ions.
- Unique PC analysis software, which has a national computer software copyright.
- Unique linear regression coefficient calculation program make self-diagnostic instrument status available.
- Embedded standard formula can directly calculate concrete mixture chloride ion content.
- Direct output the unit results in a molar concentration and percentage.
- Mass storage of 100 data storage, continuous data record, safe and reliable.
- Software for testing and report preparation.
- Testing up to 6,9,12 cells simultaneously
- Documentation of each test result, easy to assemble, simple to maintain, watertight cells.

Model NJCL-H's unique feature

- Show calibration curves and color display, which can be saved and read.
- Directly to the built-in temperature compensation formula makes test results more intuitive.

NJCL-H	NJCL-L	NJCL-B	NJCL-C
Measurement accuracy:<10%	Measurement accuracy:<10%(Result<5%)		Measurement accuracy:<10%
Collect time: ≤3min	Collect time: 30s		Collect time: ≤3min
Weight:2.5kg		Weight:0.4kg	
Power: AC 220V		Weight:0.4kg	
Power: DC 7.2V		Power: DC 3.6V	
Temperature error:≤1℃		Power supply:1) DC 3.6V adapter 2)Lithium battery	
Printer power: DC 5V		Battery life: 12 months(8h/ day)	
Work temperature: 0 ℃ ~ 40 ℃			
PC Communication parameter:2400 baud rate			
Range:0.001%-30.000%(Cl^-),10^-5-10^-1(mol • L^-1)			

CHLORIDE ION PENETRATION

STANDARD: ASTM C1202, AASHTO T277

Chloride penetration meter

This test method allows evaluation of chloride permeability characteristics of concrete.
The test is performed to monitor the amount of electrical current passing through concrete cores or cylinders. A potential difference is maintained across the ends of the specimen, one of which is the negative end and is immersed in a sodium chloride solution, the other (positive end) in a sodium hydroxide solution. The total charge passed, in Coulombs, that is related to the resistance of the specimen to chloride ion penetration is measured.

Measuring technique: closed loop
maintained 60 V DC potential difference, passed current measured and integrated relative to time
Accuracy: ± 0.1 V, ± 1 mA

Packing List

- Controller
- Test software
- Cable
- Specimen holder 6pcs
- Automatic vacuum saturated machine
- PC(selectable)
- Printer(selectable)

Model DTL-A Chloride penetration meter

RAPID CONCRETE CHLORIDE MIGRATION TESTER

The equipment adopts international popular multi-usage work patterns to test the concrete Resist Chloride Ion penetration and Chloride migration and provides basic data for evaluation of chloride ion penetration environment durability design of concrete structures. This method is to evaluate the concrete resistance capacity to chloride ion diffusion, and then to provide the basic parameters with the design and durability of concrete structures and life assessment and prediction in the chloride ion erosion environment. Specimen data can be used as the basis for concrete durability mix design in chloride environment and concrete quality inspection and assessment.

Model NJ-RCM

Test channels:	6 channels, 9 channels, 12 channels, 16 channels optional
Output current range:	0~400 mA
Output current accuracy:	±0.1mA
Temperature accuracy:	±0.2mA
Output voltage:	0~60V (±0.1V), DC (adjustable)Unique patented 12 adaptive regulator technology
Input power voltage:	220V±10 /50Hz AC
Kernel:	32 embedded ARM core
LCD:	6.4 inch EPSON industrial touch screen
Surge mode:	Adaptive regulator mode

Features:
• 32 embedded ARM core, advanced high-speed processing performance.
• 6.4 inch EPSON LED industrial touch screen, display clear, rich content, intelligent operation, automatically control, easy to use.
• Accurate detection of 16 high-speed ADC, linearity error detection level to achieve 100PPM.
• 16 Channel 12 imported DAC,0 ~ 60 V adjustable voltage, single channel running time, the whole electric migration process is automatically controlled.
• Each channel independently breakpoint protection , power outages and power-down data storage, advanced technology, well-made, reliable performance, high accuracy
• Automatic short circuit protection to avoid equipment damage, each channel independent electronic switches, intelligent energy-saving , and maximize the lifespan of the instrument
• LCD display, with real-time display/print and analysis function, the computer screen can display the data at real-time, can be separated from Pc to use directly; after the testing, input the parameter can automatically calculate test result.
• Standard RS232 serial communications with fully automatic PC connection software can monitor the processing data; the PC can calculate the result and output the flux test report, and then print for analysis and archiving.
• Imported material fixture, high accuracy, easy and smart to use.
• Can simultaneously test two groups (6), three (9), four (12) or five (16) concrete block one time.
• With the latest smart-in-one vacuum saturated machine.

System Configuration:

• Rapid Concrete chloride migration tester host
• Specimen fixtures
• NJ-BSJ vacuum saturated machine

Experimental Methods:

• Cut the concrete sample into diameter 100mm, 50+/-2 mm thickness cylindrical test block
• Clean the test block in the ultrasonic.
• After cleaning the sample, install it on specimen fixture, inject the test solution, and connect the test host.
• Open NJ-RCM chloride migration coefficient tester host for electro migration experiments
• After the electro migration, split the sample along the axial, spray the silver nitrate on the split surface.
• Input the data into the host, it will automatically calculate the channel migration coefficient.

REBAR LOCATION AND CORROSION MEASURING SYSTEM

Applications:

Testing concrete cover thickness;
Test concrete member internal reinforcement position, rebar spacing, reinforcement position distribution;
Rebar corrosion.

Model GX-50B

Applicable steel-bar diameter:	dia.6mm~dia.50mm
Tested range of concrete cover thickness:	Low range:6mm~90mm; High range:7mm~180mm
Tested range of Steel-bar diameter:	dia.6mm~dia.50mm
Permissible error of Steel-bar diameter:	±1 grade
Working environment:	Temperature:-10°C~+40°C Dampness:<90%RH EMI: no Strong electromagnetic field
Power supply:	6 dry cells,work more than 30 hours

Corrosion specification

1. Automatically monitor the ambient temperature without the help of thermometer.
2. Permanently fixed cupric sulfate-copper electrode. No need to perfuse and change cupric sulfate saturated solution both before and after the test, in order to avoid damage to the environment and testers.
3. Two measurement methods: potential method and gradient method, with potential electrode and gradient electrode respectively.
4. Measuring Potential: ±2000mV;
5. Test accuracy: ± 1mV;
6. Measuring Space: 1-99 cm (adjustable)
7. Environment Requirement:
Ambient Temperature:-10°C~+40°C, to avoid direct exposure to the sun for a long time.
Relative Humidity:<90%RH;
Electromagnetic Interference: no strong alternating electromagnetic field.

Model GX-50B Rebar location and corrosion measuring system

CREEP TESTING MACHINE FOR CONCRETE

Concrete Creep Testing Machine is designed to determine of concrete cylinder and cuboid parts under constant pressure load over time, ie, the creep deformation of concrete. It is applicable for concrete creep deformation test under single-direction pressure at constant temperature in a humid-free environment.

Model TXB-1000

Maximum Testing Force:	1000kN
Measurement Range:	0-1000KN
Relative Reading error:	±1%
Compression space:	1200mm
Specimen dimension:	Dia. 150 × Height 300mm
Max Specimen quantity:	3 pcs
Spring Type:	Disc spring
Spring Compression Stroke:	50-52mm
Maximum Distance Between Upper Platen and Lower Platen (Compression space):	2500mm
Power Supply:	220V, 50Hz
Package dimension:	750mm×750mm×2800mm
Gross weight:	1200kg

Model TXB-1000 Concrete Creep Testing Machine

Model TXB-500

Maximum Testing Force:	500kN
Measurement Range:	0-500KN
Relative Reading error:	±1%
Spring type:	Compresstion spring
Spring Height:	300mm
Spring Compression Stroke:	52mm
Maximum Distance Between Upper Platen and Lower Platen (Compression space):	1500mm
Power Supply:	380V, 50Hz
Load machine dimension:	300mm×200mm×1150mm
Inside dimension:	1000mm×600mm×1000mm
Net weight:	About 800kg

Model TXB-500 Concrete Creep Testing Machine

Packing List

- One reaction frame suitable for 3 Nos. dia. 150 x height 300mm cylindrical sample(This frame can be custom-made as per clients' require)
- One pumping unit electrically operated(*user selectable*)
- One hydraulic jack
- One load gauge
- One pressure digital display
- Six pcs displacement sensors(*user selectable*)
- Dia. 150 x Height. 300mm Cylinder mould can be ordered seperately

CRACK MEASUREMENT MICROSCOPE

A high quality microscope designed for measuring crack widths in concrete members, masonry walls and other structures.
The apparatus operates by an adjustable lamp unit and the image is focused by turning a knob.

WYSK-100X Crack measurement microscope

Code	WYSK-100X	WYSK-40X
Magnification:	100X	40X
Measuring range:	1.6mm	4mm
Subdivision:	0.01mm	0.05mm
Dimensions:	50×23×138mm	50×23×138mm
Weight approx.:	550 g	550 g

CRACK MEASUREMENT MICROSCOPE

CH800-A Concrete Thicknes Tester

This instrument is used for nonmetallic board thickness testing such as concrete,rock,glass etc. The functions include thickness testing, data analysis, saving and transmission. It is a portable, efficient, precise and intelligent instrument.

Model CH800-A

Test Scope:	40mm-800mm
Permissible error:	for 40mm-600mm ±1mm for 601mm-800mm ±2mm
Data storage capacity:	32 group data
Working Temperature:	-10℃ ~ +40℃
Working Humidity:	≤90%RH
EMI:	no strong electromagnetic field
Batteries:	6 dry cells, work more than 30 hours

CRACK INTEGRATED DECTOR

Crack intergrated detector is mainly used for crack width and crack depth measurement of bridges, tunnels, buildings, raods and so on.
Powerful softward in windows system convenient to data process and analysis: Real USB tran to wrosmission, export data to word and excel, save and prin data.

CID-50 Crack Integrated Detector

Professional design:
1. Crack automatic indentification and calculation; real-time display.
2. Two detection methods: standard and simple depth measurement.
3. Standard ultrasonic transducer bracket precise and adjustable; free from scene marking-out, which can greatly improve the detection efficiency.
4. Image automatic recognition and width intelligent computing technology; crack position without adjustment.

Model CID-50

Hardware platform:	Embedded ARM 9 Harware platform, WinCe5.0 operatng system, true color, TFT Touch Screen
Crack Width Test Range:	Standard Probe: 0.01mm-6.5mm
Crack Width Test Accuracy:	Standard Probe:
Crack Depth Test Range:	10mm-500mm
Crack Depth Accuracy:	≤±0.02mm
Image Storage Format:	BMP or JPEG
Power Supply:	Rechargeable Lithium Battery
Working Time:	≥28 Hours
Working Temperature:	-10℃ ~ 50℃
Working Humidity:	≤90%RH
Net Weight:	1.8kg
Gross Weight:	4.6kg
Packing Size:	42 × 33 × 12.5cm

RESISTIVITY TEST

Digital resistivity 4 probe array meter

For assessing the possible rate of corrosion in reinforcing bars. The time at which corrosion of steel may commence and the rate at which it may proceed is dependent upon properties of the cement paste and the permeability of the concrete. Since the electrical conductivity of concrete is an electrolytic process, which takes place by ionic movement in the aqueous pore solution of the cement matrix, it follows that a highly permeable concrete will have a high conductivity and low electrical resistance.
Thus knowledge of the electrical resistance of a concrete can provide a measure of the possible rate of corrosion of steel embedded in it.

SR-4000 Digital resistivity 4 probe array meter

Model SR-4000

Measurement range:	0-2000 KΩ
Measure accuracy:	1 KΩ
Display stabilty:	±1 KΩ
Display mode:	LCD panel
Input resistance:	100 MΩ
Keep function:	Reading keep function
Battery operated:	12v, approximately 4-6 hours active operating time
Operation temperature:	-10℃ ~ 50℃
Dimension:	185×85×45mm

Packing List

- Controller
- Wenner 4-probe array
- Sponge plug
- Cable used for connecting controller and wenner 4-probe array
- Calibration Clock
- Conductive solution

CONCRETE WATER IMPERMEABILITY APPARATUS

This apparatus is used to determine the depth of penetration of the water into the concrete (impermeability) under known time and pressure. The unit accepts concrete cubic, cylindrical or prismatic specimens having “max. dimensions” of 150x150x150 mm.
The specimen is put into the test chamber, clamped with suitable flanges and round gaskets. A known water pressure is applied on the specimen’s surface for a known time. A manometer checks constantly the applied water pressure.

Overall dimensions: 1230×745×1265mm
Weight approx.: 250 kg

Model TPCW-04

Working pressure:	4Mpa/cm^2
Number of Specimen:	6pcs
Motor Power:	90W
Working Methods:	Microcomputer automatic pressurization
Motor Speed:	1400r/min
Voltage:	380v

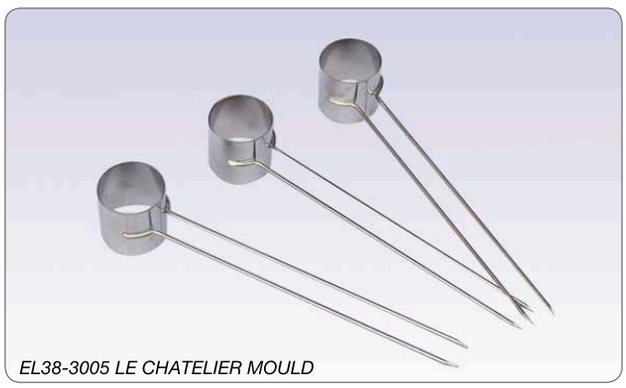
Control Panel

TPCW-04 Concrete water impermeability apparatus

SOUNDNESS OF CEMENT

Le Chatelier mould

Strictly conforming to EN standard. Individually checked, supplied complete with certificate of conformity.
EL38-3005 weight approx: 30 g



EL38-3005 LE CHATELIER MOULD

Le Chatelier water bath

For use with Le Chatelier moulds for the determination of the soundness of cement paste. Stainless steel internal chamber housed in a stainless steel insulated exterior case. Power 3000 W capable of reaching the boiling point in 30 minutes.

MODEL LC-31A	
Max temperature:	100 celcius degree
Effective capacity:	3L
Heating time controlling:	3 hours
Heating elements:	3KW
Power:	AC220V, 50HZ
Dimension:	510x300x400mm

Model LC-31A Le Chatelier water bath

Le Chatelier soundness kit

For checking the state of the split cylinder of Le. Chatelier Mould as well as measuring the state of the split cylinder of Le. Chatelier Mould as well as measuring the distance between two pointers of the mould before and after curing to determine the soundness of cement specimen.
Counter weight 300g
Min. division of scale 1mm
Net weight ≈1.65kg

Model LD-50 Le Chatelier soundness kit

LENGTH COMPARATOR

This apparatus is used to determine the changes in length of cement prisms in the accelerated soundness test. It is also used to measure length changes of 40x40x160 mm, and other sizes of cement and concrete specimens. The instrument consists of an analogic or digital dial gauge, which is mounted on a steel frame. The top anvil is adjustable to suit the required specimen.
Valid testing space is 156-305mm.
Model BC156-300 is equipped with dial indicator with a range of 10mm and resolution of 0.01mm.
Model BC-II is equipped with digial indicator with a range of 12.7mm and resolution of 0.001mm.

BC156-300 Length comparator

Digital indicator

RESISTIVITY TEST

Digital resistivity 4 probe array meter

For assessing the possible rate of corrosion in reinforcing bars. The time at which corrosion of steel may commence and the rate at which it may proceed is dependent upon properties of the cement paste and the permeability of the concrete. Since the electrical conductivity of concrete is an electrolytic process, which takes place by ionic movement in the aqueous pore solution of the cement matrix, it follows that a highly permeable concrete will have a high conductivity and low electrical resistance.
Thus knowledge of the electrical resistance of a concrete can provide a measure of the possible rate of corrosion of steel embedded in it.

SR-4000 Digital resistivity 4 probe array meter

Model SR-4000

Measurement range:	0-2000 KΩ
Measure accuracy:	1 KΩ
Display stabilty:	±1 KΩ
Display mode:	LCD panel
Input resistance:	100 MΩ
Keep function:	Reading keep function
Battery operated:	12v, approximately 4-6 hours active operating time
Operation temperature:	-10℃ ~ 50℃
Dimension:	185×85×45mm

Packing List

- Controller
- Wenner 4-probe array
- Sponge plug
- Cable used for connecting controller and wenner 4-probe array
- Calibration Clock
- Conductive solution

CONCRETE WATER IMPERMEABILITY APPARATUS

This apparatus is used to determine the depth of penetration of the water into the concrete (impermeability) under known time and pressure. The unit accepts concrete cubic, cylindrical or prismatic specimens having “max. dimensions” of 150x150x150 mm.
The specimen is put into the test chamber, clamped with suitable flanges and round gaskets. A known water pressure is applied on the specimen’s surface for a known time. A manometer checks constantly the applied water pressure.

Overall dimensions: 1230×745×1265mm
Weight approx.: 250 kg

Model TPCW-04

Working pressure:	4Mpa/cm^2
Number of Specimen:	6pcs
Motor Power:	90W
Working Methods:	Microcomputer automatic pressurization
Motor Speed:	1400r/min
Voltage:	380v

Control Panel

TPCW-04 Concrete water impermeability apparatus

PREPARATION OF MORTAR CUBES

STANDARD: ASTM C87, AASHTO T71

Three gang cube mould

Machined out of High lead naval brass, this three gang 2" x 2" cube mould makes 3 compression test cubes at a time. This mould casts cubes in a diagonal arrangement with a detachable brass base plate.
Wing nut clamps lock the mould to the base while stainless thumbscrews secure halves tightly together. Large screed off upper surface area makes this mold a preferred choice. Optional accessories include an all brass fitted top, or a cover plate designed to pour molten sulfur capping compound down through taper holes for testing compressive strength.

Model No	Dimension(mm)	Weight(kg)
PM-BS50	2" x 2" cube mould	8.4
EL39-0410	50×50 cube mould	6.5

EL39-0410 cast iron three gang cube mould

PM-BS50 brass three gang cube mould

Model No	Dimension(mm)	Weight(kg)
SM-S41A	40 x 40 x 160	9.2
SM-S41B	40 x 40 x 160	12
SM-S41C	40 x 40 x 160	10
SM-C41	40×40×160	6.5

PRISM MOULDS

STANDARD: BS 3892-1, 4551-1, EN 196-1, 413-2, 459-2, 1744-1,1015-10,11, ISO 679 EN 13454-2.

SM-S41A/B/C are made of steel. The mould is used for casting specimens of cement aggregate combinations for measuring the potential expansive alkali reactivity.
SM-C41 Three gang mould for prisms 40 x 40 x 160mm is made of steel, base plate is made of cast iron.

SM-S41A

SM-S41C

SM-S41B

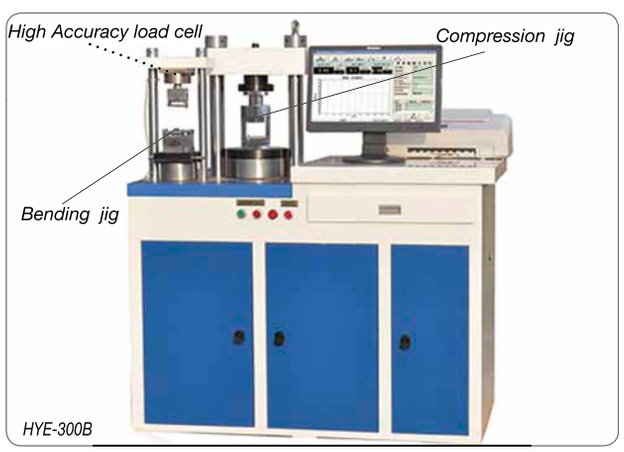
SM-C41

FLEXURAL & COMPRESSION TESTING MACHINE

It uses fully computer controlled and standard keyboard to input the data. It can automatically save and process the data and automatically print the report. It has constant loading rate (you can freely set the loading rate) and automatic overload protection device. It is mainly used to determine the compressive strength and anti-flex strength of the cement specimen.

Code	HYE-300	HYE-300A
Capacity:	300kN	300kN
Accuracy class:	Class 1	Class 1
Compression space:	180mm	180mm
Piston stroke:	80mm	80mm
Size of compression plate	Dia. 120mm	Dia. 120mm
Dimension(load frame)	1200 x 600 x 1300	850 x 350 x 1300
Power:	1.5	1.5
Weight:	450	400

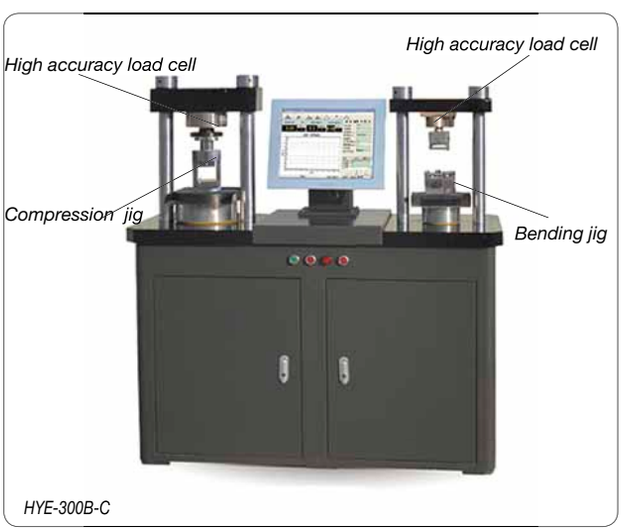
HYE-300A



HYE-300B

HYE-300

Code	HYE-300B	HYE-300B-C
Capacity(compression):	300kN	300kN
Capacity(bending):	10kN	10kN
Accuracy class:	Class 1	Class 1
Compression space (bending mm):	180	180
Piston stroke(bending mm):	60	60
Compression space(compression mm):	180	180
Piston stroke(Compress mm)	80	80
Size of compression plates(mm)	Dia. 120	Dia. 120
Dimension(load frame mm):	1200 x 600 x 1300	1200 x 500 x 1300
Power(kW):	1.5	1.5
Weight(kg):	500	540



HYE-300B-C

CEMENT FLEXURAL TESTING MACHINE

It is used for bending strength of cement mortar and other non-metal brittle materials

Model DKZ-5000

Max. lever ratio:	10:1
Double lever ratio:	max 50:1
Loading speed:	50N/S
Capacity:	1000N for single lever 5000N for double lever
Precision:	±1%
Upporting roller space:	100±0.1mm

DKZ-5000 Cement Flexural testing machine

CONE PENETROMETER METHOD

STANDARD: BS 1377, 1924-2, EN DD ENV 1997-2

Model EL24-0540

Dial indicator:	150 mm diameter, indicator point incorporates friction/gear system
Height adjustment:	Rapid, using integral clamping mechanism
Cone release:	Manual
Cone:	1 x 30°, 150 mm test cone included
Base:	casti iron, adjustable leveling feet
Weight(approx):	20 kg

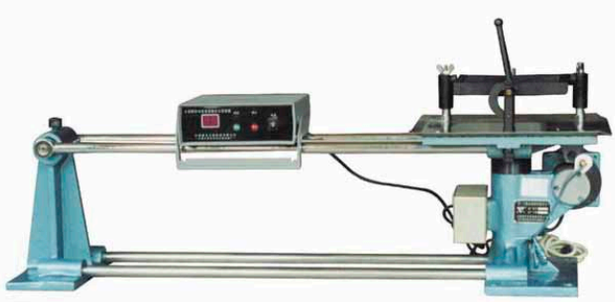
EL24-0540 Cone Penetrometer

JOLTING TABLE

This machine consists of a mould table seated on a rotating cam driven at 60 revolutions per minute. The apparatus is supplied with main switch box, push button start/stop control, and automatic stop control at end of test.

Model EL39-1150/01

Vibration part of the total weight:	20 ± 0.5 kg
Amplitude:	15mm ± 0.3 mm
Vibration frequency:	60 times/60 seconds±1 second
Power supply voltage:	220 V 50 Hz



EL39-1150/01 Jolting table

BULK DENSITY OF CEMENT

STANDARD: ASTM C91, C110

Apparatus for the measurement of bulk density of cement

62-L0060 Apparatus is used to determine the bulk density of cement as specified by the "Commission des méthodes d'essai des matériaux de construction". It consists of a sieve funnel, an unit weight measure 1 litre capacity, a tripod, and straightedge.

Overall dimensions: 350x350x520 mm
Weight approx.: 3 kg

62-L0060 Apparatus for the measurement of bulk density of cement

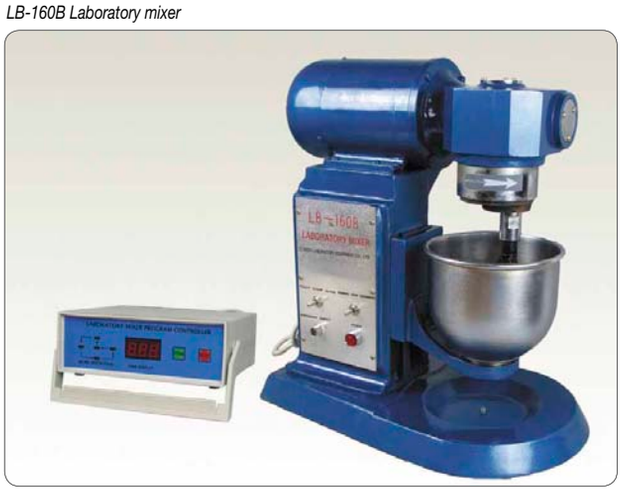
LABORATORY MIXER

This mixer is designed to mix mortars and cement pastes to the requirements of the above standards.The mixing paddle has a planetary motion and is driven by a motor with a microprocessor based speed and program controller. The mixer can be operated either in an automatic or manual mode. When the mixer is used in the manual mode, the two mixing speeds can be changed by means of a rocker switch, without switching off the motor. In the automatic mode any one of the pre-set mixing programmes may be selected.

Model LB-160B

Power:	380V
Width of mixing blade:	135 mm
Mixing bowl capacity:	5 L
Rotation speed of mixing blade revolution(r/min):	low: 140±5 62±5 high: 285±10 125±10
Net weight(approx):	70 kg

LB-160B Laboratory mixer



CEMENT NEGATIVE PRESSURE WET SIEVING APPARATUS

This apparatus is widely used to determine cement fineness. Air flow takes the role as dynamic media. The whole system is under negative pressure, specimen under test will be in flow state under the action of airflow sprayed by the rotating gas nozzel, and travel along with airflow. Fine particles whose size smaller than sieve aperture are extracted away, leaving particles whose size larger than sieve aperture.

Model FSY-150

Voltage:	AC220V
Power:	900W
Feeding:	25g
Fineness range:	0.030~1.000mm
Sieve time range:	0-599sec
Negative pressure:	4000-6000 Pa
Noise:	75db

AUTOMATIC BLAINE FINENESS(AIR PERMEABILITY)APPARATUS

STANDARD: ASTM204-80

Used to determine the particle size of Portland cement, limes and similar powders expressed in terms of their specific surface. It consists of a stainless steel cell, perforated disc and plunger. An U-tube glass manometer is fit to the steel stand. The set is supplied complete with rubber aspirator and pack of filter paper.

