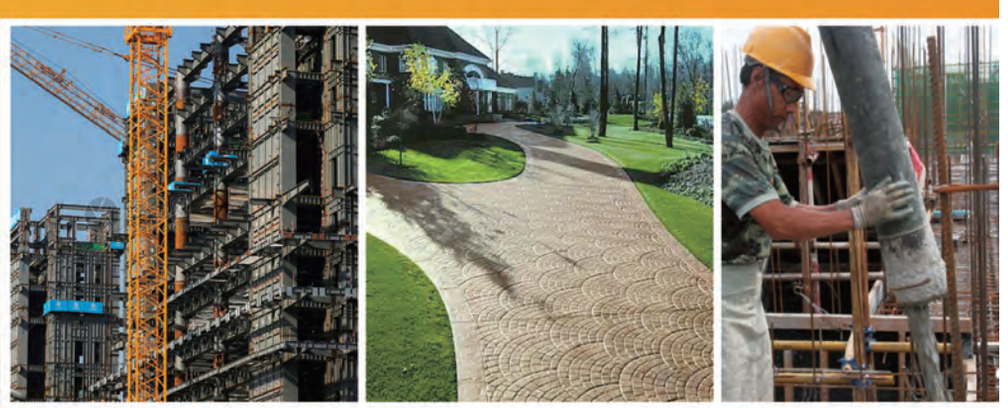
TINENG



Testing Equipment

for the Construction Industry

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CONCRETE TESTING

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SAMPLING OF FRESH CONCRETE

SC series scoop

Material: Stainless steel, Aluminium

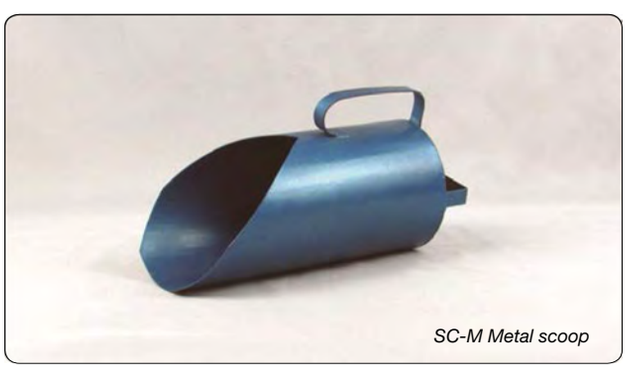
The correct sampling and mixing of fresh concrete is important if test results are to be reliable. Most of the equipment necessary for efficient sampling and mixing is standard laboratory equipment detailed in the Laboratory Equipment Section of this catalogue.

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-M Metal scoop

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



SLUMP TEST

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.

We propose two different models: the standard one particularly suitable for laboratory testing and the portable model very practical for site testing shown as below.

Each component of the kits can be ordered separately. The user can personalize the kit composition for the Slump Cone test.

Portable slump cone test set Complete with metal base plate SM-BP/C and TR-S600 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.

Spare parts

- SM series slump cone
- SM-BP/C Metal base palte with clamps and measuring bridge
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia. 16*600mm

SLUMP TEST(CONTINUED)

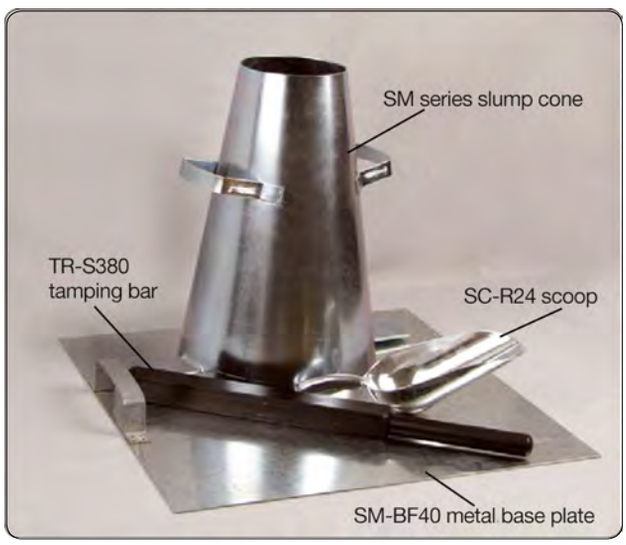
SM series slump cone(also known as Abrams cone)

These slump cones determine the slump of concrete in the laboratory or field.

Model SM-ES 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-ES	100x200x300	2.0	Seamless spun steel
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

Accessories

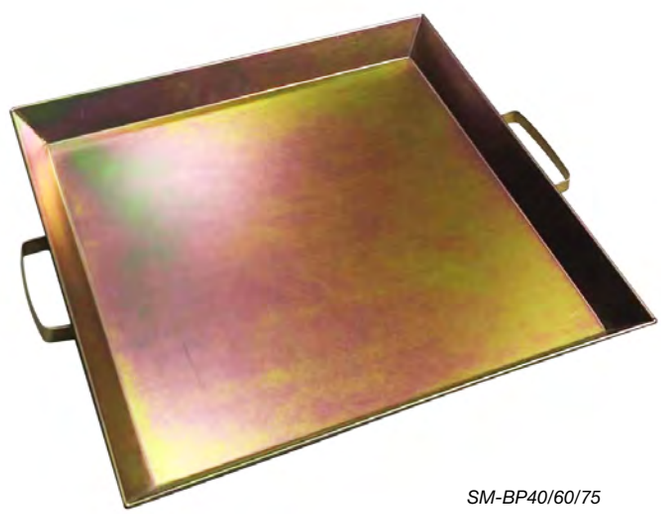
- SM series Slump cone
- SM-R3 Steel rule 300 mm long
  SM-R5 steel rule 500 mm long (user selectable)
- SM-BF40 Metal base plate 400x400x1.5 mm galvanized, with one handle.
- SC-R24 Scoop
- TR-S600 Steel tamping rod, dia.16x600 mm
  TR-S380 Metal tamping bar,25x380 mm long (optional)

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.

Slump Base Plate

Slump Base Plate is an accessory of the slump measurement test set. It can be ordered separately.

STANDARD: ASTM C143, ASTM C143M, AASHTO T119, BS 1881



SM-BP40/60/75