FBT-9 Automatic Blaine Fineness(Air Permeability Apparatus

Model FBT-9

Inside diameter of permeability cell:	dia. 12.7±0.05mm
Height of sample in the cell :	2.15±0.5mm
Perforated disk:	35holes
Diameter of the hole :	1±0.10mm
Disk thickness:	0.1-1mm
Voltage:	220V
Timing range:	0.1s-500s
Timing precision:	0.2s
Testing precision:	better than 1%
Temperature range:	8-34°C

FSY-150 Cement Negative Pressure Wet Sieving Apparatus

SLURRY TEST KIT

STANDARD: API RP 13B-1.

The Slurry Test Kit is a portable kit with materials and equipment for measuring slurry properties. With this kit, the user can obtain laboratory-quality measurements of Marsh funnel viscosity, specific gravity or density and sand content.
These tests comply with API Recommended Practice for Field Testing Water Based Drilling Fluids, API RP 13B-1.

Marsh funnel viscometer

The Marsh funnel viscometer is made of rugged, break-resistant plastic that resists to the temperature change deformation.
Volumetric accuracy is assured. Plastic handle provides insulation for user's hands.
A metal orifice assures accurate readings.
The Marsh funnel is used for routine viscosity determinations on almost every drilling rig. Supplied complete with measuring cup 946ml capacity and 2000ml mud cup.

Sieve: 200 mesh
Top dia.: 150 mm
Nozzle length and internal dia.: 50x5 mm
Total length: 355 mm
Weight approx.: 0.5 kg


64-L0056 Marsh funnel viscometer

Mud balance

The mud balance provides a simple method for the accurate determination of mud density. The durable construction of the mud balance makes it ideal for field use. Principally the balance consists of a base and graduated arm with cup, lid, knife-edge, rider, built-in spirit level, and counter-weight. The constant volume cup is affixed to one end of the graduate arm and the counter weight on the opposite end. A plastic carrying case is provided that holds the balance in working position.
Model YM series mud balance is made of plastic.
Model XYM series mud balance is made of stainless steel.

Model	Measurement range	Accuracy	Mud capacity
YM-1/XYM-1	0.96-2.0g/cm^3 / (8.0-171b/gal)	0.01g/cm^3	140cm^3
YM-2/XYM-2	0.96-2.5g/cm^3 / (8.0-211b/gal)		
YM-3/XYM-3	0.96-3.0g/cm^3/ (8.0-251b/gal)		
YM-5/XYM-5	0.7-2.4g/cm^3 / (5.8-201b/gal)		
YM-7/XYM-7	0.1-1.5g/cm^3 / (0.8-131b/gal		

Sand content test kit

Sieve analysis apparatus for determining the sand content of drilling muds. The kit consists of a special 200 mesh sieve 2½" dia., fastered inside a collar upon either end of which fits a small funnel.


64-L0064 Sand content test kit


YM-3 Mud balance


XYM-1 Mud balance

AIR CONTENT METER

STANDARD:
EN 1350-7,BS 1881-106,ASTM C231

The Meter is the industry's most popular kit for testing entrained air.Whether going into the ready mix truck or coming down the chute, it gives fast results. Always accurate. The kit contains everything needed to perform the test and — very importantly — to keep the unit in calibration.

It measures the air content in fresh mix concrete. The test procedure equalizes a known volume of air in the pressure chamber, with the unknown value of entrained air in the concrete-filled base. The amount of air entrained is then read on the meter's gauge as the direct percentage (to the nearest 0.1%) of air entrained in the concrete. The test is based on Boyle's law. Also known as "Type B". See full Instructions or refer to ASTM.

This modern meter utilizes the principle of Boyle's Law and consists of a flanged cylindrical vessel and cover assembly incorporating a pressure gauge air pump and valves. The base can also be used for unit weight measurement of fresh concrete and aggregates. Supplied complete with calibration set.

LS-546 Air content meter

Code	LC-615	LS-546
Capacity (L):	7	1
Air content range	1-10%	0-20%
Accuracy	± 0.1%(1%-8% of air content); ± 0.2%(8%-10% of air content)	± 0.1%(1%-8% of air content); ± 0.2%(8%-12% of air content) ± 0.3%(12%-20% of air content)
Dimension(mm)	dia. 330 x 500	200 x 320
Weight(Kg)	10	4

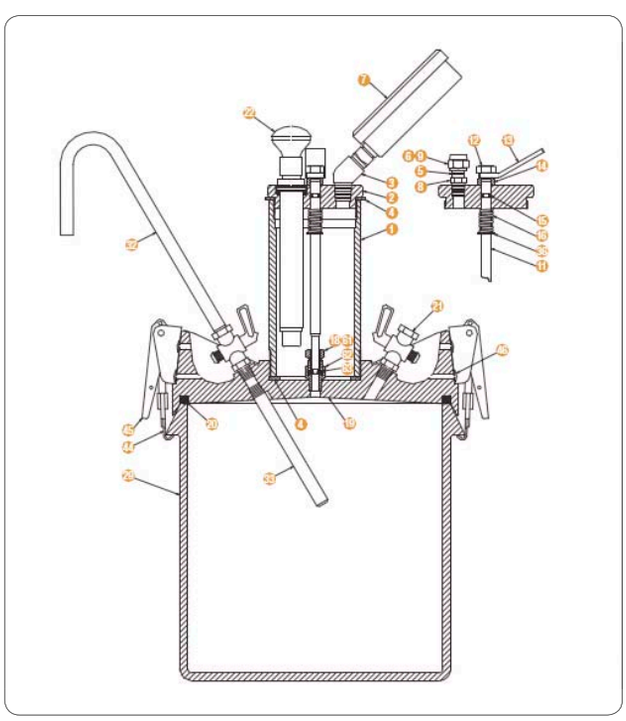
LC-615 Air content meter(SANYO)

B-2030 Air content meter(FORM+TEST)

AIR CONTENT METER(CONTINUED)

The air meter unit consists of 2 main parts: the base (measuring chamber) and the cover assembly. The cast aluminum base has machine-flanged rims. The interior surfaces of the base and surfaces of rims, flanges and other component parts are machined to facilitate frequent water clean-up. The unit is designed for easy disassembly in order to replace worn or damaged parts in the field.

LA-0316 Air content meter(FORNEY)



The Super Pump is an important part of the Air Meter. It must be properly maintained to prevent air leakage. O-rings on the top of the pump and on the inside seal the unit. When the O-rings deteriorate, air can leak into the chamber and or debris can enter the pump.

Code	LA-0316	B-2030
Capacity (L):	7	1
Air content range	0-10%	0-50%
Accuracy	± 0.1%(1%-6% of air content); ± 0.2%(6%-10% of air content)	± 0.1%
Dimension(mm)	dia. 330 x 500	dia. 200 x 320
Weight(Kg)	10	4

Parts and Accessories

Roller Meter - Syringe, 3 oz	
Tamping Rod, 12 in (30.5 cm) with 5/8 in (15.9 mm) rounded tip	
1	Pressure Chamber
2	Pressure Chamber Cap
3	Chamber Elbow
4	Chamber Gasket, two required (top & bottom)
5	Air Bleeder Valve Assembly
6	Air Bleeder Valve Cap
7	Gauge for Press-Aire Meter
8	Air Bleeder Valve Stem
9	Air Bleeder Gasket
10	Needle Valve Stem
11	Needle Valve Stem
12	Needle Valve Nut
13	Needle Valve Lever
14	Needle Valve Spacer
15	Needle Valve O-Ring
16	Needle Valve Spring
18	Needle Valve Seat
19	Lid
21	Lid Petcock, Instruction label
29	Aluminum Unit Weight Bucket - Base- .25 cu ft (7.1 L)
36	Needle Valve Stem O-ring, Gauge Glass, Latch Stud
44	Latch Clamp Tab
45	Latch Assembly for Lid
46	Pan Hd Screw, HD #10 x 1/2 in
61	5/16 in WB Nut
62	5/15 in x 1/8 in Adapter
63	O-ring, Needle Valve, O-ring, Super Pump Seal, O-ring, Super Pump Piston Seal, Super Pump Check Valve
20	O-ring Lid Seal

SOIL SAMPLING

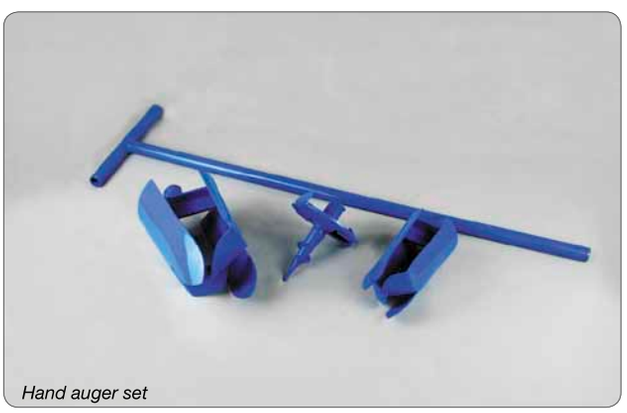
Hand Auger Set

STANDARD: ASTM D420, D1452 / AASHTO T86, T202 / CNR a. VI n. 25

Hand auger set are suitable for hand-boring in cohesive soils or sands and gravels, above the water table to a depth of 5 or 6 metres.

Soil Auger Heads are constructed of heavy duty steel plates forming an open tube partly interlocking at the cutting end. Two diameters are available 100 mm or 150 mm.
The Gravel Auger Head comprises a one piece steel casting with a spiral point and two clap plates designed to close when lifting samples from the borehole. Its diameter is 150 mm.

Model	Description
16-T0006/A	Hand auger head 100 mm dia.
16-T0007/A	Hand auger head 150 mm dia.
16-T0008/A	Spiral soil auger head 25 mm dia.
16-T0009/A	Dutch bucket auger head 75 mm dia.
16-T0009/A1	Dutch bucket auger head 100 mm dia.
16-T0009/A2	T-Handle
16-T0009/A3	1 m Extension rod
16-T0009/A4	1.2 m Extension rod



Hand auger set

Dutch Bucket auger set

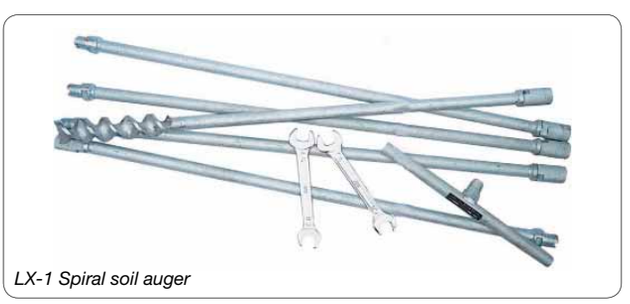
Soil Auger

YZ-1 Sampling equipment to take undisturbed soil sample.

YZ-1

Spare parts *YZ-1*

- Bulldozer
- Drill pipe: metal struction with scale
- Drill cylinder: 100ml
- Specimen cup: 100ml



LX-1 Spiral soil auger

Model LX-1

Auger head:	Φ50mm x 200mm
Drill pipe length:	5m
Weight:	16Kg
Drill pipe with scale	

AUGER POWER HEAD

Auger power head

Used in conjunction with sampling tubes to obtain disturbed or undisturbed samples of soils. The augers are not included and have to be ordered separately. (See accessories)

APH-03 auger power head

Model	Drilling hole dia (mm)	Drilling hole depth (mm)	Weight (kg)
APH-01	30, 40, 50, 60	500-700	11-12
APH-02	80, 95	500-700	14-15
APH-03	120, 150, 180, 200, 250, 300	500-700	14-22

Accessories for both models

Auger:
30, 40, 50, 60, 80, 95, 120, 150, 180, 200, 250, 300mm dia. selectable;
500, 650, 700, 800, 900, 1200, 1400mm length selectable.
Note: It can be equipped with different diameter and length of augers according to the user's requirements.

SAND DENSITY CONE APPARATUS

ASTM STANDARDS

35-T0129

Sand Cone apparatus 6 inch(152 mm)
5 litre plastic container for sand cone
Base plate with 6.5 inch(165 mm) diameter hole

35-T0129 Sand density cone apparatus

SPEEDY MOISTURE TESTER

The speedy moisture tester measures specimen weight before and after drying, then get Percentage of moisture and dry weight, percentage of moisture, humidity in the specimen. It is mainly composed of a balance and a far IR drying oven. Mini-printer need to be ordered separately.

XY-105MW Speedy moisture tester

Model XY-105MW	
Capacity:	110g
Division:	5mg
Repeatability:	0.2%
Readability:	0.02%
Temperature range:	room temperature-200 °C
Temperature accuracy:	±1 °C
Dry by:	Halogen lamp
Heat power:	480W
Power:	AC 220V 50HZ

SOIL SAMPLE RINGS AND CONTAINERS

Soil sample rings are stainless steel rings made of seamless tubes, smooth inside and outside. The bottom of the ring has a cutting edge.

Stainless steel soil sample rings

Model	Dimensions mm	Capacity cm^3
NS-09	¢79.8×20	50
NS-10	¢61.8×20	30
NS-11	¢50.4×50	100
NS-12	¢50.4×50 as a complete set	100
NS-13	¢70×52 with Stainless Steel Caseback	200
NS-14	¢61.8×40	200

Aluminum Soil Sample Containers

Model	Dimensions mm	Thickness(mm)
QL1-A	¢100×55	0.8
QL1-B	¢100×50	0.8
QL1-C	¢75×40	0.8
QL1-D	¢70×38	0.8
QL1-E	¢55×35	0.5
QL1-F	¢50×30	0.5
QL1-G	¢40×25	0.5

Aluminum Soil Sample Containers

Stainless steel soil sample rings

SAMPLE REDUCTION

Mortar and pestle

The ceramic mortar & pestle are used to gently crush individual particles for chemical tests.

STANDARD: BS 1377:2/ ASTM D421

TPM series Mortar and pestle

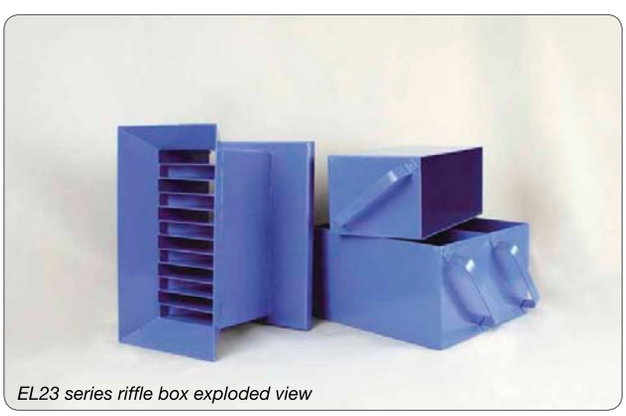
Model	Diameter(mm)
TPM-60	60
TPM-80	80
TPM-100	100
TPM-130	130
TPM-160	160
TPM-216	216
TPM-254	254
TPM-305	305

RIFFLE BOXES (SAMPLE DIVIDERS)

STANDARD: EN 932-1, 932-2 – ASTM C702

For the rapid preparation of samples, i.e. division into two representative portions. Detailed below is a range of dividers, each constructed of heavy gauge sheet metal, with particular attention given to reinforcement of the partitions to maintain the accuracy of the slot dimensions.
The units offered are supplied in a range of sizes from 7 mm to 64 mm slots.

Model	Max. size sample(mm) BS	EN	Slot width(mm)	No. of slots	Approx Capacity (kg)
EL23-3000	4.5	3.5	7	12	0.3
EL23-3050	8.5	6.5	13	12	2.0
EL23-3070	10.0	7.5	15	12	2.0
EL23-3100	12.5	9.5	19	10	4.0
EL23-3150	16.5	12.5	25	10	4.0
EL23-3170	20.0	15	30	10	4.0
EL23-3200	25.0	19	38	8	11.0
EL23-3300	33.0	25	50	8	14.0
EL23-3350	42.5	32	64	8	18.0



EL23 series riffle box exploded view

PLASTIC LIMIT TEST SET

22-T0041 Plastic limit test set

STANDARD:
ASTM D4318 / AASHTO T90 / BS 1377:2
UNE 103-104 / UNI 10014 / NF P94-051

22-T0041 PLASTIC LIMIT TEST SET

Accessories

- Plastic limit plate 300×300 mm
- Stainless steel rod 3 mm dia
- Mixing dish 120 mm dia
- Moisture tin 75 mm dia. ×30 mm

Each item can be ordered individually.

DIGITAL LIQUID PLASTIC LIMIT UNITED DEVICE

STANDARD: ASTM D4318

The equipment is used to determine liquid and plastic limits of soil, thus to provide reliable data to classify soil types, calculate natural consistency and plasticity index. Digital display technology is adopted for this machine and automatical measurement can be performed.

DLP-100B Digital liquid plastic limit united device

Model DLP-100B

Max. measuring range:	22mm
Resolution:	0.1mm
Nonlinear error:	Superior than 2%
Contact sensitivity:	>10M
Cone weight:	76g+-0.1g; 100g+-0.1g
Cone angle:	30°+-2°
Measuring Time:	5 Second
Working voltage:	200V+/-10% 50HZ
Continuous working period:	8 hours
Dimension :	300x230x420mm
Weight:	5.3kg

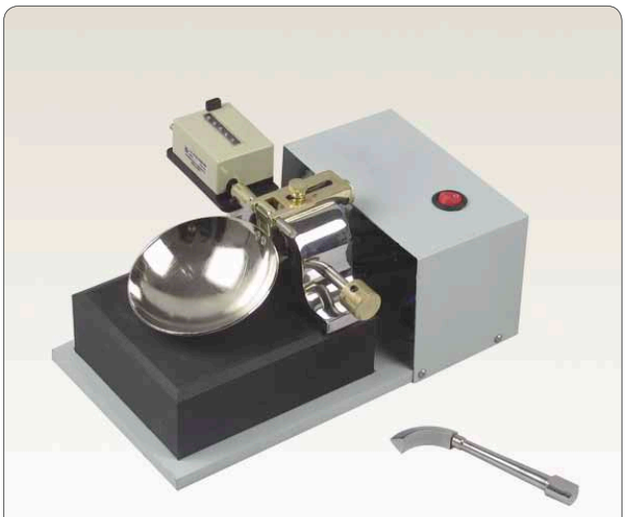
LIQUID LIMIT DEVICE

STANDARD: ASTM D4318/BS1377:2

The Liquid limit device is used to determine the moisture content at which clay soils pass from a plastic to a liquid state.
Different models are available conforming to the various specifications in use. They are identical in shape and different generally according to type of base and cup weight. We can supply two versions: hand operated model 22-T0031 and motor operated model 22-T0031/E.

Spare parts

- Removable brass cup, spare cup with roughened surface for use with low plasticity sandy soils.
- Adjustable crank and cam mechanism
- Blow counter and base
- Grooving tools, to be ordered separately.



22-T0031/E Motor operated model *Grooving tools*

ELECTRIC RELATIVE DENSITY TESTING APPARATUS

It is suitable for incohesive soil particle size < 5mm and samples with particle size of 2-5mm is not more than 15% of total samples to determine maximum density and minimum void ratio to calculate the relative density.

Model TPJDM-1E

Metal container:	250 ml
Inner dimension of container:	Dia. 50 mm, Height 127mm
Compaction rammer:	1.25 kg
Fall height of rammer:	150 mm
Diameter of rammer:	50 mm
Compaction frequency:	32 TPM
Timing range:	0-15 minutes
Power:	120W
Voltage:	220V, 50HZ
Net weight:	40kg
Dimension:	500x300x940 mm

TPJDM-1E Electric Relative Density Testing Apparatus

RELATIVE DENSITY APPARATUS

33-T0063 Relative density of cohesionless soil test sets

This method, in the EN standard, covers the determination of the maximum dry density and water content of cohesionless materials when compacted using a vibrating table. Materials for which yhis method is applicable may contain up to 12% by mass fines (<0.063 mm). The maximum particle size of the materials to be tested is 80 mm. This method applies to mixtures to be used in road construction.

Model 33-T0063

Vibration frequency:	3600 r.p.m.
Amplitude range:	0-2mm
Vibrator type:	electromagnetic
Table size:	600x800mm
Vibration time range:	0-99 Hours
Power:	380V, 1.5Kw
Net weight:	240Kg

SAND REPLACEMENT COMPLETE SET

STANDARD: BS 1377, 1924

This equipment is used to determine the dry density of in-situ soils. Apparatus is included which satisfies BS, ASTM and AASHTO specifications.

SR-100 Sand replacement complete set

Sand Replacement Pouring Cylinder 110 mm
Calibration Container 100 mm x 150mm x 200 rim
Tray with 100 mm central hole, 300 mm square, 40mm height galvanised steel

SR-150 Sand replacement complete set

Sand Replacement Pouring Cylinder 150 mm
Calibration Container 150 mm
Tray with 150 mm central hole, 300 mm square, galvanised steel

SR-200 Sand replacement complete set

Sand Replacement Pouring Cylinder 215 mm
Calibration Container 200 mm x 250mm x 350 rim
Tray with 200 mm central hole, 500 mm square, 50mm height, galvanised steel

Sand Replacement Complete Set

SOIL PERMEAMETER

Model TPT-55 soil permeameter is used to determine the permeability coefficient of the soil, The whole system is compact. Reasonable design, Convenient to disassemble and assemble, equable stress (use the hand wheel to do the rotary extrusion in the center). All accessories made of high quality cuprum except frame. There are two Position-limit flight of steps on the protective ring, during the process of pack stop-hydrosphere, not only assure the sample will not hang, but also protect cutting ring and control the deformation degree of rubber ring.

TPT-55 soil permeameter

Model TPT-55

Specimen's dimension:	dia. 61.8×40mm
Pressure resistant performance:	200 Kpa
Max water leakage:	100 Kpa
Weight:	3.5kg

Model TPT-70

Inside dia. of cylinder mould:	100mm
Height of cylinder:	400mm
Three measuring pressure holes	
Distance between the measuring pressure pipe:	100mm
Dimension:	400×226×146mm

Model TPT-70 is used to determine the penetration coefficient when the sand soil and the incoherence soil which has few broken-stones to carry on the permeability test under constant head.

TPT-70 soil permeameter

CONE PENETROMETER

Cone Penetrometer

STANDARD:
BS 1337/2, NF P94-052,1

Comprising

- a cast aluminium base
- 150mm dia. dial with 0.1mm subdivisions
- calibrated cursor
- automatic zeroing device
- release button
- micrometric displacement device
- penetration test cone and two sample brass cups

Model CT-M Cone Penetrometer test method for Liquid Limit is based on the relationship between the moisture content and the penetration of a cone into a soil sample.

CT-M Cone Penetrometer

PAVEMENT MATERIALS STRENGTH TESTER

This machine is used for CBR Test, Unconfined Strength Test, Elastic Modulous Test for Pavement Material.
This testing machine can also test all kinds of adhesive materials and stabilized soil specimen's unconfined compression strength and indirect tensile strength, test CBR for soil and pavement materials, test asphalt mixture's hot stability and anti-plastic flow-stability and flow value.
Adjustable flat top plate can automatically ascend and descend to leveling.
The exposed part of turn screw have protective cover, it can avoid the screw exceed the position and take off in operation, and avoid the screw be jammed by other materials as well.

Model MQS-2

Max.rated loading:	100KN
Max.displacement distance for screw plate:	200mm
Merchanical speed:	high 50mm/min, low 1mm/min
Manual Speed:	1/6mm/each cycle of crank
Motor specification:	550W, 140r/min
Dimension:	507x430x1390mm
Weight:	approx 120kg

MQS-2 Pavement Materials Strength Tester

GEOSYNTHETIC MATERIAL HORIZONTAL PERMEABILITY TESTING MACHINE

The whole machine is made of stainless steel(No.304 which thickness is 1.1mm), with smooth surface and no corrosion.

Component:

1.Permeability pressure chamber: include alum.alloy pressure chamber, organic-glass container, pressure plate and latex gasket
2. Normal force loading device: include pressure gauge(grade 0.4/stainless steel, 0-0.6MPa), adjusting valve, switch, tube, loading frame and etc.
3. Permeability piezometer pipe, water input switch, water adjusting device.

Model ST-2

Specimen size:	Width:100mm; Thickness:3-10mm Length: 40mm
Normal force:	0~500kPa
Constant head adjusting range:	0~800mm

All made of stainless steel

ST-2 Geosynthetic material horizontal permeability testing machine

PROCTOR MOULDS

Used for determining the relationship between the moisture content and density of compacted soil. Made of plated steel. Includes collar, mould body and base plate.
Different models are available conforming to the various specifications in use. They are identical in shape and slightly differ in diameter and capacity.

Model	Int. dia. mm	Body height mm	Weight approx. kg
ASTM models			
33-T0070	101.6	116.4	7
33-T0071	152.4	116.4	9
33-T0073	152.4	116.4	9.5
EN models			
33-T0070/E	100 ± 1	120 ± 1	5
33-T0071/E	150 ± 1	120 ± 1	8.9

PROCTOR RAMMERS

Used to compact the soil sample in the Proctor moulds. Made of plated steel. Guide sleeve with vent holes. Different models are available conforming to the various specifications in use.

Model	Rammer mm dia.	Free fall height mm	Weight approx. kg
ASTM models			
33-T0075	50.8	305	3
33-T0076	50.8	457.2	5.3
EN models			
33-T0075/E	50.0 ± 0.05	305 ± 3	3.6
33-T0076/E	50.0 ± 0.05	457 ± 3	6.3

ASTM proctor moulds and rammers

CBR MOULDS AND ACCESSORIES

The equipment is manufactured from high quality, long-lasting material and with regular maintenance will give years of satisfactory performance.

ASTM CBR Mould

Model	Description
34-T0090	CBR mould complete with collar and perforated base plate. Plated steel, 6 in. (152.4 mm) dia. x 7 in. (177.8 mm) body height
34-T0091	Spacer disc with "T" handle. 515/16 in. dia. (150.8 mm) x 2.416 in. (61.4 mm) high
34-T0094	Annular surcharge weight, 2.27 kg
34-T0095	Slotted surcharge weight, 2.27 kg
34-T0098	Cutting edge
34-T0097	Solid CBR base
34-T0099	Straight edge. 3x30x300 mm

British standard CBR Mould and accessories

Model	Description
34-T0090/B	CBR mould body with base plate, made from plated steel threaded on both ends. 152mm ID x 127mm high, 50mm high collar
34-T0090/BC	CBR mould with three plugs collar
34-T0090/B6	“C” spanner. To mount and to dismount the collar from the mould body, 1kg
other accessories available on request	

ASTM, AASHTO, UNE, UNI, CNR version

IN-SITU CBR TEST APPARATUS

In-situ CBR Test Apparatus

The machine is suitable for highway scene determination of various soil base material field CBR.
The working principle of the instrument is the use of rear axle load of not less than 60KN truck, with Jack loading, through penetration rod measured quantity of penetration and dynamometer measured load weight, the soil CBR value calculation of field.

LCB-2 IN-SITU CBR Test Apparatus

Model LCB-2

Hydraulic jack:	100KN
Capacity:	60KN
Penetrating rod:	Ø50mm x Length 200mm
Bearing plate:	1.25kg/PCS, four pcs

CONTRACTING TEST APPARATUS

Use to test moisture content of contracting after the specimen lost moisture, linear contracting rate, body contracting and contracing coefficient.

Model SS-1

Ration between working area of multihole plate and hole area:	less than 2:1
Micrometer gauge:	dia.10mmx4mm
Cutting ring:	Dia.61.8mmx20mm
Area of specimen:	30cm^{2}x2cm
Dimension:	110x105x125mm
Weight:	1kg

ELECTRIC COMPACTOR

Multifunctional compactor

It is suitable for the foundation engineering construction such as water conservancy dam, traffic, railway, airport and building etc. With standard compaction method to determine the relationship between density and water ratio, then confirm the dry density and moisture content of soil. It could satisfy the specimen preparation requirements of CBR tests and resilience modulus tests.
It could provide sand module and spodosol module of dia. 152 and dia. 100. It could perform light compaction and heavy compaction. With perfect designation, it has lots of specialties such as digital display, auto number and auto circulation etc.

Model EDC-1

Heavy-duty compacting test:	hammer weight 4.5kg drop height 450mm
Light-duty compacting test:	hammer weight 2.5kg drop height 300mm
Specimen cylinder dia.:	dia. 100, dia. 152 mm
Hammer head dia.:	dia. 50 mm
Compacting number:	30 times/min
Power:	370 W, 380 V, 1400 r/min
Dimension:	650×400×1320 mm
Weight:	130 Kg

EDC-1 Multifunctional compactor

CBR TEST MACHINE

STANDARD:
BS 1377, 1924; EN 13286-47;ASTM D1883; AASHTO T193

CBR Test Machine

This machine is suitable for test of soils and mix materials (the grain size of the soil is less than 40mm) compacted with CBR mold so as to confirm the bearing loading ability of pavement, roadbed subcrust as well as material layer of the roadbed to be designed. It consists of a twin column frame, proving ring, penetration bar, loading plate, micrometer, measuring device for swell increment etc. and easy to operate.

Model CTM-01	
Capacity:	30 KN/50KN (selectable)
Load speed:	1.0 mm/min
Penetration bar:	dia. 50 mm x 100 mm
Platen:	dia. 170 mm
Platen travel:	50 mm
Mold:	dia. 152 mm x 170 mm
Dimension:	310 x 310 x 930 mm
Power:	220 V, 50 Hz
Weight:	80 Kg

Accessories

- 34-T0093 Dial gauge tripod
- 34-T0092/A Aluminium swell plate
  34-T0092/B Brass swell plate
- 34-T0095/B Split surcharge weight 2 kg,
  2.27 kg selectable

Above accessories order separately.

CTM-01 CBR Test Machine

PLATE BEARING TEST APPARATUS

STANDARD:
ASTM D1194, D1195, D1196 – BS 1377:9 –CNR NO. 92 AND NO. 146 – DIN 18134

These test methods are used to estimate the bearing capacity of a soil under field loading conditions for a specific loading plate and depth of embedment (ASTM D1194) but also for load tests of soil and flexible pavement components for use in evaluation and design of airport and highway pavements (ASTM D1195, D1196; BS 1377; CNR No. 92 and No. 146; DIN18134). We propose a complete range of plate load testing equipment conforming to the different standards.

Plate bearing test apparatus

The apparatus can be easily converted conforming to method "b" - three dial gauges-removing the housing for centre dial gauge anvil and requiring other two dial gauges 30x0.01 mm with two dial gauge supports.

Model CTK-3	
Load plate diameter:	300 mm
Jack load capacity range:	0-300 kN
Jack Stroke:	120 mm
Measuring bridge span:	3000 mm
Hand pump rated pressure:	70 Mpa
Stress test range:	0-25 Mpa
Displacement measurement range:	0-10 mm

CTK-3 Plate bearing test apparatus

EXTRUDERS

STANDARD:
ASTM D698, D1587, D1883, BS 598:107, 1377:4, 1924:2

Hydraulic universal extruder

It can also be used to remove Marshall, Proctor and CBR specimens.

Mainly used to remove 4" and 6" samples from Marshall, Proctor and CBR moulds. Proctor and CBR specimens.

Model 16-T0080	
Capacity:	50 kN maximum
Soil specimen:	Dia.101 × 116, Dia.151 × 116 mm
Bituminous mix material specimen:	Dia.101.6 × 87 mm
Materia stabilized with inorganic :	Dia. 50 × 50, Dia. 100 × 100 Dia. 150 × 150
Weight:	40 Kg

16-T0080 Hydraulic universal extruder

Electric universal extruder

The ejector is used for ejecting the specimen made of bituminous mix material and the material stabilized with inorganic binders etc. It can quickly eject the specimen from the mold and easy to operate.

Model CT	
Mold dimensions:	
Soil specimen:	Dia. 102 x 116 mm, Dia. 152 x 116
Bituminous mix material specimen:	Dia. 101.6 x 87 mm
Material stability with inorganic binders:	Dia. 50mm × 50mm, Dia. 100mm × 100mm, Dia. 150mm × 150mm
Maximum axial capacity:	150 KN
Maximum travel:	250mm
Speed forward/ reverse:	170mm/min.
Power supply:	380V 50Hz
Input power:	1100 W

CT Electric universal extruder

POCKET HAND VANE TESTER

16-T0174 Field inspection pocket vane tester

STANDARD: ASTM D2573

This tester, designed to measure the undrained shear strength (Cu) of cohesive soils, consists of a cylindrical body with a torsional spring and three interchangeable vanes of different sizes used depending upon the expected strength of the soil.

The vanes have the following dimensions:
- small size 32x16 mm (height x dia.)
- medium size 40x20 mm (height x dia.)
- large size 50.8x25.4 mm (height x dia.).
  101.6 x 50.8 mm (height x dia.).

The height/diameter ratio of all vanes is 2.
During operation the vane is driven for 10 cm into the soil and then turned with the handle. Deep measures (i.e. on the top of undisturbed samples) can be obtained using the extension rod.

Model 16-T0174

Vane dimensions (height x dia.):	32x16 mm 40x20 mm 50.8x25.4 mm 101.6 x 50.8 mm
Measuring range:	0 to 260 kPa
Torque value:	5 N·m
Extension rod:	included
Max deepth:	3 m

Spare parts

- 16-T0174/1 Spring torque meter 1 pcs
- 16-T0174/2 Extension rod 6 pcs
- Vane 4 pcs
  16-T0174/31 32x16 mm(height x dia.)
  16-T0174/32 40x20 mm(height x dia.)
  16-T0174/33 50.8x25.4 mm(height x dia.)
  16-T0174/34 101.6 x 50.8 mm(height x dia.)
- 16-T0174/3 Vane rod 1 pcs
- 16-T0174/4 Spanner 3 pcs

16-T0175/A Pocket shear vane device

Can be used either in the field or in the laboratory, at the end of sample tubes, etc.
Vane is made of stainless steel.
Supplied complete with:
Standard 25 mm dia. vane, range 0-10 N/cm2
Sensitive vane adaptor, range 0-2 N/cm2
High capacity vane adaptor, range 0-25 N/cm2
Aluminum container
Instruction manual

Spare parts

- 16-T0175/1 Sensitive vane adaptor 0-2 N/cm^2
- 16-T0175/2 High capacity vane adaptor 0-25 N/cm^2
- 16-T0175/3 Standard vane 0-10 N/cm^2

16-T0175/A Pocket shear vane device

16-T0174 Field inspection pocket vane tester

FIELD PRESSUREMETER

The pressuremeter test is an in-situ testing method used to achieve a quick measure of the in-situ stress-strain relationship of the soil. In principle, the pressuremeter test is performed by applying pressure to the sidewalls of a borehole and observing the corresponding deformation.
The pressuremeter consists of two parts, the read-out unit which rests on the ground surface, and the probe that is inserted into the borehole (ground). As the pressure increases, the borehole walls deform. The pressure is held constant for a given period and the increase in volume required for maintaining the constant pressure is recorded. A load-deformation diagram and soil characteristics can be deduced by measurement of the applied pressure and change in the volume of the expanding membrane.
From the test readings (volume variation based on controlled pressure), a stress-strain curve can be obtained, in the case of plane deformation, which yields :

- the Ménard Pressuremeter modulus
- the creep pressure
- the Menard limit pressure

Specifications	Model		
	PY-3	PY-4	PY-5
Cross-sectional area of test water tube	11.75cm^2	14.19 cm^2	14.19 cm^2
Volume of test tube	435 cm^3	638cm^3	638 cm^3
Max. Test pressure	2.5Mpa	4 Mpa	5.5 Mpa
Naked dia.	Dia. 50mm		
Dia. With metal shield	Dia. 55mm		
Length	500mm		
Test length	250mm		
Required borehole dia.	Dia. 52~Dia. 58mm		
Original volume of pressuremeter chamber	491 cm^3		
Min.reading of pressure gauge	0.005Mpa		
Pressure source	High-pressure nitrogen pipe		
Host dimension	830×360×220mm		
Host weight	28Kg		

Test procedure

The borehole is drilled so as to minimize wall disturbance and keep a cavity diameter compatible with the probe size. The probe is lowered into the borehole to the required test depth and the pressure is applied by equal increments. Pressure and volume readings are taken on the Control Unit. In gravely soils and/or under water table level where the borehole would cave-in, the probe can be inserted in a specially designed slotted tube which is hammered or vibrodriven into the soil.
Used without acquisition, the C.U. meets the requirements of the EN ISO 22476-4 standard part A.

Description	Unit	Quantity
Instrument Host Include: AP pressuremeter*1, Organic calibration tube*1, Inflator*1, Tripod*1 pair, Copper fastening screw*1,Hook wrench*1, manual*1.	set	1
High pressure nitrogen Include: 4-liter high-pressure bottles*1, Reducing valve*1, Catheter*1	set	1
Probe	pc	5
15 meter Impulse pipe	pc	1
Pressuremeter elastic membrane	pc	20
Dia. 54×250 Spoon-shaped diamond	pc	1
Pressure test hole driller	set	1
Nylon tube bushing	pc	20
Seal ring	pc	20
Pressuremeter cover	pc	5
Drill handle	pc	1
Lifting Wrench	pc	1
Over-gas joint body	set	1
Dia. 8×1.9 O ring	pc	50
Spare tools Include: 12mm*1, 14mm*1 opening wrench, Slotted screwdriver*1, Phillips screwdriver*1, Flat nose pliers*1, Curve board*1, Triangle ruler*1, 10” Loose Wrench*1, 12” Loose Wrench*1	set	1
20m impulse pipe	pc	2
Foam packaging	package	1
Fine packing (including carton)	package	2
Wooden packing	package	1

HYDRAULIC STATIC CONE PENETROMETERS

Static cone penetration test is internationally recognized as a standard field test to collect data about bearing capacity and frictional resistance of soil.

STANDARD:
EN ISO 22476-1, ASTM D-5778

Standard accessories

Data acquisition, depth registration & software
I. GME500 data acquisition system in
II. Depth registration system(comprises optical encoder, junction box, cables, etc)
III. CPTest Acquisition software for microsoft
IV. CPTask Presentation software for
V. Notebook computer buy locally

Cones & spares
I. Electric cone C10CFIIP(compression)
II. Cone tip for pore Pressure C10 cones
III. Retaining Ring for C10 cones
IV. Friction sleeve for C10 cones
V. Set of seals for C10 cone
VI. Pore pressure filter ring HDPE

Cable & Tubes
I. Cable complete(L=50 m)
II. Adapter (to match DAS connector socket)
III. Friction reducer 0.25m with ring (speedlock/C10)
IV. Friction reducer 0.25m with cams(speedlock/C10)

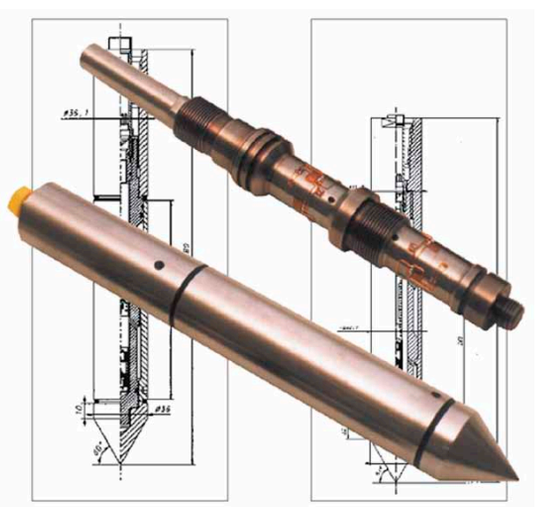
Also can be equipped with
CPT systems or NOVA system from GEOTECH Sweden
CPT systems from A.P. van den Berg Netherland
CPT systems from ENVI Sweden

Note: Because that product will be updated continually, pictures for reference only, subject to available products.

Typical and complete electrical CPT system comprises:

- Electrical compression or subtraction cone with 10 cm^2 or 15 cm^2 cross-sectional area, supplied in portable protection case, calibration data printed and on a USB memory stick.
- Electric CPT cable, purpose made and coming in standard lengths of 2, 10, 30 and 50 m (from stock) or customised length on request. The unisex waterproof Lemo connectors (gold-plated) allow for extending the cable and fit the cone and data acquisition system.
- Push-/pull clamp (twin ram pusher mounted) with built-in proximity switch for triggering the depth recording.
- Optical string pod or touch wheel depth encoder providing incremental digital pulses.
- Data acquisition system GME 500 (portable or built-in) for A/D conversion and data synchronisation.
- Sounding tubes and cross-over adapter.
- Windows computer (Notebook or industrial PC) for automatic recording of the CPT data.
- Windows based CPTest acquisition and CPTask presentation and interpretation software.
- Sine wave inverter converting the 12 or 24 Vdc into 230 Vac to feed the computer (option if required).

Electrical CPT(U)



Electrical CPT(U) probes, whether in compression or subtraction design, make up the most advanced measuring method for Cone Penetration Testing. High quality load cells and high precision calibration at Geomil make all electrical cones complying to EN ISO 22476-1 class 1 standards.

HYDRAULIC STATIC CONE PENETROMETERS

GME 500 Data Acquisition System

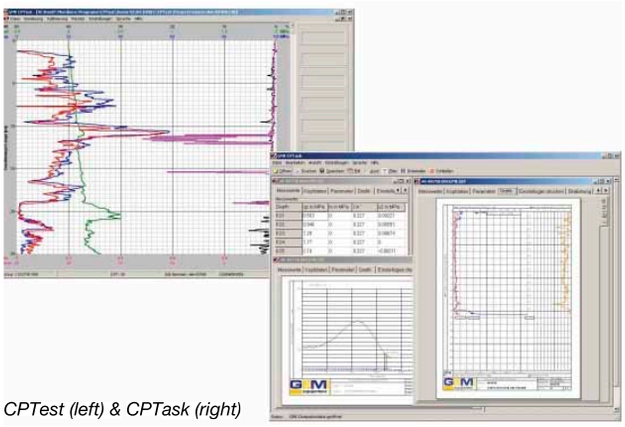
For conducting electrical or electrical-mechanical Cone Penetration Testing (CPT) a reliable data acquisition system is required. The system combines all features required for testing: it powers the connected cone and/ or measuring device, logs and A/D converts the various measuring channels, synchronizes the depth reading and finally transfers the data in real-time via RS 232 interface to the acquisition software on the PC.
The GME 500 is compatible with all Geomil electrical cones (both compression and subtraction type), electrical-mechanical measuring devices and environmental probes (see separate data sheets) and Geomil's CPTest acquisition software on Windows PC's with 32 bit or higher operation systems.
The GME 500 provides a 10 and a 16 lead analogue input for the various analogue channels, plus digital inputs for the depth registration. Altogether 8 analogue and 4 digital channels can be processed simultaneously.
Possible data channels and parameters are:
• Cone resistance • Local sleeve friction • Pore pressure
• Inclination • Penetration depth • Temperature
• Electric conductivity • Electric permittivity • Total force
• Time • Penetration speed
The depth encoder is mounted on the static penetrometer and records the down-and upward travelling of the pushing bridge. The system works bi-directional in order to compensate for the rebound of the rods.

CPTask Processing Software

The processing software CPTask. forms the newly designed and Microsoft Windows based CPT data processing, interpretation and presentation software for all your CPT related office tasks.
The user friendly program structure is project oriented and provides, amongst other features, the possibility to edit project variables such as ground level, coordinates and water table in one simple step.

CPTest Acquisition Software

With CPTest. Geomil provides a versatile and easy to use acquisition software for mechanical CPT as well as electrical CPT(U) soundings. Data from add-on sensors or probes like for total (push) force, temperature, electric conductivity etc. can be recorded as well.



CPTest (left) & CPTask (right)

TJC-1V Data Acquisition System

- Multi-channel and high precision data acquisition
- Relatively high precision, wheel-squeezing depth-coder
- Acquisition software development on Windows platform
- Simple, visual and user-friendly interfaces
- Compatible with several standards of data acquisition & process software on market
- Military standard notebook hardwar. Industrial motherboard and hard-disk. Whole alufer aluminium alloy case
- Rubber foot pads for prevention of bumping
- Russian military standard connectors

8 data acquisition channels that can simultaneously acquire the following CPT parameters:
• Point pressure• Sleeve friction • Pore pressure
• Cone inclination • Penetration equipment inclination
• Temperature • Electric conductivity • Total force

16 bits Analog to Digital (A/D) Converter which can reach 0.0015% F.S. precision. In contrast to common Data Acquisition System (DAS) with only 0.005%, it is more than three times higher.

High precision wheel-squeezing depth encoder: Particular wheel-squeezing structure, automatically obtain the depth and speed when penetrating. It's compatible with rods. The accuracy can approach 1 cm, which makes this depth encoder for the accuracy of identifying soil layers.

HYDRAULIC STATIC CONE PENETROMETERS

Crawler type CPT Vehicle (TPC-20L/TPC-25L)

Crawler type CPT vehicle shares the same working principle with other CPT machine. It uses Hydraulic transmission technology and uniformly pushes CPT cone attached with electric resistance strain chip to the soil. The electric resistance strain chip will transduce the resistance between the cone and the soil layer to electrical signal which will be transmitted to data acquisition system for reading, recording and confirming the mechanical parameters of foundation design.

Novel and compact design, small size with high power -- all in crawler type CPT vehicle the features of which are as set forth below:

1.By using this vehicle, operating CPT test in severe environment (such as beach, river bank, sand field, paddy field, etc) becomes so easy. Driving on icy roads also won't be a problem.

2.Advanced hydraulic system: with direction-controlling combination multi-way valve, it is compact, small and easy to install.

3.Unique hydraulic anchoring device: high-power motor directly runs the screw mandrel to anchor which is handy and time-saving.

4.Gliding rod case: while penetrating, it can be glided out effortlessly. This could enlarge the working space and make loading and unloading convenient. Also it can be pulled back easily while the vehicle's walking.

5.This vehicle is ideal not only for CPT test but also other in situ tests, with corresponding attachments and accessories, like CPTu test, PMT, DMT, VCT, WVT, etc.

Model TPC-20L, TPC-25L	
Engine	490 diesel engine
Power	22 KW
Speed	2.5-4.0 km/h
Drive	Hydraulic motor
Caterpillar band	Rubber or steel, 300 mm wide
Pace	82mm
Number of grip lug	55
Gradeability	Less than 20°
Oil pressure	16 MPa
Oil cylinder stroke	450 mm
Penetration force	200KN,250KN
Pulling force	240KN,280KN
Speed of penetration	1.2 ± 0.3 m/min
Anchor motor	M21-1.6T65
Max. Torque	2442 N.m
Multiple-threaded screw	72x4x80 mm
Outline size (single-side anchor)	3100x1560x1900 mm
Outline size (double-side anchor)	3300x1560x1900 mm

Configuration Table

Model	Description	Unit	Qty
	Operation part		
TPCL-001A	Operation system	set	1
TPCL-001B	Vehicle (20t)	nos	1
	Penetration part		
TPCL-002A	Penetration cylinder	set	1
TPCL-002B	Penetration rod(ø40)	nos	50
	Anchoring part		
TPCL-003A	Hydraulic anchor machine	set	2
TPCL-003B	Ground anchor	set	6
TPCL-003C	Anchor fixing beam	nos	2
TPCL-003D	Wedge key on anchor tip	nos	10
TPCL-003E	U-shaped heave device	set	1
	Test part		
GME500	Data acquisition system	set	1
TJC-1V (optional)	Data acquisition system	set	1
	Accessories		
TPCL-004A	Fixing block	nos	2
TPCL-004B	Reducer union	nos	1
TPCL-004C	Guide sleeve(ø40)	set	1
TPCL-004D	Tool	set	1
TPCL-004E	Gasket	set	1
TPCL-004F	8 core cable	m	80

TPC-20L/ TPC-25L

HYDRAULIC STATIC CONE PENETROMETERS

TPC-15W/TPC-20W/TPC-25W

Model TPC-15W, TPC-20W, TPC-25W

Engine type:	Diesel CZ2100
Max speed:	40KM/h
Max force:	150kN, 200kN, 250kN
Drive:	Diesel Engine, Electric starting
Oil pressure:	10 Mpa
Penetration speed:	1.2±0.3m/min
Dimension(m):	3.1×1.6×1.63
Weight:	3000Kg

Configuration Table

Model	Description	Unit	Qty
	Operation part		
TPCL-001A	Operation system	set	1
TPCL-001C	Vehicle (20t)	nos	1
	Penetration part		
TPCL-002A	Penetration cylinder	set	1
TPCL-002B	Penetration rod(ø40)	nos	50
	Anchoring part		
TPCL-003A	Hydraulic anchor machine	set	1
TPCL-003B	Ground anchor	set	6
TPCL-003C	Anchor fixing beam	nos	2
TPCL-003D	Wedge key on anchor tip	nos	10
TPCL-003E	U-shaped heave device	set	1
	Test part		
GME500	Data acquisition system	set	1
TJC-1V (optinal)	Data acquisition system	set	1
	Accessories		
TPCL-004A	Fixing block	nos	2
TPCL-004B	Reducer union	nos	1
TPCL-004C	Guide sleeve(ø40)	set	1
TPCL-004D	Tool	set	1
TPCL-004E	Gasket	set	1
TPCL-004F	8 core cable	m	80

Wheel type CPT vehicle (TPC-15W, TPC-20W)

Wheel type CPT vehicle uses hydraulic transmission system to penetrate, anchor, level and lift car body, etc.

The hydraulic system's oil is supplied by a large flow and high-pressure gear pump with an advanced direction-controlling combination multi-way valve which is installed in the console center. Each a hydraulic valve controls one circuit. On the right of multi-way valve, the relief valve is installed to control the oil pressure.

The operation panel has two layers. The upper is the main control circuit while the lower is oil cylinder control circuit.

On the upper layer there are three control rods: the left one to control penetration system; the middle one to control the anchor system; the right one to control the hydraulic props. The lower four rods is to control oil cylinder.

Drag type CPT Machine (TPC-15T, TPC-20T)

It has two axles each of which assembles two tyres under the chassis. At each corner of the chassis, there is one mechanical support leg, namely total four legs, to lift the chassis.

TPC-15T/TPC-20T

Model	Description	Unit	Qty
	Operation part		
TPCL-001A	Operation system	set	1
TPCL-001D	Trailer	nos	1
	Penetration part		
TPCL-002A	Penetration cylinder	set	1
TPCL-002B	Penetration rod(ø40)	nos	30
	Anchoring part		
TPCL-003A	Hydraulic anchor machine	set	1
TPCL-003B	Groud Anchor	set	4
TPCL-003F	Anchor plate	nos	4
TPCL-003H	Anchor bar	nos	4
	Test part		
GME500	Data acquisition system	set	1
TJC-1V (optinal)	Data acquisition system	set	1
	Accessories		
TPCL-004A	Fixing block	nos	2
TPCL-004B	Reducer union	nos	1
TPCL-004C	Guide sleeve(ø40)	set	1
TPCL-004D	Tool	set	1
TPCL-004E	Gasket	set	1
TPCL-004F	8 core cable	m	40

HYDRAULIC STATIC CONE PENETROMETERS

Bulk series Specification

Model	Rated penetration force (KN)	Rated penetration force (KN)	Engine
TPC-25B	250	280	ZS1110
TPC-20B	200	240	ZS1105
TPC-15B	150	180	R1100
TPC-10B	100	130	R195
TPC-8B	80	100	R190
TPC-5B	50	70	R180
TPC-3B	30	40	R170

TPC-3B/TPC-5B/TPC-8B/TPC-10B/TPC-15B/TPC-20B/TPC-25B

CPT - VST Dual-use Apparatus (TPC-3V)

It is not only just the lightest CPT machine, but also vane shear test machine (i.e. VST). Its rated penetration force is 30KN (3t) and the test depth is up to 30m (in soft soil area). While doing CPT test, it could work with 10cm^2 probe, also 10cm^2 pore-pressure probe while doing CPTu test.
This machine is manual operation, suitable for clay, silt, sand, etc. After over 20 years application and development, now it is improved to put up a perfect performance.
Vane shear test ranges 0 ~130KPa, Cross Board To Board head configuration 50 × 100 (mm) (general) or
75 × 150 (mm) 75 × 100 (mm) (special).

TPC-3V
CPT - VST Dual-use Apparatus

TPC-25X CPT Truck

CPT Truck Rig (TPC-25X)

Model TPC-25X	
Truck:	4WD all axis chassis
Engine type:	EQH16030 Dongfeng
Horse power	160
Max speed:	80KM/h
Max force:	250kN
Pull out force	280KN
Penetration stroke	1100mm
Penetration speed:	1.2±0.3m/min
Diameter of cylinder	125mm
Diameter of rod	90mm
Hydraulic power	Japan engine 3TNV88-PFN

Feature:

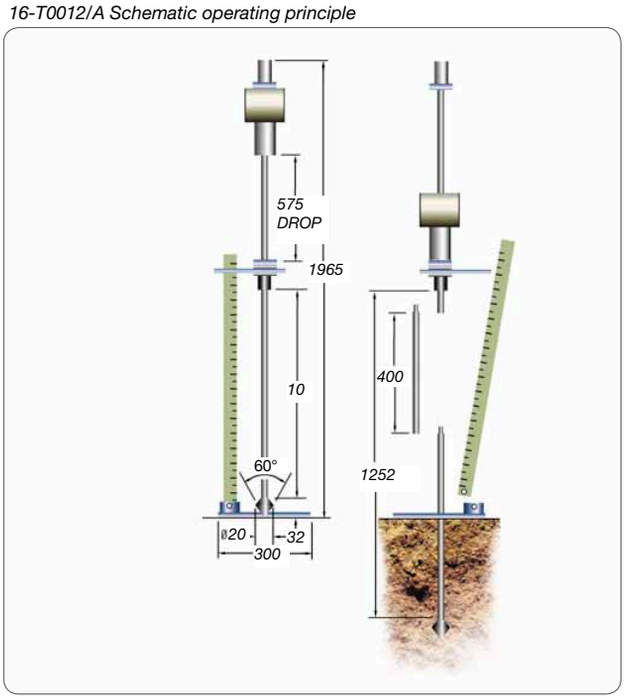
1. All axis 4WD chassis which is designed for off-road.
2. Unique design of power room apart from work room. Work room equips office desk, cabinet and other facilities that make it more convenient to operate the test. Also, apart from oil tank, engine and radiating system, work room is less noisy, less vibration and less air-pollution.
3. Drive power's supplied by hydraulic system to reduce oil wear and be friendly to environment.
4. Inverted structure of penetration cylinder. Thus the quantity of hydraulic tube could greatly decrease and the penetration could be more stable.
5. Rods would be nipped by hydraulic penetration system. It will be a saver of time and strength while making the operation more safe and efficient.
6. Video unit mounted on rods helps you monitor the penetration process of rods.
7. With two air-condition – one in work room, one in drive room.
8. Also suitable for CPTu, Flat Dilate Test, VST(Vane Shear Test), etc.

DYNAMIC CONE PENETROMETER

The TRL DCP (Dynamic Cone Penetrometer) is an instrument designed for the rapid insitu measurement of the structural properties of existing road pavements constructed with unbound materials. Continuous measurements can be made down to a depth of approximately 850 mm or when extension shafts are used to a recommended maximum depth of 2 m. Where pavement layers have different strengths the boundaries can be identified and the thickness of the layers determined. Correlation's have been established in earlier work (Van Vuuren 1969, Kleyn and Van Heerden 1983, Smith and Pratt 1983) between measurements with the DCP and CBR (California Bearing Ratio) so that results can be interpreted and compared with CBR specifications for pavement design. A typical test takes only a few minutes and therefore the instrument provides a very efficient method of obtaining information that would normally require the digging of test-pits.

16-T0012/A Dynamic Cone Penetrometer

16-T0012/A Schematic operating principle



Accessories

- 8 kg weight dropping mass trough a height of 575 mm
- Anvil with driving rod
- Penetration rod with 60°, 20 mm dia. cone
- Spanners, Tommy bar, bottle of adhesive

All contained in a aluminum alloy carrying case.
Case dimensions: 1200x350x200 mm approx.
Weight approx.: 30 kg

DYNAMIC PENETROMETERS

Penetrometers are used to establish the thickness of different stratifications when investigating the suitability of a site for bridge, road and other construction works. In general if the ground is not too compact, penetration tests with the lightweight penetrometer can be carried out to depths of about 6 m.

16-T0013 Manual dynamic penetrometer.

Accessories

- 10 kg weight dropping mass trough a height of 50 cm
- Anvil with driving rod
- 3 pcs 1m Penetration rod with 60°, 40 mm dia. cone

All contained in a carrying case.
Case dimensions: 1200x350x200 mm approx.
Weight approx.: 30 kg

16-T0013 Manual dynamic penetrometer.

STANDARD PENETRATION TEST

STANDARD: BS 1377: PART 9:1990

This Standard sets out a method for determining the resistance of soils to the penetration of a sampler, and the obtaining of disturbed samples of the soils for identification purposes. The Auto Trip Hammer, SPT Drive Rods and a Split Tube Sampler are worked together.

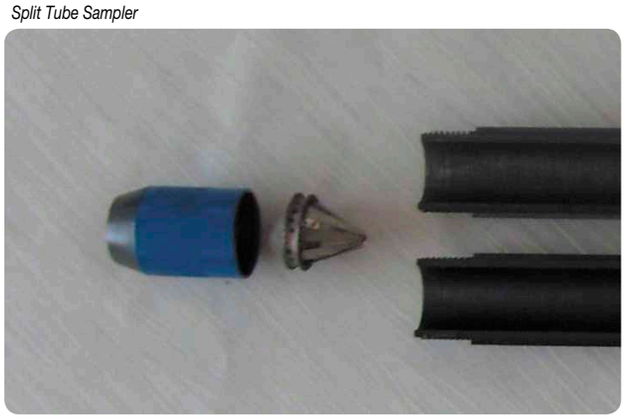
Standard accessories

I. The Automatic Trip Hammer comprises a weight of 63.5 kg complete with pick-up and self-tripping mechanism that ensures that the weight has a free-fall of exactly 760 mm. The inner shaft acts as a guide that permits the weight to drop with minimal resistance and ensures that the weight strikes the anvil squarely.

II. The SPT drive rods thread usually be processed with a 1.1/2" B.S. whitworth to fit our standard SPT rods. Adaptors to other types of drill rod can be supplied on request. The overall length of the hammer is 2.6 m extended and 1.8 m when unextended. The total weight of the hammer is 107 kg.

III. The standard Split Tube Sampler is 2" (50.8 mm) OD x 1-3/8" (34.9 mm) ID x 18" (457 mm) / 24" (610 mm) long. For heavy driving conditions, the Heavy-duty "Tuflok" design is available.

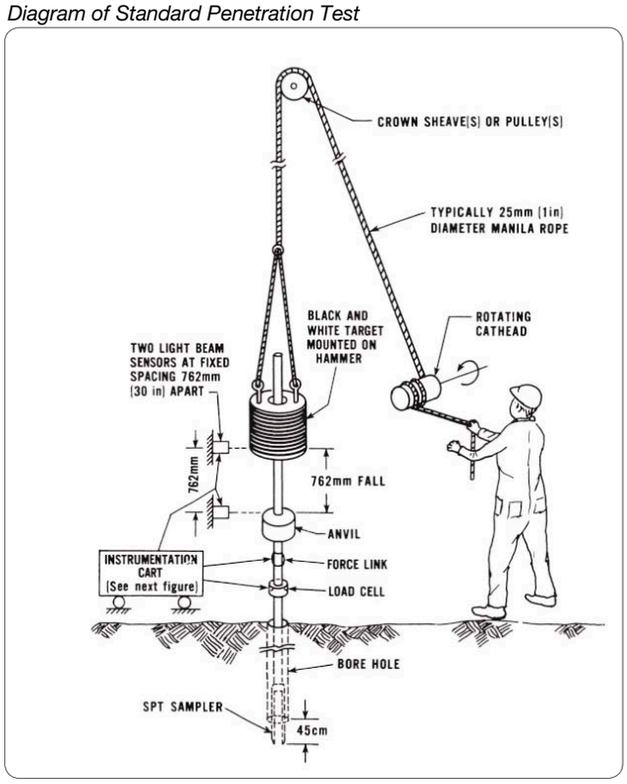
Split Tube Sampler



Cutting shoe and nose cone

Donut hammer and drill rod

Diagram of Standard Penetration Test



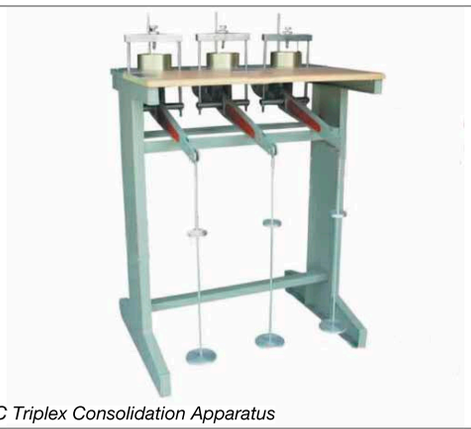
SPT Steel Catcher and plastic catcher

CONSOLIDATION TEST UNIT

STANDARD:
ASTM D3080, BS 1377:7, AASHTO T236
NF P094071-1/2

Triplex Consolidation Apparatus

WG-1C Triplex Consolidation Apparatus is used for compression test of soil, and to determine the relationship between deformation and compression of soil, to calculate the unit sediment compression index, resilient index, as well as consolidation coefficient of soil, etc.



WG-1C Triplex Consolidation Apparatus

WG-1B Triplex Consolidation Apparatus

GDG-4S Triplex Consolidation Apparatus

Model WG-1B

Sample area:	30 cm² or 50 cm²
Sample's quantity:	Three
Pressure range:	12.5~160kpa, 12.5~800kpa
Grade:	9, 8 grade
Load level(kpa):	12.5, 25, 50, 100, 200, 300, 400, 800, 1600, 3200

Model GDG-4S

Sample area:	30 cm² or 50 cm²
Sample's quantity:	Three
Pressure range:	12.5~3200kpa, 12.5~1600kpa
Grade:	10, 9 grade
Load level(kpa):	12.5, 25, 50, 100, 200, 300, 400, 800, 1600, 3200

Mode WG-1C

Frame:	Steel structure
Sample area:	30 cm² or 50 cm²
Sample's quantity:	Three
Lever ratio:	12: 1 (mid and low pressure)
Consolidation container:	One beam, two beams, three beams
Pressure range:	12.5 kpa/30cm² to 800 kpa/50cm², 12.5 kpa/30cm² to 400 kpa/50cm²
Grade:	Grade 8, grade 7
Load level(kpa):	12.5, 25, 50, 100, 200, 300, 400, 800, 1600, 3200

Weights for Consolidation Test or Directly Shear Test

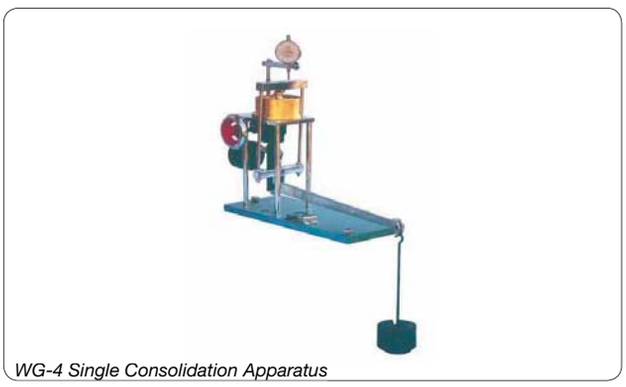
Weights for Consolidation Test or Drectly Shear Test soil test

Model	Weight (Kg)
NS-15-5.1	5.1
NS-15-2.55	2.55
NS-15-1.7	1.7
NS-15-1.275	1.275
NS-15-0.85	0.85
NS-15-0.637	0.637
NS-15-0.425	0.425
NS-15-0.319	0.319
NS-15-0.212	0.212

CONSOLIDATION TEST UNIT(CONTINUED)

Single Consolidation Apparatus

Features: Small in size, lightweight, suitable for use on the spot.



WG-4 Single Consolidation Apparatus

WG-4 Single Consolidation Apparatus

Sample area:	30 cm²
Lever ratio:	1:20
Pressure range:	12.5~400kpa
Weight:	20 Kg

Full Automatic Pneumatic Consolidometer

Features: computer-controlled, print curve chart

GZQ-1 Full Automatic Pneumatic Consolidometer

GZQ-1 Full automatic pneumatic consolidometer

Low Mid. pressure: Relative error:	0~1600Kpa ≤100KPa±1
High pressure: Relative error:	0~3200Kpa ≤100KPa±1
Zero precision:	≤1.0Kpa
Load time	<1 second
Measure range of Sensor: Resolution: Precision:	10mm <2.5um ≤0.2%F.S

Standard accessories for Model WG-4

I. Preload weight: 1 pcs
II. 1.53kg Weight: 2pcs
III. 1.275kg Weight: 3pcs
IV. 1.02kg Weight: 2pcs
V. 0.637kg Weight: 1pcs
VI. 0.383kg Weight: 1pcs
VII. 0.319kg Weight: 1pcs
VIII. 0.255kg Weight: 1pcs
IX. 0.191kg Weight: 1pcs
X. 0.128kg Weight: 1pcs
XI. Dia. 12mm steel ball: 1pcs
XII. Hanging scaffold: 1pcs
XIII. Container: 1set Include guide ring 2pcs, cutting ring 2pcs Dia. 61.8mm x Height 25.4mm, protect ring 2pcs
XIV. Permeable stones: 3pcs. Dia. 83mm, Dia. 79.8mm, Dia. 61.8mm
XV. Dial gauge rod and clip
XVI. dial gauge: 1set

Standard accessories for Model WG-4

Strain Controlled Unconfining Compression Apparatus

It is usde to determine the unconfined compressive strength and the sensitivity of soft clay of stronger saturation.

YYW-2 Strain Controlled Unconfining Compression Apparatus

YYW-2 Unconfining Compression Apparatus	
Max. axial load:	0.6 KN
Diameter of remolding cylinder:	Φ39.1 mm
Sample dimension:	Φ39.1×80 mm
Journey of the rotate wheel lift bridge in a circle:	0.2 mm
Rate:	2.4 mm/min
The longest journey of the ratate wheel lift bridge:	30 mm
Weight:	40Kg

K0 Consolidation Apparatus(include pull rod)

GJY K0 Consolidation Apparatus

CJY K0 Consolidation Apparatus	
Sample dimension:	Φ61.8×40 mm
Axial load:	6KN
Load arm:	0KPa-1000KPa
Axial movement:	0-10mm
Work temperature:	20°c±5°c
Relative humidity:	<85%
Relative error of proving ring:	±2%

DIRECT SHEAR TEST MACHINE

STANDARD:
ASTM D3080, BS 1377:7, AASHTO T236
NF P094071-1/2

To determine the shearing strength of the soil using the direct shear apparatus.

In many engineering problems such as design of foundation, retaining walls, slab bridges, pipes, sheet piling, the value of the angle of internal friction and cohesion of the soil involved are required for the design. Direct shear test is used to predict these parameters quickly. The laboratory report cover the laboratory procedures for determining these values for cohesionless soils.

Strain controlled direct shear machine consists of shear box, soil container, loading unit, proving ring, dial gauge to measure shear deformation and volume changes. A two piece square shear box is one type of soil container used.

A proving ring is used to indicate the shear load taken by the soil initiated in the shearing plane.

EDJ-1, SDJ-2(twp-speed and three-speed)

EDJ-1, SDJ-2 (Electric two-speed and three-speed)	
Vertical load:	50KPa,100KPa,200KPa, 300KPa, 400KPa
Lever ratio:	1:12
Level shear force:	Max. 1.2KN
Sample area(cm^2):	30
Shear rate(mm/min):	0.02, 0.8, 2.4
Power source:	220V±10%, 50Hz
Dimension(mm):	850 x 550 x 1100(LxWxH)
Weight:	40 Kg


DSJ-3(quadruplet)

DSJ-3(quadruplet) Electric shear test machine

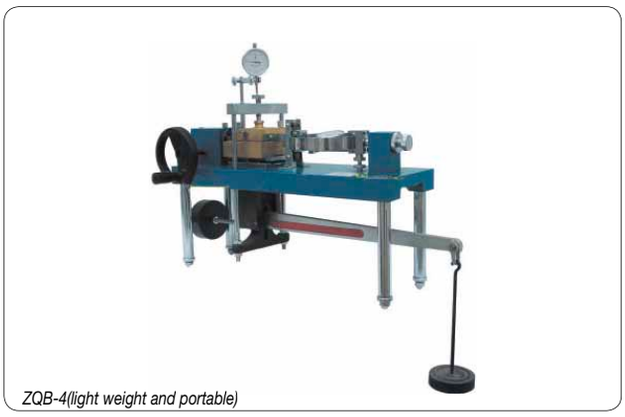
Vertical load:	100KPa, 200KPa, 300KPa 400KPa
Lever ratio:	1:12
Shear box quatity:	4
Level shear force:	Max. 1.2KN
Sample area(cm):	30 x 2 H
Shear rate(mm/min):	2.4, 0.8, 0.1, 0.02
Power:	<100W
Power source:	220V±10%, 50Hz
Dimension(mm):	680 x 740 x 1050(LxWxH)
Weight:	200 Kg


ZYY-3

ZYY-3 (Duodenary) shear test machine

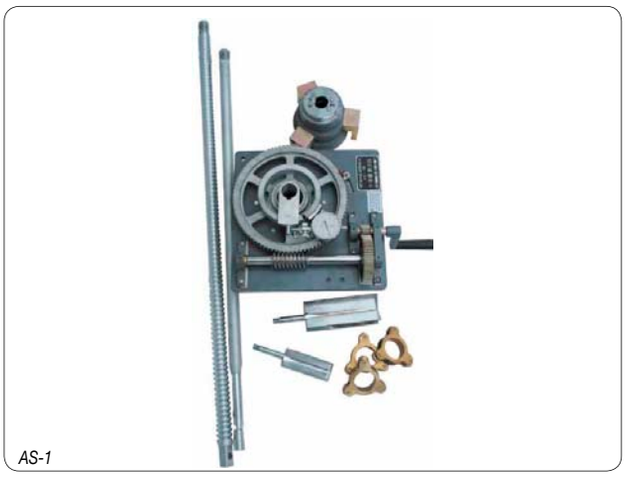
Vertical load:	400KPa,300KPa,200KPa, 100KPa, 50KPa
Lever ratio:	1:12
Max load:	1.2KN
Load method:	Weight
Sample area(cm^2):	30
Soil sample container quantity:	12, sample 36 at the same time
Dimension(mm):	760 x 880 x 1100(LxWxH)
Weight:	220 Kg(include weigths)

DIRECT SHEAR TEST MACHINE(CONTINUED)


ZQB-4(light weight and portable)

ZQB-4 (light weight and portable)

Soil sample area:	30cm^2x 2cm(H)
Vertical load:	50KPa,100KPa, 200KPa, 300KPa, 400KPa(hanger is first grade)
Lever ratio:	1:20
Level shear force:	Max. 1.2KN
Sample area(cm^2):	30
Power source:	220V±10%, 50Hz
Dimension(mm):	850 x 550 x 1100(LxWxH)
Weight:	40 Kg


AS-1

AS-1 (Cross plate) shear test machine

Cross board dimension:	Φ75×150 mm, Φ50×100 mm
Steel ring torsion:	80N.m
Torsion accuracy:	0.55N.m
Guide rod:	Φ30 x 1040mm
Dimension(mm):	430 x 910 x 220 (LxWxH)
Weight:	40 Kg

STRAIN CONTROLLED TRIAXIAL TEST APPARATUS

TSZ10-1.0

Model TSZ10-1.0

Sample dimension:	Φ39.1×80 mm
Max load:	10Kn
Strain rate:	0.016-1.6mm/min. six-speed mechanical transmission
Table stroke:	Max. 50mm
Confining pressure:	0-1Mpa
Back pressure:	0-0.6Mpa
Hole pressure:	0-1Mpa
Volume change: Graduation:	0-25ml 0.1ml
Axial displacement:	0-30mm
Power:	220V±10%, 50Hz
Machine dimension:	350 x 300 x 1100 (LxWxH)
Controller Dimension(mm):	500 x 500 x 925 (LxWxH)
Weight:	170 Kg

Model TSZ30-2.0

Sample dimension:	Φ39.1×80 mm, Φ61.8×125 mm
Max load:	30Kn
Strain rate:	0.0024-4.5mm/min. sixteen-speed mechanical transmission
Table stroke:	0-90mm
Confining pressure:	0-1Mpa
Back pressure:	0-0.6Mpa
Hole pressure:	0-1Mpa
Volume change: Graduation:	0-25ml 0.1ml
Axial displacement:	0-30mm
Power:	220V±10%, 50Hz
Machine dimension:	350 x 300 x 1100 (LxWxH)
Controller Dimension(mm):	500 x 500 x 925 (LxWxH)
Weight:	175 Kg

Full-automatic Strain Controlled Triaxial Test Apparatus

TSZ-1A

TSZ-2

TSZ-6

Model TSZ-1, TSZ-1A, TSZ-2, TSZ-6

Sample dimension:	TSZ-1,TSZ-1A:Φ39.1×80 mm, TSZ-2:Φ39.1×80 mm, Φ61.8×125 mm TSZ-6: Φ39.1×80 mm, Φ61.8×125 mm, Φ101×200 mm
Shearing rate:	0.0001-2.4mm/min. 0.0001-4.8mm/min
Confining pressure:	0-2Mpa
Back pressure:	0-2Mpa, TSZ-1A without back pressure
Hole pressure:	0-2.0Mpa
Volume change: Graduation:	TSZ-1, TSZ1A, TSZ-2: 0-50ml TSZ-6: 0-100ml
Axial displacement:	0-30mm
Axial load:	TSZ-1, TSZ-1A: 0-10KN TSZ-2: 0-30KN, TSZ-6: 0-60KN

ELECTRICAL DENSITY GAUGE

Introduction

The Electrical Density Gauge (EDG) is a nuclear-free alternative for determining the moisture and density of compacted soils used in road beds and foundations.

The EDG is a portable, battery-powered instrument capable of being used anywhere without the concerns and regulations associated with nuclear safety.

Its user-friendly, step-by-step menu guides the user through each step of the testing procedure and cautions the user when values do not correspond to established curves for the material being tested.

Easy-to-use, the EDG can be used as a construction aid to monitor day-to-day compaction operations by providing performance and measurement results highly comparable to those achieved with traditional methods, including the nuclear gauge and/or a sand-cone and oven moisture test combination.

When conducting a test, the EDG measures and displays the results for wet and dry density, gravimetric moisture content and percent compaction.

Model SR-4500	
Wet Density Range	typical compacted earth sites range
Dry Density Accuracy	within 3% of standard tests
Moisture Content Range	typical compacted earth sites range
Moisture Content Accuracy	within 2% of standard tests
Operating Temperature	0-50°C
Ambient Operating	Humidity 5-90%, non-condensing
Power Li Ion battery	(AA battery optional)
Battery Life	approx. 12 hrs. of runtime
Battery Charger	110-240 V 50/60Hz
Dimensions	600×460×370mm
GPS	± 3m
Gross Weight	10kg

Components

1. EDG Console/Computer

The EDG unit contains a computer that applies mathematical formulas to determine the physical characteristics of the soil. The computer also contains memory that remains intact after the EDG has been powered off. This memory is used to save Soil Models and Job Site data. See Appendix A for information on EDG memory capacity. The EDG console has an LCD display which is used to provide visual information to the user and a keypad that allows the user to key information into the EDG unit.

2. Electric Soil Measurement Sensor

The Soil Sensor gathers electrical information about the soil under test and transfers the information to the EDG computer.

3. Dart Template

4. Temperature Probe

When performing EDG testing, the temperature probe should be placed into the soil. The soil temperature is an important variable in accurate EDG testing.

5. Calibration Check Unit

6. Soil Darts

To get electrical data from the soil, 4 Soil Darts are pounded into the ground by a hammer. A template is provided to accurately position the Soil Darts. The Soil Darts are machined by stainless steel and are expected to last many years.

7. Battery Charger

The Battery Charger that is provided with EDG will charge the battery in approximately 12 hours.

8. Hammer

9. Cables/Clips for Soil Measurement Sensor

10.Safety Glasses

11.Break-Out Cable

12.SR-4500 Manual

13.Software

ELECTRICAL DENSITY GAUGE

Testing Procedure

During the testing procedure, four tapered electrodes (darts) are driven into the ground in a cross pattern using the supplied template. Between the two sets of two tapered darts, four point-to-point electrical measurements are made and the electrical characteristics averaged. The dielectric properties that are measured by the unit are compared to a "oil model" which has been developed and programed into the unit prior to testing.

These soil models are required only once for each soil type. The soil model is used as a calibration reference during the testing procedure. It is developed by establishing a curve of measured dielectric properties for different densities and moisture combinations of the actual soil to be tested or a similar material.

This soil model is used by the unit through a proprietary correction algorithm to automatically determine the wet and dry density, gravimetric moisture content and percent compaction values for the material being tested.

Soil models can be named using the unified soil classifications listed in the drop-down menu or unique names can be entered using the alpha-numeric keypad. In addition, the temperature probe, which is inserted into the material being tested ensures accurate results by compensating for changes in recorded temperatures. Similar to nuclear gauges, proctor numbers for optimum compaction may be input into the gauge, which would allow for percent compaction to be automatically calculated and displayed at the end of each test.

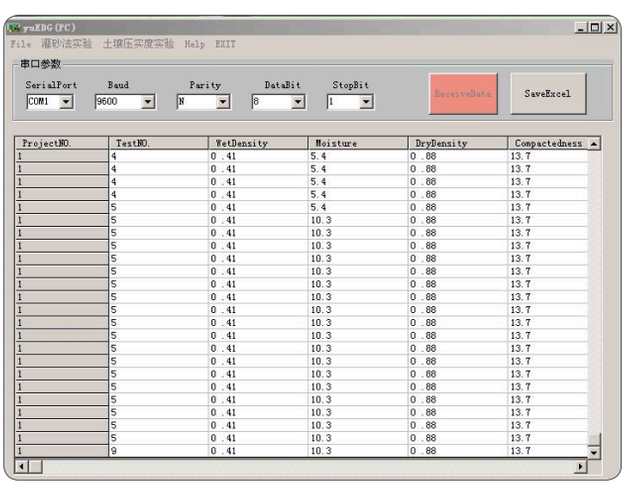
The Proctor numbers would be input into the gauge during the development of the soil model. When determined, this value is entered into the EDG to enable the computation of percent compaction.

EDG Software

EDG Software will allow you to communicate effortlessly with your EDG gauges and only requires minimal setup by the user. EDG Software provides a complete solution for the acquisition, storing, and presentation of Job and Soil Model data. EDG Software works in conjunction with Microsoft Excel to present test data in easy-to-read Excel workbook format files, which can be evaluated directly or sent to any computer using Microsoft Excel. Jobs can be grouped together within projects for organization and reporting.

EDG Software Features

- Communicate with all your EDG gauges.
- Download Job Data.
- Create customized reports from downloaded job data.
- Download Soil Model Data.
- Create reports from downloaded soil model data.
- Upload soil models to any EDG.
- Input proctor data for use in job data or soil model data.
- Time/Date, GPS stamps for each test



PH METERS

STANDARD: BS 1377:3, ASTM D1067

pH meter is an electronic instrument used to measure the pH (acidity or alkalinity) of a liquid (though special probes are sometimes used to measure the pH of semi-solid substances). A typical pH meter consists of a special measuring probe (a glass electrode) connected to an electronic meter that measures and displays the pH reading.

TP-6022 PH meter

TP-601A pH meter

Model TP-601A

Display:	LCD, size : 20 mm x 27 mm. Consumption
Measurement Range:	pH 0 to 14 pH
Resolution:	pH 0.1 pH.
Accuracy:	pH -/+0.1 p After calibration. pH 4.01, pH 6.86 and pH 9.18, Three Point Calibration
pH Calibration:	pH 4.01, pH 6.86 and pH 9.18, Three Point Calibration
Temp. Display:	0.1°C
Temp. Accuracy:	1°C
Working Temp. Range:	0 ~ 50°C
ATC:	0 ~ 100°C
Dimension:	188 x38 mm * Meter with pH electrode.
Weight:	82 g (electrode included).

Model TP-6022

Display:	LCD, size : 20 mm x 27 mm. Consumption
Measurement Range:	pH 0 to 14 pH
	Temp. 0 to 50 °C (32 to 122 °F).
Resolution:	pH 0.01 pH.
	Temp. 0.1 °C/ 0.1 °F.
Accuracy:	Accuracy pH+/- 0.02 p After calibration.
	Temp. +/- 0.8 °C/ +/- 1.5 °F.
pH Calibration:	pH 6.86, pH 4.01 or pH 9.18, 3 points calibration.
Operating Humidity:	Less than 80% RH.
Dimension:	88 x38 mm * Meter with pH electrode.
Weight:	82 g (electrode included).

Model TP-6658

Power supply:	AC 220V(160-250V)50Hz
Power unit:	<5W
Accuracy:	0.01PH 1mV
Measurement range:	0~14PH -999mV~999mV
Set point:	2
Environmental temperature:	0~50°C
Display:	Four-level LED LCD instructions
Environmental humidity:	35-85%RH
Parameters preservation:	10 years
Output model:	ON /OFF 4~20mA
Output capacity:	Output capacity AC 250v/3A DC30V/3A
Input impedance:	$>10^{12}\Omega$
Insulation R:	>10MΩ
Size:	96mmX96mmX120mm

SOIL PH MOISTURE METER

Model SDT-60, SDT-300

PH range:	3-8PH
PH accuracy:	±0.2PH
moisture range:	1-8%
moisture accuracy:±1%	±1%
Test depth:	SDT-60: 6cm SDT-300: 30cm

TP-6658 Ph meter

SDT-60, SDT-300

SAND EQUIVALENT SHAKER

STANDARD:EN 933-8
ALSO CONFORMING TO NF P18-598,
UNI 8520-15, UNE 83131, CNR NO. 27

Motorised sand equivalent shaker

The motorized sand equivalent shaker features two separate electronic timers (one preset at 45 seconds and the other preset at 10 minutes) to increase accuracy and ease of operation compared to a spring-type timer. It is recommended for samples in the laboratory.

Model 47-T0056/B

Stroke:	adjustable 203±1 mm
Rate:	180±2 strokes/min
Power Supply:	220 V
Rated power:	90 W
Weight:	45±1Kg
Dimension:	564×320×360mm

Spare parts

Code	Description
47-T0050/1	Measuring cylinder(ASTM)
47-T0050/1A	Messuring cylinder(EN)
47-T0050/2	Rubber stopper
47-T0050/3	Measuring can
47-T0050/4	Irrigator tube
47-T0050/5	Siphon assembly with bottle
47-T0050/6	Weight foot(ASTM)
47-T0050/61	Weight foot(EN)
86-D1546	Funnel
82-D1694	Graduate rule, 500 mm
47-T0050/10	Plastic case

47-T0056/B Motorised sand equivalent shaker

SPECIMEN GRINDING MACHINE

STANDARD: ASTM D4543

Specimen grinding machine

Used to grind and polish concrete specimens, natural stones, ceramic materials, rock samples etc.The cube cylinder and core specemens can be easily locked on the table and the grinding head can be radially moved either manually or automatically in both directions so the only manual operation requested is the lowering of the grinding head by the top hand wheel. The machine is supplied complete with chip guard, coolant tank, motor pump, one set of abrasive sectors and instruction manual. Diamond grinding sectors are available on request.

SCM-200 Double-Abrasive grinding machine is supplied complete with clamping element for 50, 100, 150 mm cubes. Clamping devices for cylinders are also available on request.

Model SCM-200

Automatic grinding input:	0.04- 0.12mm
Grinding spec. Specimens:	50-150mm cubes dia. 50-dia.120mm cylinders
Degree of finish (by standards of rough machining):	Ra 3.2
The precision of standard flatness	±0.05mm (within 50 range)
Diameter of the grinding wheel:	200mm
Cooling devices:	receive water cooling

SCM-200 Double-Abrasive grinding machine

CUTTING MACHINE

TBA-350 Cutting machine

Model TBA-350

Power:	230V, 50HZ, 2200W
Rotation:	2800rpm
Diamond blade:	dia 350mm, thickness 3mm
Installment hole:	dia 25.4mm
Max. cutting length:	650mm
Max. cutting depth:	90mm
Cutting width:	40mm
Weight:	80kg

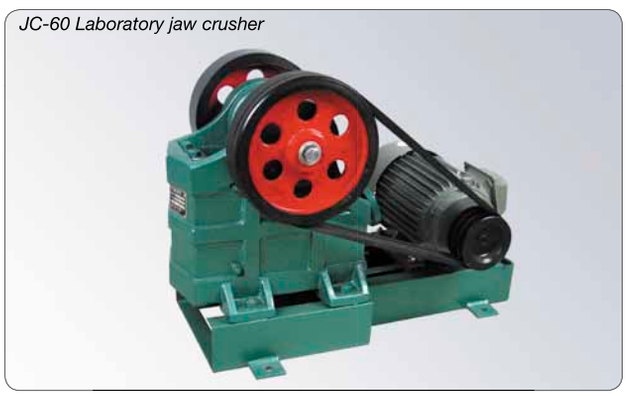
LABORATORY JAW CRUSHER

Two jaws of manganese steel are provided in this laboratory Jaw Crusher. The moveable jaw produces two blows for every revolution, thus reducing over sizing to a minimum. A combination of forward and downward strokes with a rocking action exerts pressure on the coarser material, yet permits the finished material to pass through the jaws.

Model JC-60

Opening:	100x60mm
Max feeding size:	45mm
Discharge opening :	6-10mm
Capacity:	230-400 kg/hour
Rotation speed:	1400rpm
Power:	380V, 1.5KW
Dimension:	355x330x378mm
Weight:	130kg

JC-60 Laboratory jaw crusher



ROCK POINT LOAD TEST APPARATUS

STANDARD: ASTM D-5731

Model PL-01

This apparatus comprises a two-column fixed crosshead frame and a hand operated hydraulic jack.
Pressure applied by the jack extends the piston carrying the lower conical point. The upper point is fixed to the crosshead with a scale mounted on the frame to provide specimen diameter information for use in point load strength index calculations.

For model PL-01, its pressure is indicated on the pressure gauge, model PL-02 is indicated directly on the digital readout unit.
Loads up to 50 kN can be applied to specimens as large as 101.6 mm in diameter.

Model PL-02

Model PL-01/PL-02

Max work pressure:	60Mpa
Piston diameter:	dia.35mm
Pistion stroke	160mm
Piston area:	9.62cm^2
Dimension:	380x300x620mm
weight:	85kg

SPECIFIC GRAVITY TEST APPARATUS

STANDARD: EN 12390-7

Model V085 Specific gravity frame

Used in conjunction with a suitable electronic balance for specific gravity determination of fresh and hardened concrete and aggregates. A purpose built robust frame designed to support the electronic balance.
The lower part of the frame incorporates a moving platform, which carries the water container allowing the test specimens to be weighed in both air and water. The balance is not included in the apparatus and must be ordered separately. Any type of electronic balance fitted with an under-bench weighing facility can be used. The models listed as accessories below are ideally suited for use with this specific gravity frame.

Overall dimensions: 510x510x1150 mm
Weight approx.: 50 kg

Accessories

- V075-15 Digital top pan balance 15 kg x 1g/0.5g
- V042 Density tank, plastic, 370x370x330 mm
- V064 Suspension hook
- V041 Stainless steel density basket, dia. 200 mm by 200 mm height, mesh size 3.35 mm, all stainless steel made.

DETERMINATION OF CONSISTENCY

STANDARD: EN 12274-3

Sand absorption cone and tamper

Cone and tamper manufactured according to the specifications and is also used in determining the specific gravity and absorption of fine aggregates.

48-D0440 Sand absorption cone and tamper
SA-C Cone weight: 250 g
SA-T Tamper weight: 200g

UNIT WEIGHT MEASURES

STANDARD: EN 12350-6/ASTM C29, C138
Constructed in heavy gauge steel with two handles.

Code no.	Capacity(L)
48-D0445/1	1
48-D0445/2	5
48-D0445/3	10
48-D0445/4	15
48-D0445/5	20
48-D0445/6	30

DETERMINATION OF THE PARTICLE

STANDARD: EN 1097-7, Also conforming TO BS 812, NF P18-558

Specific gravity bottles (Gay-Lussac type)

Used to determine the specific gravity of fine soils. Glass bottle complete with capillary vent stopper.

Specific gravity bottles

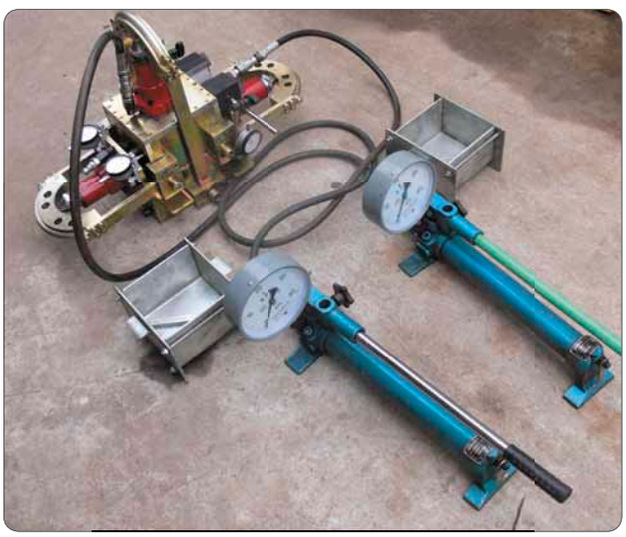
Code no.	Capacity(ml)
NR-07-5	5
NR-07-10	10
NR-07-25	25
NR-07-50	50
NR-07-100	100
NR-07-250	250
NR-07-500	500
NR-07-1000	1000
NR-07-2000	2000


48-D0440 Sand absorption cone and tamper

ROCK SHEAR BOX APPARATUS

Rock shear box apparatus. Hand operated

The technique enables the engineer to select specimens of rock from exposed faces or bore holes, observe orientation of fault lines, then set and test the fault in the shear box.
The apparatus consists of a diagonally split box assembly. The upper half incorporates a vertical ram for compressive loading, and the lower half, two horizontal rams for reversible shearing action. The force applied by the horizontal ram is aligned with the centre of the box and the discontinuity in the specimen. Pressure is applied to the rams by means of hand-operated hydraulic pumps.



TPXJ-1 Rock shear box apparatus.

Model TPXJ-1

Dimenison of shear box (mm)	160 ×150 × 200(L×W×H)
Load application	Hydraulic via two single speed hand pump
Pressure gauge	40Mpa
Horizontal displacement	Dial gauge 10 mm travel x 0.01 mm
Dimension of package(mm)	480×730×250(L×W×H)
Total Weight(Kgs)	80

Configuration Table

Model	Description	Unit	Qty
TPXJ-1A	Main engine	pcs	1
TPXJ-1B	Specimen box	pcs	6
TPXJ-1C	Hydraulic Pumps	pcs	2
TPXJ-1D	Pressure gauges	pcs	2
TPXJ-1E	Dial gauge	pcs	2
TPXJ-1F	Tools	set	1

ACCELERATED POLISHING MACHINE

STANDARD: EN 1097-8, EN 1341, 1342, 1343 (PAVING STONES AND PAVING BLOCKS)

Used to measure the resistance of road stone to the polishing action of vehicle tires on a road surface. This machine provides a method of preparing polished stone specimens for use with the friction tester when used in a laboratory environment.

48-D0525 Accelerated polishing machine

Model 48-D0525

Dimensions(L x W x H):	550x630x1600 mm(bottle fitted)
Rated power:	400 W
Road wheel:	15 to 325 rpm
Rubber wheel:	Dia. 200x44mm, 69IRHD±3IRHD
Applied load on specimens:	715 to 735 N
Feed rates Corn:	emery 20 to 34 g/min
Water:	20 to 34 ml/min
Flour emery:	2 to 4 g/min
Water:	5 to 8 ml/min
Power:	AC380V 50HZ

AGGREGATE IMPACT VALUE

STANDARD: BS 812 - NF, P18-574

The aggregate impact tester is used to determine the impacting times, to assess.
The performance of resisting temporal impacting or vibrating for all kinds of aggregate(including coarse or thin aggregate material).

AI-75 Aggregate Impact Value Apparatus

Model AI-75

Impact hammer weight:	13.75kg±0.05kg
Height of the fall hammer:	380±5mm
Impact cup:	102×50mm
Test sieve:	15.0mm,10.0mm,2.50mm
Circular section metal straight stick:	10×230mm,one part is semicircle
Gauge metal cylinder:	cylinder75±1×50±1mm

AC-150/AC-75 Aggregate Crushing Value Apparatus

AGGREGATE CRUSHING VALUE

STANDARD: BS 812-110, 111

The aggregate crushing value provides a relative measure of the resistance of an aggregate to crushing under a gradually applied compressive load. Supplied complete with cylinder, plunger, base plate, tamping rod, and measure.

AC-150 Aggregate Crushing Value Apparatus comprising
150 mm nominal diameter steel cylinder, plunger and base plate. Weight: 16.6 kg
Metal Measure 115 mm diameter x 180 mm deep.
Weight: 870 g
Tamping Rod 16 mm diameter x 600 mm long with rounded end.

AC-75 Aggregate Crushing Value Apparatus comprising
75 mm nominal diameter steel cylinder, plunger and base plate. Weight: 3.5 kg
Metal Measure 57 mm diameter x 90 mm deep.
Tamping Rod 8 mm diameter x 300 mm long with rounded end. Weight: 350 g

DETERMINATION OF FLAKINESS AND ELONGATION

STANDARD: BS 812

EL42-0410 Flakiness Gauge constructed of heavy gauge sheet steel to the dimensions specified in BS 812.
Weight: 60 g.

EL42-0410 Flakiness Gauge

EL42-0820 Length Gauge

EL42-0820 Length Gauge classifies aggregate elongation by measuring the length of individual particles. Aggregate particles are considered elongated when their length is more than 1.8 of their nominal size.
Weight: 480g

FINE AGGREGATE ANGULARITY APPARATUS

STANDARD: AASHTO T304, ASTM C 1252

This Apparatus is used to determine the uncompacted void content of a fine aggregate sample. The method indicates the angularity, sphericity, and workability of fine aggregate in a mixture for which it may be used. Each sample is mixed with a spatula until it is homogeneous. After filling the hopper, the sample is allowed to flow into the 100ml copper cylindrical measure. The measure has a locating hole to fit a lug on the Funnel Stand to ensure each sample is tested with precision and repeatability. Once the user strikes off excess material, mass is determined and void content is computed.

Included with the SG-40 is a 100ml copper Cylindrical Measure, Funnel with specified hopper, Funnel Stand and a Glass Plate for calibration.

Weight: 9 kg

Model SG-40 Fine Aggregate Angularity Apparatus

ALKALI-AGGREGATE TESTING CABINET

This cabinet used for temperature and time control of sand and gravel aggregate expansion detection.

Model JHX-1

Voltage:	220V
Heating power:	4000W
Temperature:	80°C±0.5°C
Requested environmental temperature:	-10~+45°C
Environmental humidity:	less than 85%
Capacity:	600x400x450mm

Model JHX-1 Alkali-Aggregate Testing Cabinet

METHYLENE BLUE VALUE SET

The Methylene Blue Value (MBV) of fine aggregate is a measure of the amount of potentially harmful fine material present such as clay and organic material. Material passing the No.200 (75 mm) sieve is maintained in dispersion with distilled water by mixing with a magnetic stirrer. Methylene Blue solution is titrated into the stirred dispersion in increments until a drop of the mixture on filter paper shows a blue ring indicating that the sample can absorb no more reagent. The MBV is simply a measure of the amount of reagent absorbed, and is proportional to the amount of clay or organic material present.

Methylene Blue Reagent solution is light sensitive. The solution shelf life is 4—6 months maximum, when stored in a dark cabinet in foil-wrapped amber bottles.

The 25g of powder reagent provided in the HM-58 Set is sufficient to prepare solution for over 500 tests. Other required accessories should be ordered if not available in the lab.

Weight: 7Kg

47-D0439 Methylene Blue Value Set

CENTRIFUGE EXTRACTORS

STANDARD: EN 12697-1 CLAUSE B.1.5
ASTM D2172, AASHTO T164A

The centrifuges are used for the determination of bitumen percentage in bituminous mixtures.
All models comprise a removable precision-machined rotor bowl housed in a cylindrical aluminium box.
The rotating unit is suspended on the base by four calibrated springs, which assure a perfect stability all over the test. The cover is precisely machined and fitted with solvent resistant gasket to avoid leakages. All models are fitted, for emergency use, by a hand brake system. The control panel includes: Start/Stop button, speed control knob.

CE-3000 Centrifuge extractor

Model CE-1500/CE-3000

Voltage:	220 v±10%
Speed adjustable range:	3000 r/min
Power of motor:	370 w-550 w
Max weight of specimen:	1500 g/3000 g
Orifice ring capacity:	4200 ml
Filter discs:	pack of 100
External diameter:	295 mm
Internal diameter:	95 mm

TRICHLOROETHYLENE RECYCLER
(RECYCLING APPARATUS)

Model HS-1

This apparatus is used to to recycle the trichloroethylene in the asphalt solution. to do the asphalt content testing for asphalt mixture. It must use trichloroethylene as the solvent to extract solution from the asphalt mixture. Due to the high dosage of trichloroethylene which is quite expensive, it is necessary to recycle the trichloroethylene in the asphalt solution.

Model HS-1

Working condition:	temperature 0~40°C, relative humidity no more than 85%, no merchanical shock, and no corrosive gas
One time recycling liquid volume:	1500ml-3500ml
Setting error for temperature control apparatus:	less than 86°C±1°C
Compressor power:	75w
Heating tube power:	800w
Voltage:	AC220V 50HZ

AUTOMATIC EXTRACTION APPARATUS

STANDARD: EN 12697-1, DIN 1996,
ASTM D2172, CNR A. VII NO. 38

Used for the separation and extraction of bitumen by use of solvent and sieving, for the separation of filler by centrifuge action and for the recovery of solvent material. The complete cycle is carried out automatically.

Model AE-CT5

Capacity	1000g-1500g
Working voltage:	380 v±10%
Motor power:	5 kW
Each times take out and lift time:	40 min
Each times take out and lift require menstruum:	10L
Acentric machine specimen cup:	Dia.120 mm

AE-CT5 Automatic extraction apparatus

PENETROMETER

Automatic penetrometer

Test the plasticity of lubricating grease and the hardness of bitumen.

Main structure:

1. A set of lights, control circuit inside the base, time display and penetration display windows and function keys on the panel.
2. Needle rod releaser
3. A movement knob on the left of releaser.
4. Shift sensor

Model CT-A

Time Setting:	5-30s
Max needle penetration:	500
Displace measure range:	0-30mm
Measuring accuracy:	±1%(0 - 10mm); ±10%(10.1 - 30mm)
Standard needle:	2.5±0.05g
Sample vessel:	dia. 70mm
Power supply:	220VAC 50Hz
Power:	25W Max
Gross weight:	10kg

Controller of Automatic penetrometer

CT-A Automatic penetrometer

P.R.D. SPLIT MOULD AND BASEPLATE

Used to determine the degree of compaction of asphalt for road pavement quality control testing. The unit consists of a mould split vertically on one side together with a clamp-attached baseplate. Plated for protection against corrosion.

76-B0088 P.R.D Split Mould and Baseplate
Int. dia: 152mm Height: 160mm
Weight: 10.9 Kg

76-B0088 P.R.D Split Mould and Baseplate

MARSHALL COMPACTION MOULD

STANDARD: ASTM D6926, ASTM D1559, EN 12697-10 EN 12697-30

All moulds are made from steel, protected against corrosion. They are specially made for use with the automatic compactor
Inside dia.: 101.6 mm (4")
Mould cylinder height: 87.3 mm (3.44")
Standards Weight approx.: 3.3 kg

76-B0057 Marshall compaction mould

MARSHALL COMPACTOR

STANDARD: EN 12697-10, 12697-30, BS 598-107

This equipment is used for the preparation specimens for Marshall stability testing in compliance to BS 598 standard. The digital controlled marshall electric compactor is suitable for preparing bituminous mix specimens (dia. 101.6mm x 63.5mm) used in marshall stability testing. The trip mechanism is designed to make the hammer fall at the same distance for every stroke. With some features of digital control, compact times to be preset freely, auto counting and easy to operate etc.

Model EDC-2

Hammer weight:	4.536Kg±0.009 Kg
Hammer head:	dia. 98.5 mm
Specimen cylinder dimension:	101.6 x 63.5 mm
Drop height:	457.2 mm
Compact frequency:	60 RPM
Compact time range:	0-999 times
Dimension:	540 x 540 x 1740 mm
Power:	220 V, 50 HZ, 370 W
Weight:	150 Kg

EDC-2 Marshall compactor

PNEUMATIC/HYDRAULIC ROLLER COMPACTOR

The Roller Compactor is considered to be the method of laboratory specimen compaction that results in slabs of asphaltic paving materials with properties that most closely simulate those of materials in the highway. Slabs can be compacted to target mixture densities using loads that are equivalent to those of full-scale compaction equipment.
There are pneumatic and hydraulic two model. QCX-4P is pneumatic powered and controlled by a programmable logic controller (PLC) connected to an HMI which the operator can use to select the number of passes. QCX-4H is driven by hydraulic system. A manual pressure control is adjusted to set the required load.

MODEL QCX-4P/QCX-4H

Size of test mould:	300×300×50(100)mm
Rolling and compacting wheel:	Radius: 500mm Width: 300mm
Speed:	Variable up to 10 cycles per minute
Trolley Travel:	±150 mm
Preheat temperature of rolling wheel:	120 celsius degree
Pressure of rolling wheel:	300N/cm
Instrument size:	1800×1200×600mm
Weight:	300Kg
Power:	380V 1800W

QCX-4P Pneumatic Roller compactor

ROLLER COMPACTOR

STANDARD: EN 12697-33

The pneumatically powered roller compactor was originally designed to provide a solution to the problem of making homogeneous laboratory specimens large enough to be used for wheel-tracking tests. It is used to compact to either a target mixture density or to provide a standard compactive effort to a range of different asphaltic paving materials. Vibration is available as an option.

The roller compactor can be used for:
Wheel tracking specimens, beams for fatigue and modulus tests, coring into specimens for use in modulus and permanent deformation tests.

Model HYLN-5

Power:	1000W
Electrical supply:	220-240V, 50-60Hz at 16A
Maximum load:	55kN
Trolley travel:	±150mm
Cycle time:	variable up to 10 cycles per minute
Vibrating frequency:	0-50Hz
Compressed air:	0.6-0.8Mpa, 700L/min
User languages:	English
Dimension:	1780x950x1550mm
Weight:	about 750kg

Features

- Slabs can be from 50 to 100mm thick.
- Slabs can be 305x305mm or 305x405mm
- Vibrating roller
- Safety cage with three side complete vision
- Easy to maintain
- Adopt Japanese Mitsubishi PLC automation control system, safe, reliable and stable; it has perfect self-protection function, capable of long operation under complicated driving conditions.
- Use Japan Mitsubishi touching screen to realize man-machine interaction with clear and visible Chinese-English interface, operate steadily by easy touch and display real-time data.
- Japanese Panasonic transducer can arbitrarily change vibration frequency between 0-50Hz.
- Fanlike steel roller.
- Maximum compaction load is 55Kn, equivalent to maximum static site rolling compaction.
- One-step molding of test specimen according to preset height or density.
- PLC allows to set times of rolling compaction under each load in sequence of P1, P2, P3 and P4; P1 can be set to minimum times of 2, then add load through P2, P3, and P4.
- Compaction load can be adjusted and set by 4 pressure-regulating valves.
- Vibratory compaction, adjustable frequency, simulated site vibration rolling compaction.
- 3 safe protection doors; opening any of them can break air, cut electricity to protect operator and prevent wrong operation.
- Test specimens can be used to wheel tracking test, and can be used to indirect tensile test after coring, or to be cut for fatigue test.
- Molds easy to insert and remove.

HYLN-5 Roller compactor

GYRATORY COMPACTOR

STANDARD: EN 12697-10, 12697-31, ASTM D6307, SHRP M-002

The Gyratory Compactor is built to SHRP specifications. It produces asphalt specimens that best predict long-term pavement performance. This information is not attainable from Marshall hammers or any other laboratory compaction equipment. Automatically measuring the specimen height during consolidation, produces a densification graph that the designer can use to produce the best possible paving mixture.

Touch screen

HTHY XY150 Gyratory compactor

Model HTHY XY150

Power:	380V
Vertical load:	continuously adjustable from 200 to 1500 Kpa
Pressure accuracy:	<±60 Kpa(for gyrations 1-5) <±18 Kpa(after fist 5 gyrations)
Number of gyratory:	adjustable up to 999
External angle of gyration:	1.25±0.01 degrees
Inside diameter of molds:	149.90mm to 150.00mm
Height of Mold cylinder:	230mm
Max Height of Specimen:	130mm
Gyratory compaction displacement range:	0-300 mm
Gyration rate:	30±0.5 cycles/min
Motor nominal speed:	1800 cycle/min
Dimension(HXWXD):	2140X890X940mm
Mould weight:	10.2 kg
Weight:	370 kg

• Simple To Run

Pressing a single key lowers the ram, induces teh angle, performs compaction and records data. Every specimen is compacted with a constant consolidation pressure, angle and rate of gyration, which produces consistent samples time. The parameters are easily changed in minutes by following menu instructions.

• Operator Safety

The gyratory compactor is designed with the safety of the operator in mind. All rotating parts are beneath the work surface and away from the operator. Doors and access panels have safety switches for added protection from moving parts.

• Easy Installation

It is easy to install. Its compact size allows access through standard door openings.

• Quiet

Unlike other gyratory compactors and marshall hammers, this is quiet, allowing normal conversation in the area while the machine is running.

• Factory Calibrated, Ready to Run

This compactor comes calibrated and ready for use. The pressure, angle and rate of gyration are set to SHRP guidelines. No assembly or calibration is required. Simply connect to a power supply and you are ready to operate.

• Operation

The compactor can be programmed to operate automatically or the user can manually control each compaction step. The system can be programmed to compact specimens for a set number of gyrations or to desired specimen height. User can change the compaction angle.

• Display

It shows the number of gyrations, consolidation pressure and rate of gyration.

• Attached Extruder

A specimen extruder, which is provided, can be attached directly below the control panel. Its height can be adjusted to match that of the compactor tabletop, which allows the users to slide a mould with its compacted specimen directly into the extruder.

• Data Output

Output of speicimen height per gyration may be directed automatically to a printer or computer during the consolidation cycle. In addition, the stored data may be uploaded to a computer or printed after compaction is completed.

Accessories

- Extruder for specimen removal from mould
- One dia. 150mm mould
- Height calibration block
- Height filling block

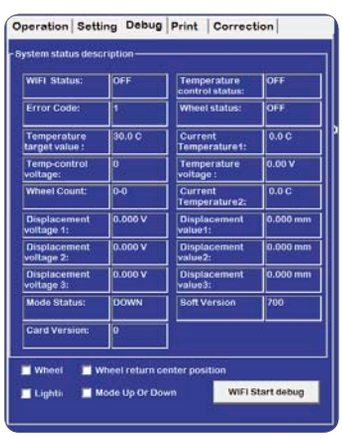
WHEEL TRACKING MACHINE

STANDARD: EN 12697-22

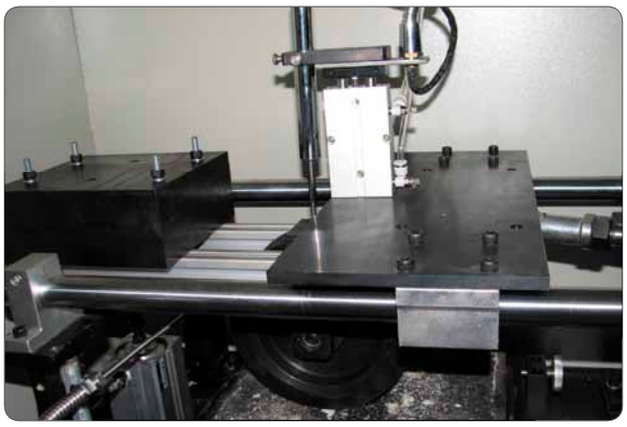
Features:

1. This tester is used to test the high-temperature wheel rutting ability of asphalt mixture for the high-temperature stability performance of related mixing proportion design.
2.This tester is made with with an embedded WiFi, advanced single-chip microcomputer controlling technology, machine finishing technology and related new developping application software.
3. Automaticly control temperature and time.
Display displacement change, record the curve and print the result table automaticly.
4. Adopt absolute temperature sensor to collect temperature.
5. Adopt high precision displacement sensor and temperautre sensor.
6. This machine is equipped with one piece personal computer with Win-8 English operating system and one piece printer.

HYCZ-1 wheel tracking machine



Software



Internal of HYCZ-1 wheel tracking machine

Model HYCZ-1

Heating Power:	3000W
Driving Motor Power:	750W
Electrical supply:	380V
Specimen size:	300x300x50mm or other require dimension
Working Method:	crank connecting rod driven test wheel movement
Rubber wheel hardness:	84±4 international standard
Test wheel moving distance:	230mm±10mm
Load cycles:	21±1 cycles/min, or 26.5±1 cycles/min
Loading device:	the contact pressure is 0.7±0.05Mpa when the temperature is 60°C, total loading is around 78kg and adjustable
Deformation measurement precision:	0.3%
Temperature control precision:	0.5°C
Working temperature:	0~80°C humidity≤90%, haven't corrosive and flammable gas
Weight:	500Kg

WHEEL TRACKING MACHINE

STANDARD: EN 12697-22

Features:

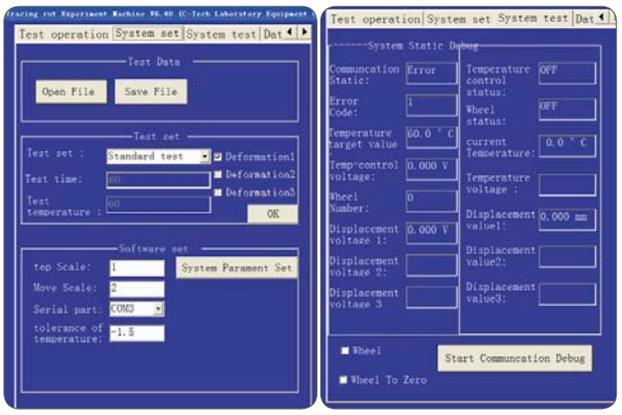
1. It can be used as water immersion test.
2. It can test 2 specimens at the same time.
3. Automatic temperature control, automatic generation and save the test results, Convenient call history data, output test report.
4. Point to point data collection: the position of the upper and lower machine control system to ensure the deformation repetitive gathering space.
5. High resolution data acquisition, high speed.
6. Wiide temperature range, high precision, good stability, PWM modulation method is adopted to improve the temperature PID control, to ensure that the temperature without overshoot.
7. Using absolute temperature sensor to collect temperature, test without temperature drift for a long time (to eliminate the general thermocouple temperature sensor working temperature drift for a long time) on the test data.
8. Air circulation in the oven, high temperature control precision.
9. Displacement sensor with high precision, under the big range accuracy is less than + / - 0.05 mm.
10 Equipped with constant temperature box integration structure, easy to move.
11. Smooth operation, no noisy.
12. Available computer with touch screen independently control (optional).
13. Can preheat six test at the same time.
14. Small volume, covers an area of only 1.52 m × 1.1 m.

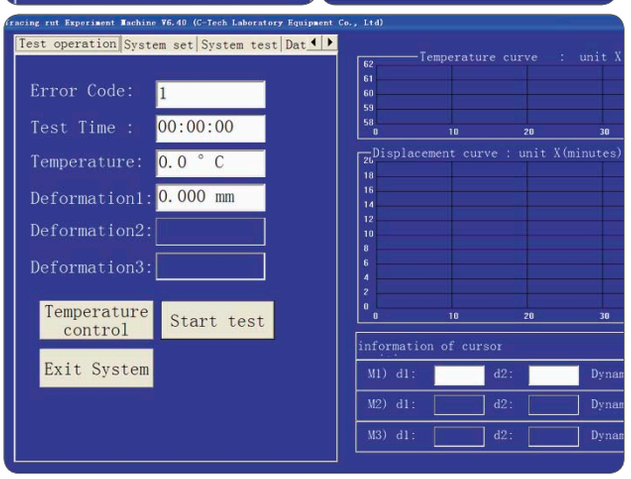
Model TPCT-5A

Power:	5 kW
Electrical supply:	380V, 50Hz
Specimen size:	300 mm×300 mm×50/100mm or other require dimension
Working Method:	the weighted wheel moving on the surface of the specimen
Rubber wheel hardness:	84±4(60℃)
Test wheel moving distance:	230±10 mm
Load cycles:	21±1 cycles/min or 26.5±1 cycles/min
Loading device:	0.7±0.05Mpa
Deformation measurement precision:	0.001 mm
Temperature control precision:	0.1℃
Working temperature:	40 ~ 80 ℃(adjustable)
Weight:	400kgs

Software Features:

1. It can be set arbitrary time and temperature.
2.Real-time display time, temperature, displacement deformation and time curve.
3. It can display time and number of RCC.
4. Automatic calculation and print the rut dynamic stability.
5. Software for displacement sensor and temperature sensor calibration precision.
6. Self-diagnosis function, and can display the fault code, to ensure reliable operation.
7. Multipoint sampling on the deformation and improve the consistency of the experimental results.





TPCT-5A wheel tracking machine

LABORATORY FOAM BITUMEN PLANT

The iFOAM Laboratory Foam Bitumen Plant is designed to be professional equipment as a true representation of “Asphalt Foaming”, a professional-grade equipment for indoor study of foamed asphalt.
iFOAM supported use of the mixer can be used for cold mix materials, but also for hot mix(warm mix) materials.
The patented foamed bitumen generator, core component of iFOAM has a function of secondary foaming, the rationary design makes the mixing of asphalt and water more evenly, so as to the asphalt foaming process more fully and foaming effect more better. In addition, an increase of some regulatory function is used to optimize the foaming properties of asphalt.
iFoam asphalt tank comes with an agitator, to ensure consistent temperature of asphalt tank from top to bottom.
iFoam asphalt tank ergonomic height above ground makes the dumping asphalt work more convenient and safe.
All iFoam bitumen pipes have heat insulation function, to avoid clogging the asphalt, eliminating lines clean.

For high-quality base layers from cold mixes

Foamed bitumen is formed by adding a small amount of water in the hot asphalt, when water is injected in hot asphalt, the water would quickly evaporate, thereby causing the asphalt saturated vapour bubbles produce an explosion in volume inflated to 15-20times. Foam asphalt increased volume and surface-active significantly, during the foaming process, significantly, and thus the asphalt to be able to fully spread the galvanizer.
When using foamed bitumen as a stabilizer, by adding a small amount of cement to make recycling mixture layer not only can obtain the necessary strength of the structure, but also can improve the surface quality and prevent crack formation. This technology is mainly used for overhaul of roading paving.
This machine formed by bitumen heating cylinders, bitumen pipeline heating system, water cooling pipe system, tank, nozzle bodies, temperature meters, pressure gauges, relays, water flow meter and other components.

LM30 Laboratroy mixer for the production of cold mixes, A perfect match for the Laboratory Foam Bitumen Plant

LM30 Laboratroy mixer

Iform laboratory foam bitumen plant

Model Iform	
Water consumption:	Min: 2.5L/Hour Max: 6.0L/Hour
Air consumption:	Min: 0L/Hour Max: 100L/Hour
Max bitumen pump pressure:	2.5Mpa
Max water pressure:	0.6Mpa
Air pressure:	Min: 140Mpa Max: 170Mpa
Water Temperature:	Min: 10°C Max: 60°C
Bitumen tank volume:	12.5L
Power supply voltage:	220V
Water tank volume:	6L
Air chamber Volume:	6L
Rated power	Bitumen pump: 1.5kW Heaters: 3.2kW Control: 0.1kW
Bitumen pump speed:	Min: 1Hz Max: 60Hz
Power supply voltage:	220V
Asphalt foam spraying time can be set:	0.1-999S
Dimension (lengthxwidthx height)	1261x670x1200mm

Direct injection of the foamed bitumen in to the mixing chamber of the laboratory mixer enables mixes to be processed to specification and test specimens to be produced. The twin-shaft compulsory mixer is not only ideally tailored to the laboratory plant in terms of performance and design, however, but is also connected to the plant's power supply. The high mixing intensity matches that of continuous mixers used on the constrution site. The LM30 has a capacity of approx. 30kg, and additionally offers variable settngs for speed and mixing time. The mixing chamber is simply pivoted downwards about 180° and the cover opened to allow discharge of the mix. And what's more: when used separately, the LM30 is suitable for most diverse mix proportions.

LOS ANGELES ABRASION MACHINE

STANDARD:
EN 1097-2, ALSO CONFORMING TO NF P18-573, UNE 83 114, UNI 8520-19, CNR NO. 34, ASTM C131

Los angeles abrasion machine

EL42-5305/01 Los angeles abration machine consists of a rolled steel drum having an inside diameter of 710 mm and internal length 510 mm. The drum is rotated by a speed reducer driven by an electric motor at a speed of between 30 and 33 r.p.m. The machine is equipped with an automatic counter, which can be preset to the required number of revolutions of the drum. The unit is supplied without the abrasive charge, which has to be ordered separately depending on the standard in use.

Abrasive charges: Set of 12 abrasive charges conforming to ASTM/UNI/CNR Standards, set of 11 abrasive charges conforming to EN Standards.

Model EL42-5305/01

Internal dimension:	710mm×510mm(±5mm)
Rotate speed:	30-33 r.p.m
Outside dimension:	1100×780×100mm
Abrasive charges:	dia. 50mm(6pcs) dia. 44.5mm(3pcs) dia. 40mm(3pcs) weight 5Kg±50g
Power:	AC380V 50HZ

EL42-5305/01 Los angeles abrasion machine

LABORATORY MIXIER

STANDARD: pr EN 12697-35

This standard concerns the laboratory mixing of samples to be used for mechanical tests as for example compaction, indirect tensile, Marshall etc.

Model STLJ-4

Mix capacity:	10L/20L
Temperature of the bath:	room temperature~250 ℃
Mixing time:	1~999 Seconds
Speed of mixing blade:	Planetary/Spindle 48p.r.m./75p.r.m.
Power:	220V, 550W× 2

Model STLJ-5

Mix capacity:	20L
Temperature of the bath:	0~200℃
Temperature accuracy:	<±0.5 ℃
Mixing time:	0~999 Seconds
Speed of the mixing blade:	Planetary/Spindle 75p.r.m./46p.r.m.
Power:	220V±10%, 10A

STLJ-5 Vertical asphalt laboratory mixer

STLJ-4 Horizontal asphalt laboratory mixer

PAVEMENT CORE DRILLING MACHINE

STANDARD: EN 12697-27

Model TPD-Q20(Petrol control)

Max Dia of drilling:	200 mm
Max depth of drilling:	700 mm
Rotate speed:	800-1200 r/min
Power:	5.5/9P
Weight:	130 Kg
Dimentions:	1080×780×1150 mm

Model TPD-100

Auxiliary power :	6.5 hp
Depth of conventional drilling:	350 mm
Rotate speed:	600-700 r/min
Drilling vertical downward direction.	
Mode of operation:	manual feed, relying on self-respect down the sampling
Drilling diameter:	150 mm below
Coring Time:	4-5 minutes to get 230 mm cement concrete
Max capacity of Water tank:	140 liters
Weight:	350 Kg
Dimentions:	1430 × 1150 × 1200mm

TPD-100 Core drilling machine

Model TPD3-250

Max Dia of drilling:	200 mm
Rotate speed:	700/1200 r/min
Power:	2.2 Kw 380 V
Weight:	50 Kg

Model TPD-Z110

Max Dia of drilling:	110 mm
Rotate speed:	0-1900 r/min
Power:	1.4 Kw 220 V
Weight:	6 Kg

TPD-Z110 Core drilling machine

TPD3-250 Core drilling machine

TPD-Q20 Core drilling machine

** Please note that all core bits need to be ordered separately.*

DUCTILITY TESTING MACHINE

STANDARD: ASTMD113

Test the length of asphaltum when asphaltum is drawn to break under certain temperature and speed.
The machine can perform three simultaneous tests. The bath is fitted with an immersion heater in order to obtain, in normal conditions, the 50°C test temperature using, as stabilising element, the cold water circulation in the stainless steel interspace.

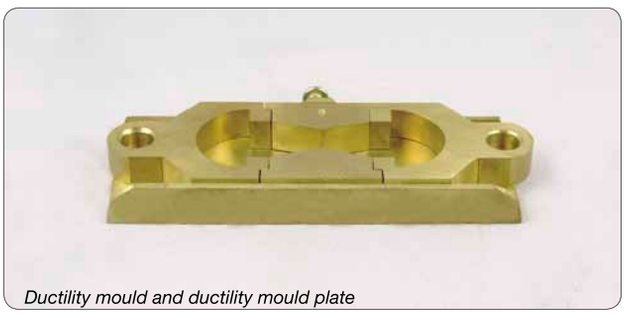
TD-508C, TD-508D Ductility testing machine

Model TD-508C, TD-508D

Power supply:	AC 220 V (-5%~+10%), 50 Hz
Measurement range:	TD-508C:1.5 m (±10mm), TD-508D:2.0 m (±10mm)
Heating type:	by an electric heater
Heating power:	TD-508C: 3000 W, TD-508D: 3200 W
Bath circulation:	by a magnetic circulation pump
Temperature controllin range:	5~49℃; digitally displayed
Temperature controlling accuracy:	±0.5℃
Dragging speed:	two grades, 10 mm/min and 50 mm/min
Measurement accuracy:	±1 mm
Ductility display:	Controlled by microprocessor, digitally displayed after data processing
Refrigeration type:	by a compressor, TD-508C: input power is 950 W TD-508D: input power is 1200 W
Ambient temperature:	-10~+35℃
Relative humidity:	≤85%
Total power consumption:	TD-508C: not more than 4100 W, TD-508D: not more than 4500 W

Ductility mould and ductility mould plate

It is made of brass, accurately machined to the specified dimensions. This need to be ordered separately.



Ductility mould and ductility mould plate

DYNAMIC VISCOMETERS

Model SYD-0620A Dynamic viscometers

Model SYD-0620A

Temperature range:	Ambiten-100°C
Temperature accuracy:	± 0.01°C
Pressure range:	40Kpa
Timing range:	0-999.9S
Timing accuracy:	0.1S
voltage (power):	220V, 1000W
Dimensions:	60X50X60 (cm)
Weight:	50kg

KINEMATIC VISCOSITY APPARATUS

Model SYD-265E Kinematic viscosity apparatus

The instrument is designed and made as per the T0619 "Asphalt Kinematic Viscosity Test (Capillary Viscometer Methods". It is suitable to determine kinematic viscosity of asphalt at a certain temperature.

Model SYD-265E

Power supply:	AC 220V± 10%, 50 Hz;
Heating power:	Two grades; 1000 W for auxiliary heating and 600 W for temperature controlling
Bath temperature:	Ambient temperature~180.0°C
Temperature controlling accuracy:	± 0.1°C;
Mercury thermometer:	1) Rod type (2) Scale division: 0.1 °C; (3) Measurement range: 100~150°C or 150~200°C;
Bath cubage:	Not less than 23 L
Sample quantity:	3 piece at the same time
Stirring motor:	6 W, 1200 RPM
Ambient temperature:	-10°C~+35°C
Relative humidity:	<85%
Temperature sensor:	Industrial platinum resistance, PT100
Total Power consumption:	Not more than 1800 W
Capillary viscometer:	7 pieces of Cannon-Fenske reserve-flow capillary viscometer tubes in a group; Their models are 200, 300, 350, 400, 450, 500, 600 respectively (Corresponding diameters are 1.02, 1.26, 1.48, 1.88, 2.20, 3.10 and 4.00 mm). The users should prepare Ubbelohde type viscometer tubes by themselves.

SKID RESISTANCE AND FRICTION TESTER

STANDARD:
EN 13036-4(ALSO CONFORMING TO EN 1097-8, ASTM E103)

Used for the measurement of surface friction properties, the apparatus is suitable for both site and laboratory applications and for Polished Stone Value tests using curved specimens from accelerated polishing tests.
The test equipment is supplied complete with:
- Additional scale for tests on Polished Stone Value specimens.
- 2 rubber sliders for site use, complete with conformity certificate.
- 1 litre washing bottle, for surface wetting.
- Tool set with case, for machine assembly.
- Rule for sliding length verification.

Model 48-B0190

Rocker weight:	1500±30 g
Distance between rocking centre and center of gravity:	410±5 mm
Positive static pressure on pavement:	22.2±0.5 kN
Size of rubber slider(Length×Width×Thickness):	75 × 25 × 7 mm
Weight of rubber slider:	16g
Package:	Aluminum alloy
Dimension of package (mm):	740 × 710 × 210
Gross weight approx:	30 Kg

48-B0190 Skid resistance and friction tester

CLEVELAND FLASH TESTER

STANDARD: ASTM D92

Used for determining the flash and fire point of petroleum products. It consists of a brass cup mounted on an electric heater with temperature controller. Conforming with the CE European directive, is supplied complete with double line-fuse, hot plate control system and thermometer -6 +400°C.

Model SYD-3536 Electric asphalt flash fire point tester

Model SYD-3536

Power supply:	AC 220V± 10%, 50 Hz;
Heating device:	a quartz tube furnace heat, no fire, explosion, power 0 ~ 600W continuously adjustable
draw sweeping device:	automatic sweep program
Thermometer:	-6 ~ 400°C, division 2°C, technical conditions compliance with technical conditions GB/T514 thermometer liquid petroleum product testing
Ignition device	1. ignition sources: gas (or other civil combustible gas, the same below); 2. nozzle diameter: 0.6 to 0.8 mm
Ambient temperature:	-10 °C ~ 50 °C
Relative humidity:	≤ 85%
Power consumption:	less than 650W
Dimensions:	350x300x400mm
Weight:	10kg

SPECIFIC GRAVITY (RICE TEST) EQUIPMENT

STANDARD: AASHTO T209, AASHTO T283

Large-Capacity Vacuum Pycnometer Set

Large-capacity unit, 10L (2.64 gal.), 6000g (13.2 lbs.) sample weight, with maximum aggregate size of 50mm (2in.). Set features domed transparent cover for easy observation of sample testing, perforated plastic shelf, which some States require; water inlet valve and 1/4"
ID hose, vacuum hose and aspirator with 3/8" NPT fitting. Flange OD is 10-3/4" (273mm); maximum
clearance above plate is 7-3/4" (197mm).
Dimensions: 9-7/16" ID x 12-1/8" (240 ID x 311mm).

Packing list

- Vibrating table
- Digital absolute vacuum gauge
- Vacuum container
- Vacuum pump

Heavy-duty vibrating table keeps sample material loose for more reliable test results. Strong, rugged-duty vibrator and sturdy base have integral, heavy-duty on/off switches. Exclusive quick-release cam/lock fasteners allow quick placement and removal of canister. Shipping wt. 12lbs (5.4kg).

Model H1820 Large-Capacity Vacuum Pycnometer Set

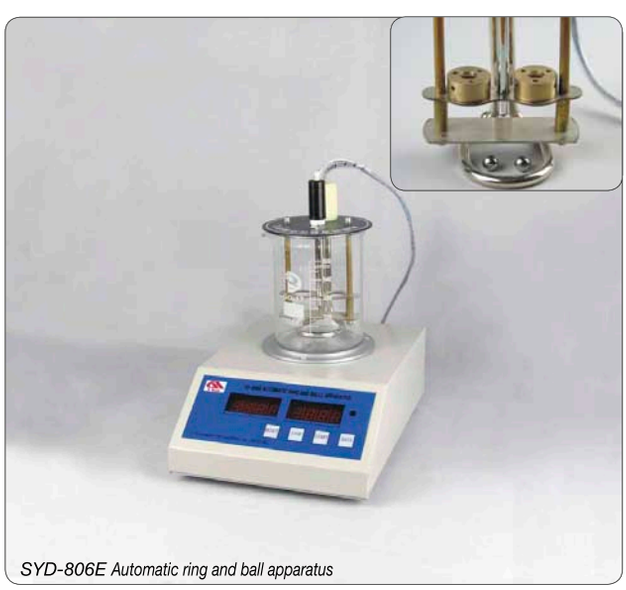
MARSHALL STABILITY TESTER

STANDARD:
ASTM D1559, AASHTO T245, NF P98-251-2, CNR NO. 30, ASTM D5581 (6" DIA. SPECIMENS)

Model 76-B0038/CB

Test speed:	without load: 50±2mm/min with load: 50±5mm/min
Max.load:	50kN
Accuracy:	±1%
Specimen size:	dia. 152.4×95.3 mm dia. 101.6×63.5 mm
Power:	380V 50Hz 550W
Net weight:	205kg
Dimensions:	770x530x950mm

76-B0038/CB Mashall stability tester



SYD-806E Automatic ring and ball apparatus

AUTOMATIC RING AND BALL APPARATUS

STANDARD:
EN 1427, ASTM D36

Introduction

This advanced microprocessor controlled automatic tester is used to determine the softening point of bitumen using, as heating fluid, water or glycerol. The softening point is taken by two light barriers suitably positioned and the temperature measured by a PT100 sensor placed in a middle position. During operation a magnetic stirrer with adjustable speed assures temperature uniformity in the vessel.
The temperature gradient is strictly maintained throughout the test by the electronic system conforming to the standards. It is used to test the temperature of asphaltum when asphaltum softens and drops 25mm under the heating conditions. Computer-controlled temperature rising speed, data checking, data saving and data processing.

Model SYD-2806E

Diameter of Steel Ball:	9.53mm
Weight of steel Ball:	3.5±0.05g
Heating container:	1000ml
Calefactive speed:	5℃±0.5℃/min
Temperature measure Range:	5~90℃
Paking size:	380x290x360mm
Gross weight:	6Kg
Net weight:	3Kg

SYD-2806G Automatic ring and ball apparatus

AUTOMATIC RING AND BALL APPARATUS (CONTINUED)

Model SYD-2806H

Determinate sample quantity every time:	4 ps
Power supply:	220V(+10%, -5%) 50Hz AC
Working surroundings:	room temperature is less 35℃
Determinate range:	Sample softening point is below 80℃, distilled water as heating medium, +5.0℃～+80℃
Sample softening point is more than 80℃, glycerol as heating medium, +32℃～+160℃	
Temperature distinguish:	0.01℃
Stirrer:	Stirring speed adjustable continuously
Heating speed:	Adjusted to 5.0±0.5℃/ min after 3 min
Softening point solution:	LCD display, printer print
Heating power:	600 W
Packing size:	480x360x600 mm
Gross weight:	18 Kg
Net weight:	12 Kg
With RS-232C communication port	

Model SYD-2806G

Measure range:	5~80 32~160
Calefactive speed:	5±0.5/min
Diameter of steel Ball:	9.53 mm
Weight of steel Ball:	3.5±0.05 g
Volume of heating container:	1000 ml
Packing size:	480x360x600 mm
Gross weight:	19 Kg
Net weight:	14 Kg
Computer-controlled temperature rising speed, automatically data checking, data saving and data processing or RS232.	

TYPE 82

Power supply:	AC 220V±10%, 50 Hz
Heating power:	2.5 kW
Temperature in working chamber:	163℃±0.5℃
Temperature controlling accuracy:	±0.5℃
Speed of dial:	5.5r/min±1r/min;
Air flow rate:	4000±200mL /min
Sample quantity:	4 pieces
Ambient temperature:	5~50℃
Relative humidity:	≤85%
Size of working chamber:	450×450×510mm

ASPHALT OVEN

STANDARD: ASTMD2872

This instrument test the loss of quality of asphaltum rotating pellicle oven after heating and value the aging capability of asphaltum. Stainless steel lumen; Computer controlled temperature testing; Digital displays, Flowmeter tests wind volume.

Type 85 Asphalt oven

Type 82 Asphalt oven

TYPE 85

Power supply:	AC 220V±10%, 50 Hz
Heating power:	2.4 kW
Temperature in working chamber:	163℃
Temperature controlling accuracy:	±0.5℃
Speed of dial:	15±0.2 RPM
Air flow rate:	4000±200mL /min
Timing device:	85 minutes
Ambient temperature:	5~50℃
Relative humidity:	≤85%
Total power consumption:	not more than 2.6 kW

AUTOMATIC ASPHALT BREAKING POINT TESTER (FRAASS METHOD)

STANDARD: EN 12593

It is suitable to determine Fraass Breaking Point of bituminous materials.
The tester includes two part they are model HWY-15 low temperature circulation constant bath and breaking point main unit.

SYD-0613A Automatic asphalt breaking point main unit

Model SYD-0613A

Power supply:	AC 220V±10%, 50 Hz
Cooling mode: by water	by water
Cooling rate:	1℃±0.5℃/min
Temperature measurement range:	-27℃~25℃
Temperature measurement error:	±0.5℃
Size of steel sheet:	41×20×0.15(mm);
Sample quantity:	it can make determination for 3 pieces of samples at the same time;
Ambient temperature:	room temperature~+30℃;
Relative humidity:	≤85%;
Total power consumption:	not more than 450 W; Note:"low temperature circulation constant bath" power consumption: not more than 1600W
Dimension:	500mm×400mm×570mm(main unit)

HWY-15 low temperature circulation constant bath

MANUAL ASPHALT BREAKING POINT TESTER (FRAASS METHOD)

Used for determining the breaking point of solid and semi-solid bitumens. The Fraas Breaking Point is the temperature at which bitumen first becomes brittle, as indicated by the appearance of cracks when a thin-film of the bitumen on a metal plaque is cooled and flexed in accordance with specified conditions.

Weight approx.: 3 kg

SYD-0613 Manual asphalt breaking point tester

The instrument is composed of outer cylinder, temperature preservation cylinder, thermometer, lower plate, upper grip, fixing rod, base, guide rail, sweeping block, handle, steel sheet and so on.
The temperature preservation cylinder is a double layer glass cylinder. It is used to place the dry ice and ethylalcohol mixtures. It is the cooling unit.
The lower plate and upper grip are metal sheets.
The fixing rod and movable rod are made of fabroil.
The base, guide rail, sweeping block and handle are used to changer the relative position of fixing rod and movable rod to make the sample sheet bending.
Thermometer: -38°C~+30°C,division value 0.5°C
Size of sample sheet: 41mm×20mm×0.15mm

ASPHALT CONTENT IGNITION OVEN

STANDARD: ASTM D6307-98 AND AASHTO T308-99

The Asphalt Content/Binder ignition oven with internal automatic balance is an environmentally-friendly and cost-effective method for the accurate determination of asphalt content.

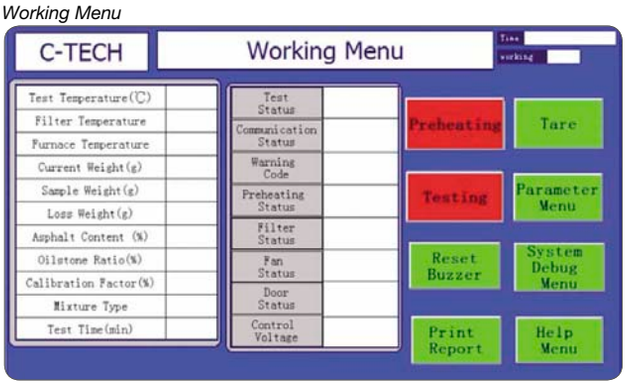
It is made of three parts: combustion device (furnace), weight measurement (electronic balance), test control and data processing (microcontroller unit).

At the bottom of the chamber there are four dia. 30mm tube ports. They are for four dia.16mm cast synthetic mica bars attached under a cordierite-mullite tray to get through the chamber, so that the tray can connect with the balance which could monitor the reduction in weight of the sample.

Put the sample plate or basket on the tray for sample placement.

Above the furnace chamber there is fumes assembly chamber where the fume mixes with air before exhausted through the flue by the fan.

Working Menu



Features

- Using the microcontroller unit and high degree of accuracy electronic balance, it is simple and easy not only to use but to maintain.
- Accurate endpoint detection according the pre-set calibration factor.
- Using new type furnace structure, heating up fast, short test time.
- New and beautiful appearance design. Furnace and balance accurate positioning for ensuring the sample center is located in the middle of balance.
- To every type of need-to-test asphalt mixture, with reference to standard technical require of American ASTM D6307-98 and AASHTO T308-99, use calibration sample to determine calibration system of asphalt mix to ensure credibility of the test result.

Model HYRS-6

Chamber Dimensions:	350x440x330 mm(WxDxH)
Electrical ratings:	380V(±10V); amps ≤20A
Capacity of balance	10kg, division value:0.1g
Operating temperature of Chamber:	up to 800°C
Sample capacity:	up to 4000g
Recommended weight of sample:	1000~1500g
Test accuracy of asphalt content:	0.1%
Microcontroller Unit:	The control panel is installed in front of the equipment. Operator can set the test parameter by pressing the buttons and progress the test. While testing, the monitor displays the real-time test data and parameter. Automatically the result paper which will be printed out by the printer is generated by the system after the test.

HYRS-6 asphalt content ignition oven

ELECTRIC THERMOSTATIC OVEN

General description

Drying, heating, hot preservation, ageing of components, thermal tests in laboratories and industries.
Temperature range 300°C maximum
Volumes: 32, 58, 112, 225, 343, 490, 686, 980 litres.

Control panel and air flow adjustment knob

Internal fan for air circulation

All ovens are fan circulated models. The air flow speeds up the drying process and also evens the temperature distribution within the oven.
The fan and heaters are in the rear of the oven, shielded from the workspace by a stainless steel baffle.
Air is drawn into the fan from the centre of the oven and passes over the temperature sensor and the sheathed heater elements. The heated air is distributed around the baffle to both left and right and then re-circulated by the fan.

Model XU032

Oven's back detail

Oven's internal detail of model XU225

Technical data

Ovens	XU032	XU058	XU112	XU225	XU343	XU490	XU686	XU980
Performance								
Temperature range	ambient + 10°C to 300°C							
Temp spatial variation 105°C±°C	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Temperature fluctuation ±°C	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Dimensions								
Work chamber volume L	32	58	112	225	343	490	686	980
Internal width mm	300	400	500	500	700	700	700	1000
Internal depth mm	270	360	450	450	700	700	700	700
Internal height mm	400	400	500	1000	700	1000	1400	1400
External width mm	464	565	664	668	840	840	840	1140
External depth mm	566	602	692	710	910	910	910	1015
External height mm	694	694	794	1294	970	1270	1670	1670
Shelves in stainless steel								
Number standard / max	2/6	2/6	2/8	2/17	2/11	2/17	2/24	2/24
Shelves dimensions (w x d) mm	270x240	370x330	470x420	500x450	670x670	670x670	670x670	970x670
Max load shelf / oven kg	30/60	30/60	30/60	30/120	30/120	30/240	30/240	30/240
Number of door (s)	1	1	1	1	1	1	1	2
Weight (empty) Kg	35	47	54	120	155	205	235	295
Electrical supply 50 Hz 230 Volts single-phase, 400 Vtri+T+N/power>4000 Watts: 400 V 3-phase five wires								
Max rating 300°C Watts	1000	2000	2000	3000	4000	4000	6000	6000

Factory options (must be specified at the time of ordering the main unit)			
OG9001	Extension of max temperature up to 300°C	OP0014	Work chamber lighting 40 watts
OG9002	Outside casing also made of 304 stainless steel	OG9006	Door window
OG9003	Inner case in 316L stainless steel	OG9005	Air circulation variator
OG9004	Special colour for external casing (indicate RAL)	OP0057	Additional thermocouple and connector
OP0038	Digital timer 0/99 hours with auto/manu selection	OG9007	Additional safety thermostat class 2
OG9008	Weekly automation with digital program timer	OP0001	Sound alarm
OP0049	Temperature profiler (4 programs of 16 segments each	OP0041	Additional access port diameter 40 mm & silicone cork
			Additional access port diameter 60 mm & silicone cork
		OP0042	
OP0026	Air extractor 60 m^3/hour	OP0079	Air extractor 60 m^3/hour with variator
OP0024	Air extractor 200 m^3/hour	OP0080	Air extractor 200 m^3/hour with variator
OG9014	Temperature paper recorder 1 probe	OP0010	Calibration certificate 1 temperature 1 point
OG9015	Temperature paper recorder 2 probes	OP0012	Calibration certificate 1 temperature 9 points

Accessories (can be ordered separately)			
GA9001	Extra shelf 30 kg and supports	GA9004	Stacking kit
GA9002	Reinforced extra shelf 60 kg and supports	GA9005	Sub-frame
		GA9006	Sub-frame with castors
GA9003	Stainless steel tray (20 mm depth)	AC0011	Silicone cork for access port diameter 40 mm
		AC0012	Silicone cork for access port diameter 60 mm

ELECTRIC THERMOSTATIC OVEN

It adopts in drying, curing, wax-melting, solidifying and sterilizing in the fields of industrial mining enterprise, medicine and health and scientific research etc.

Characteristics:

1. The case adopts electrostatic spraying technology. The film is steady and beautiful.
2. The observation window on the door is easy to observe the heating situation of articles in the workroom at any time.
3. It has high precision of temperature control and steady property.

Electromagnetic lock

Ovens	DGT-G52A	DGT-G82A	DGT-G135A	DGT-G185A	DGT-G210A	DGT-490A
Performance						
Temperature range	0°C to 200°C					
Accuracy	±0.5°C					
Volatility	±0.5°C					
Uniformity	±0.5°C			±1.0°C		
Dimensions						
Work chamber volume L	52	82	135	185	210	490
Internal width mm	350	420	490	540	592	700
Internal depth mm	360	450	510	490	530	700
Internal height mm	410	470	540	690	682	1000
External width mm	480	557	622	665	742	840
External depth mm	460	567	640	620	670	905
External height mm	640	739	859	1020	982	1230
Material	Internal: mirror finished stainless steel			External: Cold rolled steel sheet, plastic-sprayed surface		
Number standard / max	2/4	2/4	2/4	2/4	2/4	3/10
Shelves dimensions (w x d) mm	316x315	380x408	444x463	482x445	470x528	660x615
Net weight(Kg)	48	54	60	78	90	300
Power(W)	1200	1500	1500	1800	2000	3000
Voltage	AC220V±10V,50HZ±1HZ					
Controller	PID microprocessor, light touch control, digital display					
Sensor	K type thermocouple					
Control time	Time-switch (1-999 minutes)	Temperature 5-45°C	Relative highest humidity 80%	sea level elevation 2000m		
Accessories (can be ordered separately)						
Type k sensor	Type PT100 sensor		300W heater	1200W heater or 1500W heater		3000W heater
Fan motor, resistance	Power switch		Shelve	handle		

HIGH TEMPERATURE OVENS

The high temperature ovens are easy to use and get functional and practical equipments together, at very reasonable prices compared with furnaces.
They are suitable for a large number of applications : burning, degassing, pre-heating, hardening, hot air sterilization, tests ... in many branches of industry.
All high temperature ovens are strongly ventilated for the accuracy and homogeneity of temperature in the volume.
Low thermal mass insulation materials and strong power rating have been used to achieve rapid heating.

Performances

Temperature up to 500°C.
Temperature fluctuation is less than ± 0,2 °C .
Temperature spatial variation is less than ± 2,5°C at 200°C (measure done with 9 probes inside the work chamber).

Construction

2 sizes of ovens are available: from 125 Liter, 343 Liters.
The inner casing is made of corrosion and heating resistant stainless steel, type 321. The outer case is made of sheet steel, finished in a tough stoved epoxy paint. (colour light grey RAL 7035) No contact between inner and outer case and an optimised insulation minimise heat transfer to the ambient air and heat dissipation. Walls and door are insulated with glass fibre. The insulation is 150 mm thick, this ensures efficicent operation, low external temperatures and excellent thermal stability. A special gasket provides a good seal between the door and the oven body, aiding insulation. The insulation as well as the gasket are asbestos-free. The door is hinged on the right hand side and closed with a robust 2 points fastener.

Heating

The tubular heating elements are sheathed and made of stainless steel. They are ideally placed in the air blow. No-wear switching (solid state relay) is used for activating and deactivating the heating elements.

Internal fan for air circulation

All ovens are fan circulated. The air flow speeds up the heating time and also evens the temperature distribution within the oven. The centrifugal blower is located at the top of the oven, shielded from the workspace by a stainless steel baffle. Air is drawn into the fan from the top in the centre of the oven and passes over the temperature sensor and the sheathed heater elements. The heated air is distributed in the bottom of the oven through the whole width and then re-circulated by the fan.

Exhaust air, fresh air supply

Through access vent, fresh air is provided and pre-heated before entering the chamber. A 40 or 60 mm diameter exhaust vent (depending on the model) is provided with an adjustable valve to control the exhaust air flow.

Temperature control and safety

Temperature sensor is a J thermocouple. Temperature is controlled by a precise microprocessor-based controller that provides a high accuracy and prevents the set temperature from being exceeded. The controller digitally displays continuously the set and actual values oftemperature. An independent second electronic controller, with a second thermocouple, has an adjustable upper limit, giving a class 2 protection.

HIGH TEMP OVENS(CONTINUED)

Equipment

Fixed shelving for convenient loading / unloading. 1 shelf is supplied for TH075 and 2 for the other models. Additional shelves are available. A 20 mm diameter access port with fiber cork is fitted as standard in the left hand wall of the oven.

Technical data

Ovens	TH125	TH343
Performance		
Temperature range	ambient + 20°C to 500°C	
Temp spatial variation 200°C (1) ±°C	< 2,5	< 2,5
Temperature fluctuation ±°C	< 0,2	< 0,2
Dimensions		
Work chamber volume L	125	343
Internal width mm	500	700
Internal depth mm	500	1000
Internal height mm	500	700
External width mm	750	935
External depth mm	750	1125
External height mm	1000	1250
Shelves in stainless steel		
Number standard / maximum	2/3	2/4
Shelves dimensions (w x d) mm	470x470	670x670
Max load shelf / oven kg	30/60	30/120
Number of door (s)	1	1
Mass (empty) Kg	115	210
Electrical supply		
Voltage 50 HZ Volts	1000	1000
Max power rating Watts	4000	9000

Factory options (must be specified at the time of ordering the main unit)	
OG9002	Outside casing also made of 304 stainless steel
OG9004	Special colour for external casing (indicate RAL)
OP0038	Digital timer 0/99 hours with auto/manu selection
OG9008	Digital weekly program timer
OP0049	Temperature profiler (4 programs of 16 segments each
OP0024	Air extractor 230 m3/hour
OP0025	Air extractor 485 m3/hour
OP0016	Temperature paper recorder 1 probe
OP0017	Temperature paper recorder 2 probes

Accessories (can be ordered separately)	
GA9001	Extra shelf 30 kg and supports
GA9002	Reinforced extra shelf 60 kg and supports

VACUUM OVEN

General description

A highly versatile range of compact vacuum ovens. These vacuum ov-ens enable heat sensitive materials to be dried at low temperature.
More stable samples can be dried at higher temperature up to 200°C or 300°C as an option.
You can use our vacuum ovens for any laboratory or industrial application.
Designed to operate from room temperature +20°C up to 200°C(300°C in option).
Final vacuum of 10-2 mBar, depending on the vacuum pump used.
Temperature time fluctuation: less than ± 0,2°C.
Multiple position shelving for convenient loading / unloading.
Additional shelves are available.

Construction:

- Four sizes from 20 to 240 litres.
- The inner casing is made of corrosion resistant stainless steel, with rounded corners.
- The outer casing is made of sheet steel, finished in a tough stoved epoxy paint (colour light grey RAL7035).
- No contact between inner and outer casing and an optimised insulation minimises heat dissipation.
- The walls are insulated with glasswool, low external temperatures and excellent thermal stability.
- The door is a thick toughened glass plate.
- The silicone rubber gasket provides a good seal between the door and the oven body.
- The insulation and the gasket are asbestos-free.
- The door is hinged on the right hand side.

Heating Quality:

The chamber is heated by large area heaters strapped to its outer surface.
No-wear switching (solid state relay) is used for activating and deactivating the heating elements.
As an option, internal heating plates can be installed instead of the external heating elements.

Vacuum Control:

An exhaust solenoid valve is situated for convenience connection to a vacuum pump. The inlet solenoid valve ac-cept air entry or inert gas connection.
A vacuum gauge is fitted showing vacuum pulled from 0 to 1000 mBar.
The valve is a 3-position manual for the 20 litres model.

Temperature Control & Safety:

Temperature sensor is a J thermocouple inside the chamber. The temperature is controlled by a precise micropro-cessor based-controller that provides a high accuracy and prevents the set temperature from being exceeded.
The independent over temperature thermostat cut out has an adjustable upper limit, giving a class 3.1 protec-tion.
The auto tune PID digital controller digitally displays the set and actual values of temperature, and incorporates a heater indicator lamp.
The control panel houses an ON/OFF switch and a fault indicator lamp which lights when the safety thermostat comes into operation.

ALL C3000 Controller Functions:

The PID digital controller offers the following functions:
- Temperature Measurement with Pt100 Ω.
- Set and actual temperature display.
- Delayed start: from 1mn to 99h59 mn.
- Heating ramp: from 0,1 to 20°C/mn.
- Heating timer: 0 to 99h59 mn.
- Repeat loop.
- Buzzer at the end of the cycle.
- Overtemperature cut out.

Technical data

Ovens	XF020	XF050	XF120	XF240
Performance				
Temperature range	ambient + 10°C to 300°C			
Maximal final vacuum(primary vacuum pump) mbar	10^{-2}	10^{-2}	10^{-2}	10^{-2}
Temperature fluctuation ±°C	< 0.2	< 0.2	< 0.2	< 0.2
Dimensions				
Working volume dm^3	20	51	110	220
Internal width mm	250	320	470	470
Internal depth mm	320	500	500	1000
Internal height mm	250	320	470	470
External width mm	450	530	750	740
External depth mm	547	710	775	1300
External height mm	552	635	840	840
Glass thickness(securit)	8	10	15	15
Shelves in stainless steel				
Number standard / max	2/6	2/6	2/8	2/17
Shelves dimensions (w x d) mm	215x260	285x440	435x440	435x940
Max load shelf / oven kg	30/60	30/60	30/60	30/90
Weight (empty) Kg	44	70	149	230
Electrical supply 50 Hz 230 Volts (1) above 4000 watts: 400 V tri + T + N				
Maximum power rating 300° Watts	800	1860	3720	5580*

Factory options (must be specified at the time of ordering the main unit)			
OG9001	Extension of max temperature up to 300°C as perk	OP0051	Additional PT100 probe and connector
OG9002	Outside casing also made of 304 stainless steel	OP0037	Precision control exhaust valve
OG9004	Special colour for external casing (indicate RAL)	OG9007	Pressure regulation with digital display
OG9014 OG9015	Portable paper recorder 1 temperature Portable paper recorder 2 temperatures	OP0001	Sound alarm
OG9008	Weekly automation with digital program timer	OP0093	Pressure regulation with digital display
OG9016	Furniture for vacuum pump	-	Heating shelf
OP0046	Piezo-electric vacuum gauge and digital display	-	Hign vacuum 10^{-6}mbar

Accessories (can be ordered separately)			
GA 9001	Extra shelf 30kg and 2 supports	-	Vacuum pump 8.5m^3/h
-	Vacuum pump 4 m^3/h	-	Vacuum pump 17m^3/h
-	Vacuum pump 5.4m^3/h		

MUFFLE FURNACES

MF-1200 Muffle furnaces

Used for high temperature heating and drying.

MF-1200 Muffle furnaces

Main features:

1. Resistance wire embedded inside lining, up, down, left, right, bottom, 5 surface heating, furnace temperature uniformity.
2. Having a vent to discharge the steam and other gases, prolong service life of heating elements.
3. Having a hole to observe the heating condition.
4. Chamber adopts advanced light material (0.29 density), compared with the traditional muffle furnace weight the 2/3, the rate of temperature have doubled, save the energy, the life expectancy increased 4 times.
5. Controling temperature by programmable temperature control meter, intelligent temperature control, easy to operate.

Model MF-1200

Max. temperature:	1200℃
Workign temperature:	1100℃
Inside dimensions:	200x200x200mm
Voltage:	220V, 50HZ
Power:	4kW
Temperature tolerance:	± 0.5℃
Temperature control mode:	Programmable automatic control

MF-1000 Muffle furnaces

MF-1000 Muffle furnaces

Model	Max. temp.(℃)	Voltage	Power (kW)	Workroom (mm)
MF-1000/1	1000	220V/50HZ	2.5	200x120x80
MF-1000/2	1000	220V/50HZ	4	300x200x120

SAND BATH

Model	Specification	Voltage (V)	Power (kW)	Workroom dimension mm
SB-01	300x250	220	1.5	300x250x70
SB-02	450x350	220	2	450x350x70

WATER BATH

WB-01/A Water bath

Main feature

Stainless steel inner tank, built in heating pipe, Pt100 transducer.
Temperature constancy, convenient to set. Equipped with oil bath.

General description

Used for drying,concentration,distill,dripping chemical reagent,medicine and biological product, also used for water bath constant temperature heating and another temperature test.

Model WB-01/A

Capacity(cm):	26 dia x 15 high
Rating(kw):	1.5
Temp range:	room temperature to 100℃
Lift distance(mm):	120 manually operation
Net weight:	8kg

TPW seriesThermostatic water bath

Uses:

It applies in distilling, drying, concentrating and thermostatic heating the chemical drugs, checking serum and thermostatic culture the biological products and boiling sterilizing in laboratories, medical and health units, scientific and research units and colleges and universities etc.

Characteristics:

The shell adopts electrostatic spraying technology. The inner bladder and upper cover are made of high-quality stainless steel plate with property of corrosion resistant. There are hand-pointer type, digital display type and intellectual type for controlling temperature.

Specification

Type	TPW420	TPW600
Voltage(v)	220	220
Power(w)	500±10%	750±10%
Temperature uniformity (℃)	≤±1	≤±1
Temperature tolerance (℃)	≤±1	≤±1
Temperature range(℃)	37-65	37-65
Workroom(mm)	420x180x105	600x300x150

Inside detail of TPW seriesThermostatic water bath

WATER BATH(CONTINUED)

TPKW series Water bath

TPKW series Water bath

Characteristics:
The surface is made of coated steel. The inner bladder and the upper cover are made of stainless steel, it resists corrosion strongly. There are hand pointer and digital display meters. It has advantages of high precision in controlling.

TPHW Tri-purpose water bath

Characteristics:
The shell adopts electrostatic spraying technology. The inner bladder and upper cover are made of high-quality stainless steel plate with property of corrosion resistant. There are hand-pointer type, digital display type and intellectual type for controlling temperature.

Model	Voltage(v)	Power(w)	Temperature uniformity(℃)	Temperature tolerance	Temperature range(℃)	Workroom (mm)
TPHW420	220	1000±10%	≤±1	≤±1	37-100	420x180x105
TPHW600	220	2000±10%	≤±1	≤±1	37-100	600x300x150

Specification

Model	TPKW-D-1	TPKW-D-2	TPKW-D-4	TPKW-D-6	TPKW-S-4	TPKW-S-6	TPKW-S-8
Specifications	single	single	single line 4 holes	single line 6 holes	double line 4 holes	double line 6 holes	double line 8 holes
Voltage(v)	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz	220V/50Hz
Power(w)	300	500	1000	1500	1000	1500	2000
Temperature uniformity(℃)	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1
Temperature tolerance(℃)	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1
Temperature range(℃)	RT+10-100	RT+10-101	RT+10-102	RT+10-103	RT+10-104	RT+10-105	RT+10-106
Temperature sensitivity(℃)	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1	≤±1
Tolerance of display(℃)	≤±2	≤±2	≤±2	≤±2	≤±2	≤±2	≤±2
Workroom (mm)	160x170x90	325x170x90	650x170x90	940x170x90	325x330x90	480x330x90	650x330x90

TEST SIEVES

STANDARD:
The range of sieves offered include ISO, EN, BS and ASTM sieves.

Note: Frame dia. 8inch, 12inch, 75mm and 450mm test sieves also can be requested.

Perforated sieves specification

Aperture Size	Frame Dimeter 200mm	Frame Diameter 300mm
4.00mm	TPH02-1500	TPH03-2500
4.75mm	TPH02-1510	TPH03-2510
5.00mm	TPH02-1515	TPH03-2515
5.60mm	TPH02-1520	TPH03-2520
6.30mm	TPH02-1525	TPH03-2525
6.70mm	TPH02-1530	TPH03-2530
7.10mm	TPH02-1535	TPH03-2535
8.00mm	TPH02-1540	TPH03-2540
9.50mm	TPH02-1550	TPH03-2550
10.0mm	TPH02-1555	TPH03-2555
11.2mm	TPH02-1560	TPH03-2560
12.5mm	TPH02-1565	TPH03-2565
13.2mm	TPH02-1570	TPH03-2570
14.0mm	TPH02-1575	TPH03-2575
16.0mm	TPH02-1580	TPH03-2580
19.0mm	TPH02-1590	TPH03-2590
20.0mm	TPH02-1595	TPH03-2595
22.4mm	TPH02-1600	TPH03-2600
25.0mm	TPH02-1605	TPH03-2605
26.5mm	TPH02-1610	/
28.0mm	TPH02-1615	TPH03-2615
31.5mm	TPH02-1630	TPH03-2630
37.5mm	TPH02-1640	TPH03-2640
40.0mm	TPH02-1645	TPH03-2645
45.0mm	TPH02-1650	TPH03-2650
50.0mm	TPH02-1655	TPH03-2655
53.0mm	TPH02-1670	TPH03-2670
75.0mm	TPH02-1680	TPH03-2680
80.0mm	TPH02-1685	TPH03-2685
90.0mm	TPH02-1690	TPH03-2690
125mm	TPH02-1710	TPH03-2710

There are two materials test sives includes stainless steel, polished chrome Iron sheet.

Test sieve kit for gravel

Includes twelve test sieves and one set of lid and cover.
Mesh size is shown as below:
2.36mm, 4.75mm, 9.50mm, 16.0mm, 19.0mm, 26.5mm, 31.5mm, 37.5mm, 53.0mm, 63.0mm, 0.75mm, 90.0mm.

Test sieve kit for sand and gravel aggregate

Includes seven dia. 300 test sieves and one set of lid and cover. Mesh size is shown as below:
9.50mm, 4.75mm, 2.36mm, 1.18mm, 600um, 300um, 150um.

Test sieve kit for asphalt aggregate

Includes seven dia. 300 test sives and one set of lid and cover. Mesh size is shown as below:
0.075mm, 0.15mm, 0.3mm, 0.6mm, 1.18mm, 2.36mm, 4.75mm, 9.5mm, 13.2mm, 16mm, 19mm, 26.5mm, 31.5mm, 53mm

Test sieve kit for soil

Includes eleven dia. 200 test sives and one set of lid and cover. Mesh size is shown as below:
0.074mm, 0.25mm, 0.5mm,1.0mm, 2.0mm, 5mm, 10mm, 20mm, 40mm, 60mm

Woven wire test sieves specification

Aperture Size	Frame Dimeter 200mm	Frame Diameter 300mm
38μm	TPS02-0400	TPS03-0400
45μm	TPS02-0325	TPS03-0325
53μm	TPS02-0270	TPS03-0270
63μm	TPS02-0230	TPS03-0230
75μm	TPS02-0200	TPS03-0200
90μm	TPS02-0170	TPS03-0170
106μm	TPS02-0140	TPS03-0140
125μm	TPS02-0120	TPS03-0120
150μm	TPS02-0100	TPS03-0100
180μm	TPS02-0080	TPS03-0080
212μm	TPS02-0070	TPS03-0070
250μm	TPS02-0060	TPS03-0060
300μm	TPS02-0050	TPS03-0050
355μm	TPS02-0045	TPS03-0045
425μm	TPS02-0040	TPS03-0040
500μm	TPS02-0035	TPS03-0035
600μm	TPS02-0030	TPS03-0030
710μm	TPS02-0025	TPS03-0025
850μm	TPS02-0020	TPS03-0020
1.00mm	TPS02-0018	TPS03-0018
1.18mm	TPS02-0016	TPS03-0016
1.40mm	TPS02-0014	TPS03-0014
1.70mm	TPS02-0012	TPS03-0012
2.00mm	TPS02-0010	TPS03-0010
2.36mm	TPS02-0008	TPS03-0008
2.80mm	TPS02-0007	TPS03-0007
4.00mm	TPS02-0005	TPS03-0005
4.75mm	TPS02-0004	TPS03-0004

SIEVE SHAKER

Model TPZ-1 High-frequency Sieve Shaker is mainly used for graded analysis of non-cohesive and dry grain substance.

Note: the sieves can be order separately.

Model TPZ-1

Shaking frequency:	500 times/min.
Shaking method:	up and down
Shaking amplitude:	1.5 mm
Time setting:	0 – 60 min. selectable
Motor power:	25 W
Sieve size:	Ø200 x 50 mm (9pieces) or Ø300 x 75mm (7pieces)
Sieve opening:	20 – 0.75 mm
Power supply:	220 V 50 Hz
Dimension:	430 x 430 x 750 mm
Weight:	16 kg

TPZ-1 sieve shaker

TPZ-2 sieve shaker

TPZ-2 sieve shaker controller

Vibrating Screen is a latest laboratory automatic screen designed and developed by our factory, applied to particle analysis in the fields of pharmacy, metallurgy, foods, cosmetics and grain, and characterized by convenient operation, no rotary component, and electronic controlled amplitude and frequency. Its performance index is equal to that of the vibrator with sieve manufactured by German FRITSCH. In comparison with the traditional manual screen, it can greatly reduce labor intensity of operators and raise working efficiency. It is an essential laboratory screen for particle analysis.

Model TPZ-2

Operating range:	≤325 mesh
Vibration frequency:	3000 times/min, 6000 times/min
Amplitude selection:	0-3 mm, continuous adjustment
Vibration mode:	Fine vibration; Intermittent Vibration; Continuation Vibration
Sieve size:	Ø200 x 50 mm
Weight:	20 kg
Power supply:	AC220V±22V, 50Hz±1Hz

DIAL INDICATORS

Dial indicators are precise measuring tools to transform linear to angle one by mechanical transmission devices. They are mainly used to measure the linear size, shape and position errors of various workpieces.

Features: Steel body, metal dial adjustable ring, Semi-seal cap, Diameter of dial is dia.58.5mm.

Model	Range (mm)	Grad. (mm)
TP0501	0-3	0.01
TP0502	0-5	0.01
TP0503	0-10	0.01
TP0504	0-10	0.01
TP0505	0-10	0.01
TP0506	0-20	0.01
TP0507	0-25	0.01
TP0508	0-30	0.01
TP0601	0-0.25	0.005
TP0602	0-0.5	0.005
TP0603	0-0.1	0.005
TP0604	0-0.25	0.001
TP0605	0-0.5	0.001
TP0606	0-1	0.001

LAB MEASURLING CYLINDER

Cat. NO.	Capacity ml	ID x Height mm
PP-MC01	10	10 x 180
PP-MC02	30	14 x 240
PP-MC03	50	16 x 240
PP-MC04	100	26 x 250
PP-MC05	200	33 x 290
PP-MC06	300	41 x 290
PP-MC07	500	49 x 340
PP-MC08	1000	61 x 420

PP-WB Wash bottle

Cat. NO.	Capacity ml
PP-WB01	100
PP-WB02	250
PP-WB03	500
PP-WB04	1000

PP-WB wash bottle

DIGITAL THERMOMETER

STANDARD: EN 12697-13

Digital Thermometer.

The meter is supplied without probes, which have to be selected and ordered separately.

EL82-5442 Digital Thermometer.

EL82-5442

The type of transducer:	K type thermocouple (NiCr-Niai.)
Resolution:	1°C
Accuracy:	0°C to 500°C: ± (0.75%+1°C) 500°C to 750°C: ± (1%+1°C)
Measure range:	-50°C to 750°C
Operating Temperature:	0°C to 50°C
Relative Humidity:	≤80% RH
Storing Temperature:	-30°C to 60°C
Relative Humidity:	≤80% RH
Dimensions:	24×72×108 mm

EL82-5443 Digital Thermometer.

EL82-5443

Temp. measuring range:	-50°C~+300°C(-58°F~+572°F)
Resolution:	≥400 °F is 1, <400 °F is 0.1
Accuracy:	(-20°C~+80°C)±1°C
Power:	DC1.5V button battery LR44

WET FILM THICKNESS GAUGE

STANDARD: ASTM D 4414-A, ISO 2808-7B, BS 3900-C5-7B, NF T30-125.

Wet Film Thickness Gauges are used to determine the thickness of liquid coatings. The measurements show an approximate information on the thickness of a liquid layer.

The Wet Film Thickness Gauge is available in rectangular or sexangular shape with different subdivisions of the measuring range each.

The tolerance of a particular gauge will be so certified at gauge midpoint and near its lower and upper recommended use limits and a suitable certificate will be included with the shipment of the gauge.

There are three levels of certification available:

Full Certification of both sides of the gauge for Mil and Micron, Single Scale certification in Mil, Single Scale certification in Micron.

Features:
Solvent-proof and wear-resistant,
OEM sevice is available

Wet film thickness gauge (Rectangular)

Model	WFR-A80/WFR-S80
Material:	Aluminium(WFR-A80)
Material:	Stainless steel (WFR-S80)
Size:	83 x 58 mm^2 approx.
Thickness:	0.8 mm approx.
4 Measuring ranges:	1 to 6 Mil (25 to 152 Micro) 7 to 12 Mil (178 to 305 Micro) 14 to 30 Mil (356 to 762 Micro) 35 to 80 Mil (889 to 2032 Micro)
Scale indications:	front Mil, rear Micro

Wet film thickness gauge (Hexagonal)

Model:	WFH-A113/WFH-S113
Material:	Aluminium(WFH-A113)
Material:	Stainless steel (WFH-S113)
Thickness:	0.8 mm approx.
Measuring ranges:	0 to 113 Mil (25 to 3000 Micro)
Scale indications:	front Mil, rear Micro

Wet film thickness wheels

Model:	WFW-S150
Material:	Stainless steel (WFW-S150)
Measuring ranges:	0 to 150 Micro
Accuracy:	15 Micro

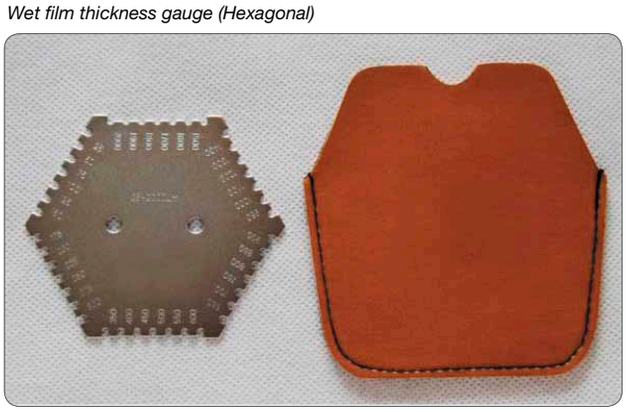
These punched aluminium combs offer the user a low cost method of measuring the wet film thickness.

Test Method - How to use a Wet Film Comb

- For measuring, push the comb gauge perpendicularly into the film using the measuring range that corresponds to the expected film thickness
- Remove the comb gauge from the coating
- The wet film thickness will fall between the clearance of the shortest tab that is wet and the clearance of the next shortest dry tab

Aluminium wet film thickness gauge (Rectangular)

Wet film thickness gauge (Hexagonal)



Wet film thickness wheels

201 Beaker, low Form, Graduated

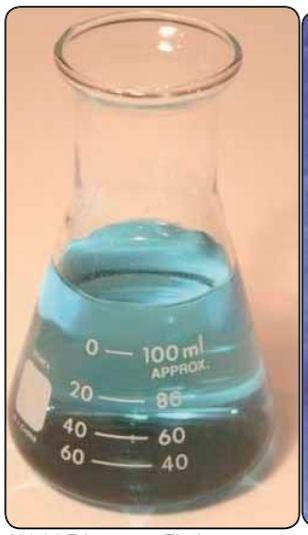
202 Beaker, Tall Form, Graduated

201 Beaker, low Form, Graduated

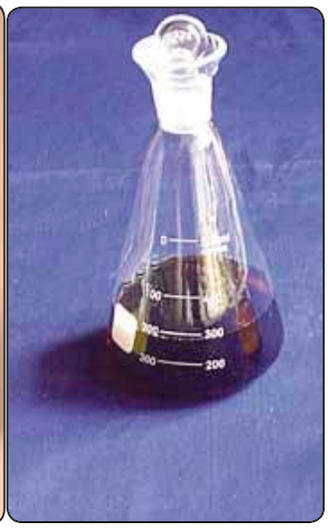
Cat.No	Capacity ml	Grad. range ml	O.D×Height. mm	Grad. Interval ml
201-5	5	-	22×30	-
201-10	10	4-8	26×35	4
201-20	20	10-15	32×43	5
201-25	25	10-15	34×50	5
201-50	50	10-40	42×60	5
201-100	100	20-80	50×70	10
201-150	150	20-140	60×80	10
201-200	200	25-175	66×90	10
201-250	250	25-200	70×95	25
201-300	300	25-250	74×105	25
201-400	400	50-350	80×110	25
201-500	500	50-400	85×120	25
201-600	600	100-500	90×125	50
201-800	800	100-750	100×135	50
201-1L	1000	100-900	105×145	50
201-2L	2000	200-1800	130×185	100
201-3L	3000	300-2800	150×210	100
201-4L	4000	500-3500	161×253	500
201-5L	5000	500-4500	170×270	500

202 Beaker, Tall Form, Graduated

Cat.No	Capacity ml	Grad. range ml	O.D×Height. mm	Grad. Interval ml
202-50	50	10-40	38×70	10
202-100	100	20-80	48×80	10
202-150	150	20-140	54×95	20
202-250	250	25-200	60×120	25
202-300	300	50-250	64×125	25
202-400	400	50-350	70×130	25
202-500	500	100-400	75×140	50
202-600	600	100-500	80×150	50
202-800	800	100-750	90×175	50
202-1L	1000	100-900	95×180	50
202-2L	2000	200-1800	120×240	100
202-3L	3000	250-2500	135×280	250



401 01 Erlenmeyer Flasks



402 01 Erlenmeyer Flasks with ground in glass stopper

401 01 Erlenmeyer Flasks

Cat.No	Capacity ml	Neck. O.D mm	Flask. O.D mm	Height mm
401-01-50	50	26	54	80
401-01-100	100	32	66	106
401-01-150	150	32	75	124
401-01-200	200	34	79	132
401-01-250	250	34	85	140
401-01-300	300	34	90	162
401-01-500	500	38	103	184
401-01-1L	1000	45	131	214
401-01-2L	2000	50	166	280
401-01-3L	3000	50	187	310
401-01-5L	5000	50	220	365

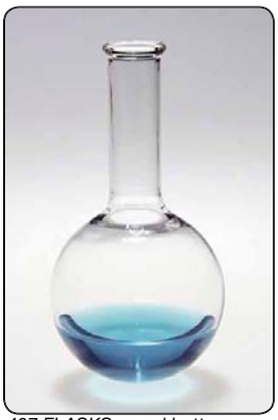
402 01 Erlenmeyer Flasks in glass stopper

Cat.No	Capacity ml	JointStandard Taper	Diam of body mm	Height mm
402-01-50	50	14.5/23	51	85
402-01-100	50	18.8/26	51	85
402-01-150	100	14.5/26	64	105
402-01-200	100	18.8/26	64	105
402-01-250	250	18.8/26	85	140
402-02-250	250	29.2/32	85	140
402-03-250	250	40/45	85	140
402-01-500	500	29.2/32	105	175
402-02-500	500	40/45	105	175
402-01-1L	1000	40/45	131	220
402-01-2L	2000	40/45	166	280
402-01-3L	3000	40/45	187	310
402-01-5L	5000	40/45	220	385

417 03 FLASKS two neck

417 04 FLASKS three neck


404 FLASKS flat bottom


407 FLASKS,round bottom

417 03 Flasks two neck

Cat.No	Capacity ml	Centre socket Size	Side Socket size(mm)	Height mm
417 03-25	25	14/23	14/23	98
417 03-50	50	14/23	14/23	114
417 03-100	100	14/23	14/23	140

417 04 Flasks three neck

Cat.No	Capacity ml	Socket size(mm)	Height mm
417 04-25	25	98	14/23
417 04-50	50	114	14/23
417 04-100	100	140	14/23

404 Flasks flat bottom, long neck

Cat.No	Capacity ml	Diam of neck(mm)	Diam of body mm	Height mm
404-50	50	22	50	105
404-100	100	22	64	115
404-250	250	34	85	145
404-500	500	34	105	175
404-1L	1000	42	131	210
404-2L	2000	50	166	260
404-3L	3000	50	195	305
404-4L	4000	50	207	315
404-5L	5000	56	230	345
404-6L	6000	65	236	355
404-10L	10000	70	279	420

407 Flasks,round bottom,long neck

Cat.No	Capacity ml	Diam of neck(mm)	Diam of body mm	Height mm
407-50	50	22	50	100
407-100	100	22	64	110
407-250	250	34	85	140
407-500	500	34	105	170
407-1L	1000	42	131	200
407-2L	2000	50	166	250
407-3L	3000	50	195	295
407-4L	4000	50	207	300
407-5L	5000	56	230	320
407-6L	6000	65	236	340
407-10L	10000	65	279	400


529 FLASKS distilling


620 01 VOLUMETRIC FLASKS

Cat.No	Capacity ml	Neck. O.D. mm	Flask. O.D. mm	Height mm	Side arm(mm)	
					O.D	Length
529-50	50	22	53	135	7	80
529-100	100	22	66	174	7	100
529-250	250	24	86	216	8	125
529-500	500	30	109	275	8	150
529-1L	1000	35	135	320	9	180
529-2L	2000	42	168	408	10	225
529-3L	3000	48	192	450	11	250
529-5L	5000	57	230	530	12	290

Cat.No	Capacity ml	Accuracy limits ±ml	Stopper Size	O.D×Height mm
620 01-25	25	0.03	10/13	37×110
620 01-50	50	0.05	10/13	49×140
620 01-100	100	0.10	12.5/14	60×170
620 01-200	200	0.15	14.5/15	75×210
620 01-250	250	0.15	14.5/15	80×220
620 01-500	500	0.25	18.8/17	100×265
620 01-1L	1000	0.40	18.8/17	127×315
620 01-2L	2000	0.60	24/20	160×375
620 01-5L	5000	1.20	34.5/35	221×470

306 Tall form; 307 low from weighing

306 307 Weighing bottle tall form and low form

Cat.No	Mouth dia.× Height mm	Cat.No	Mouth dia.× Height mm
306 01-25	25×25	307 01-30	30×20
306 02-25	25×30	307 02-30	30×25
306 03-25	25×40	307 01-35	35×25
306 04-25	25×50	307 02-35	35×70
306 05-25	25×60	307 01-40	40×20
306 01-30	30×30	307 02-40	40×25
306 02-30	30×40	307 03-40	40×30
306 03-30	30×50	307 04-40	40×70
306 04-30	30×60	307 01-45	45×25
306 05-30	30×70	307 02-45	45×30
306 01-40	40×50	307 01-50	50×30
306 01-45	45×30	307 01-60	60×30
306 02-45	45×70	307 02-60	60×40
		307 03-60	60×35
		307 01-70	70×30
		307 02-70	70×35
		307 03-70	70×40

628 02 Pipettes volumetric one-mark

Cat.No	Capacity ml	Accuracy limits ±ml	Height mm
628 02-1	1	0.015	330
628 02-2	2	0.02	340
628 02-5	5	0.03	400
628 02-10	10	0.04	450
628 02-20	20	0.06	560
628 02-25	25	0.06	570
628 02-50	50	0.10	600
628 02-100	100	0.16	640

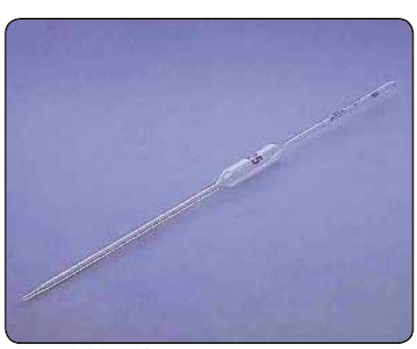
305 03 Reagent bottles

305 03 Reagent bottles

Cat.No	Capacity ml	Max. O.D. mm	Height mm	Neck stocket size
305 03-50	50	44	77	14/15
305 03-100	100	54	95	14/15
305 03-250	250	73	129	19/26
305 03-500	500	89	162	24/32
305 03-1L	1000	111	200	29/32
305 03-2L	2000	138	246	29/32
305 03-5L	5000	186	318	45/40
305 03-10L	10000	234	389	60/46

617 01 Measuring cylinders

Cat.No	Capacity ml	Accuracy limits ±ml	O.D mm	Height mm
617 01-10	10	0.2	16	137
617 01-25	25	0.5	21	162
617 01-50	50	0.5	26	197
617 01-100	100	1.0	30	257
617 01-250	250	2.0	42	310
617 01-500	500	5.0	54	360
617 01-1L	1000	10.0	70	440
617 01-2L	2000	20.0	90	515



628 02 PIPETTES volumetric one-mark


618 Measure cone shape conical

618 Measure cone shape conical

Cat.No	Capacity ml	Accuracy limits ±ml	Graduation divisions ml	Heigt mm
618-5	5	0.2	1.0	85
618-10	10	0.4	1.0	100
618-20	20	0.5	2.0	115
618-50	50	1.0	5.0	140
618-100	100	1.5	10.0	170
618-250	250	3.0	25.0	200
618-500	500	6.0	25.0	250
618-1L	1000	10.0	50.0	315


009 02 SEPARATING FUNNELS

009 02 Separating Funnels

Cat.No	Top. O.D mm	Stem mm		Standard hollow key norminal size	Socket Size
		Length	O.D		
009 02-50	50	60	9	3NS	19/26
009 02-100	100	60	9	3NS	19/26
009 02-250	250	60	9	4NS	29/32
009 02-500	500	60	10	4NS	29/32
009 02-1L	1000	60	10	6NS	29/32
009 02-2L	2000	60	10	6NS	29/32


801 FUNNELS with short stem


803 FUNNELS with long stem

801 Funnels with short stem

Cat.No	Top.O.D mm	Stem mm	
		Length	O.D
801-45	45	45	7
801-50	54	50	7
801-60	64	60	8
801-70	74	70	8
801-80	84	80	10
801-90	94	90	10
801-100	100	100	10

803 Funnels with long stem

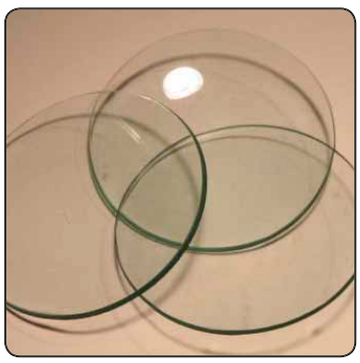
Cat.No	Top.O.D mm	Stem mm	
		Length	O.D
803-55	55	150	6
803-70	70	150	6
803-80	80	150	6


005 01 FUNNELS Cylindrical

005 01 Funnels Cylindrical

Cat.No	Top. O.D mm	Stem mm		Standard hollow key norminal size	Socket Size
		Length	O.D		
005 01-50	50	150	9	3NS	19/26
005 01-100	100	150	9	3NS	19/26
005 01-250	250	150	10	4NS	29/32
005 01-500	500	150	10	4NS	29/32
005 01-1L	1000	150	10	6NS	29/32

Watch glass dishes



208 01 WATCH GLASS DISHES

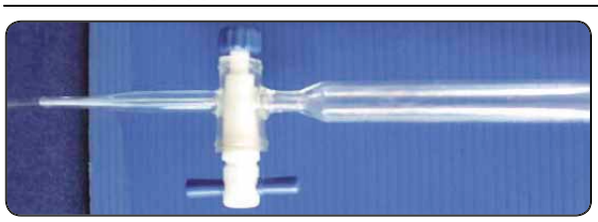
Cat. NO.	O.D. mm
208 01-40	40
208 01-50	50
208 01-60	60
208 01-80	80
208 01-100	100
208 01-125	125
208 01-150	150
208 01-200	200
208 01-250	250

Petri dishes

304 PETRI DISHES

Cat. NO.	Nominal size O.D×Height mm	Cover O.D mm	Base O.D mm
304-60	60×17	62	60
304-75	75×17	77	75
304-90	90×20	93	90
304-100	100×22	103	100
304-150	150×32	154	150
304-200	200×32	204	200

604 02 Burettes



Cate. No	Capacity (ml)	Accuracy limits ±ml		Graduation Divisions(ml)
		Grade A	Grade B	
		Accuracy limits		
604 02-5	5	0.01	0.02	0.02
604 02-10	10	0.025	0.05	0.05
604 02-25	25	0.05	0.10	0.10
604 02-50	50	0.05	0.10	0.10
604 02-100	100	0.10	0.20	0.20

401 01 DESICCATORS; 401 02 VACUUM DESICCATORS

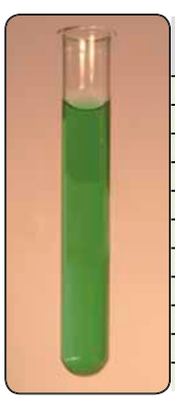
401 01 Desiccators

Cat. NO.	Size mm	Max. I.D mm	Porcelain plain diameter mm	Overall height mm
401 01-120	120	120	108	180
401 01-160	160	160	148	230
401 01-210	210	210	188	300
401 01-240	240	240	220	340
401 01-300	300	300	280	420
401 01-350	350	350	330	500

401 02 Vacuum Desiccators

Cat. NO.	Size mm	Max. I.D mm	Porcelain plain diameter mm	Overall height mm
401 02-120	120	29/32	108	227
401 02-160	160	34/35	148	285
401 02-180	180	34/35	160	305
401 02-210	210	40/38	188	347
401 02-240	240	50/42	220	381
401 02-300	300	60/46	280	467
401 02-350	350	71/51	330	544

601 03 Test Tubes



601 03 TEST TUBES

Cat.No	Straight rim Cat.No.	O.D. mm	Length mm	Wall mm
601 03-01	601 04-01	10	100	1.0±0.1
601 03-02	601 04-02	10	100	1.0±0.1
601 03-03	601 04-03	12	75	1.0±0.1
601 03-04	601 04-04	12	100	1.0±0.1
601 03-05	601 04-05	13	100	1.0±0.1
601 03-06	601 04-06	16	125	1.3±0.1
601 03-07	601 04-07	16	150	1.3±0.1
601 03-08	601 04-08	18	150	1.3±0.1
601 03-09	601 04-09	20	150	1.3±0.1
601 03-10	601 04-10	20	180	1.3±0.1
601 03-11	601 04-11	20	200	1.3±0.1

HB-3000B Brinell Hardness Tester

1.Application:

HB-3000B Brinell Hardness Tester used electronic directional control switch. Can be used to determine un-quenched steel.,Cast iron.,Non-ferrous metal and the soft texture of bearing metal materials ' brinell hardness value.

2.Features:

2.1.High precision reading microscope measurement system.
2.2.Mechanical structure patent design, low noise with extremely low failure rate.
2.3.Electronic reversing switch.
2.4.Accuracy accord with GB/T231.2, ISO6506-2 and the United States ASTM E10 standard.

3.Technical Parameter:

Model	HB-3000B
Testing Range	8-650HBW
Testing Force	1838.8, 2415.8, 7355.3, 9807, 29421N (187.5, 250, 750, 1000, 3000 kgf)
Max Testing Height	230mm
Distance Between Pressing Head Center And The Wall	120mm
Power Supply	220V/50Hz
Size	466 x 238 x 630mm
Weight	210 KG

4.Standard Accessories:

Descriptions	Quantity
Large testing platform	1 pc.
Small testing platform	1 pc.
V-notch testing platform	1 pc.
Tungsten carbide steel ball indenter	1 pc. Φ2.5, 1 pc. Φ5, 1 pc. Φ10
Rockwell standardized block	2 pcs.
20 times readings microscope	1 pc.
Instruction manual	1 share
Packing list	1 share

HBS-3000 Digital Display Brinell Hardness Tester

1.Application:

HBS-3000 Digital Display Brinell Hardness Tester is a recently developed new generation Brinell tester that is domestically advanced.
It can be applied to determine the Brinell hardness for ferrous metal and non-ferrous metal.
The tester adopts electronic auto loading, computer software programming, high power optical measurement, photosensor and other systems.
Eash operational process and test manufacturing enterprises, colleges and scientific institutions.

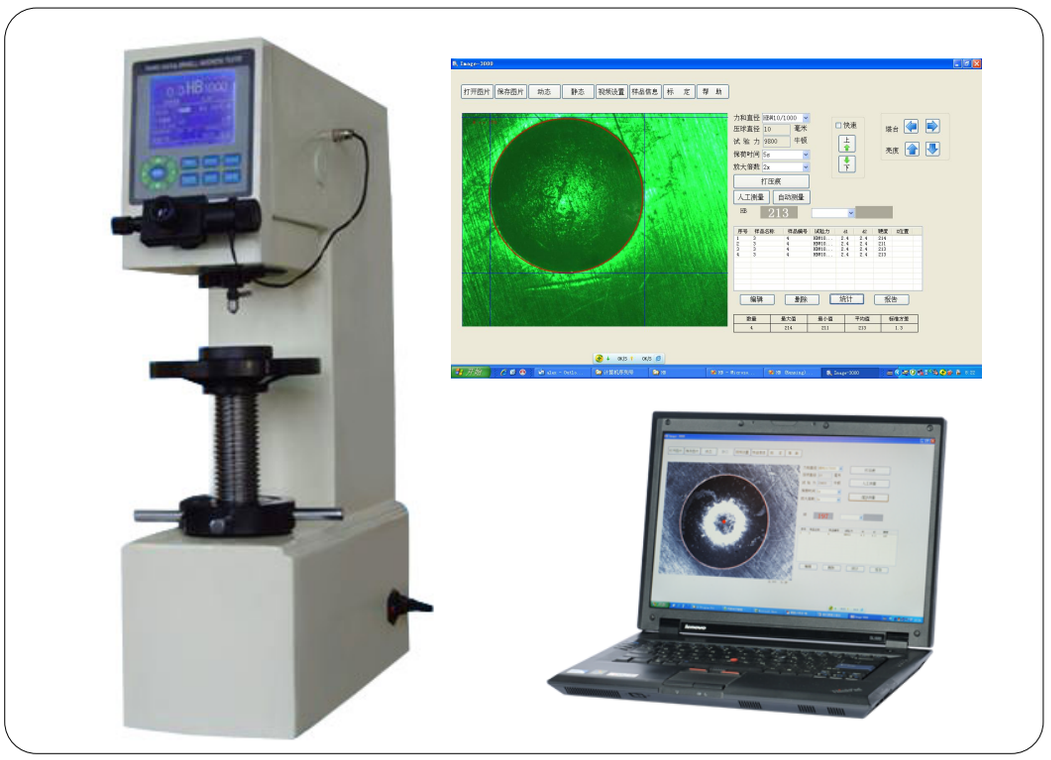
2.Main Technical Specifications:

Model	HBS-3000
Type	Digital Brinell
Test Range	8~650 HBW (hardmetals steel ball)
Brinell Hardness Test (N)	612.5, 980, 1225, 1837.5, 2450, 4900, 7350, 9800, 14700, 29400
Load Control	Automatic
Magnification Of Microscope	20X for reading microscope
Max. Height Of Specimens	220mm
Max. Depth Of Specimens	135mm
Power	AC 220V, 50Hz
Dimension (D*W*H)	550 * 236 * 753mm
Net Weight	130 KG

3.Packing List:

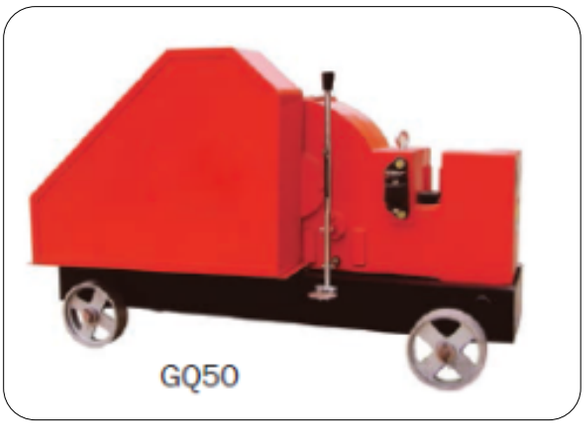
Name	Qty	Name	Qty
Objectives 20X	1	Diameter 2.5, 5, 10mm Hard Alloy Steel Ball Indenter	Each 1
Standard Blocks	3	Large, Medium, “V” shaped Testing Table	Each 1
Power Cable	1	232 Cable	1
Manual	1	Product certificate, Printer Manual	Each 1

Brinell hardness auto-measurement system



1. The measurement system can be integrated with the variable Brinell hardness testers
2. Suitable to a variety of loads on the Brinell hardness tester
3. Camera: 1.3 megapixel, Image clear
4. Manual / automatic measurement of the indentation size
5. Calibration by micrometer or indentation size of standard hardness block
6. The hardness converted to other hardness according to the ASTM
7. The hardness value of statistics and generation the alarm when the hardness value is unmoral
8. Can be used with laptop or desktop computers
9. Simple interface, simple operation, easy to install and use, no need training
10. The test report can be customized and automatically generated, including sample information, the hardness data, statistics, indentation picture
11. The test data kept permanently, easy to historical inquiry.

Rod cutting and bending machine



Model		GQ40	GQ42	GQ50
Cutting Ability	Round Steel Bar	<040mm	<042mm	<050mm
	Deformed Steel Bar	<032mm	<032mm	<042mm
Cutting Speed		32times/min	32times/min	28times/min
Electric Motor Power		2.2kw	3kw	4kw
Power Supply		3-Phase,380V,50Hz	3-Phase,380V,50Hz	3-Phase,380V,50Hz
Total Weight		350kgs	440kgs	560kgs
Overall Dimension(L*W*H)		1190x450x680mm	1290x460x890mm	1280x480x720mm

Model		GW40	GW42	GW50
Cutting Ability	Round Steel Bar	<040mm	<042mm	<050mm
	Deformed Steel Bar	<032mm	<032mm	<042mm
Cutting Speed		8-10r/min	10-20r/min	3-15r/min
Electric Motor Power		3kw	3kw	4kw
Power Supply		3-Phase,380V,50Hz	3-Phase,380V,50Hz	3-Phase,380V,50Hz
Total Weight		230kgs	320kgs	380kgs
Overall Dimension(L*W*H)		760x760x710mm	860x800x860mm	1060x850x730mm

Address:No. 1049, building 7,Xin Zhu Road No.1111,
Minhang District,Shanghai City, China

Tel:021-37023309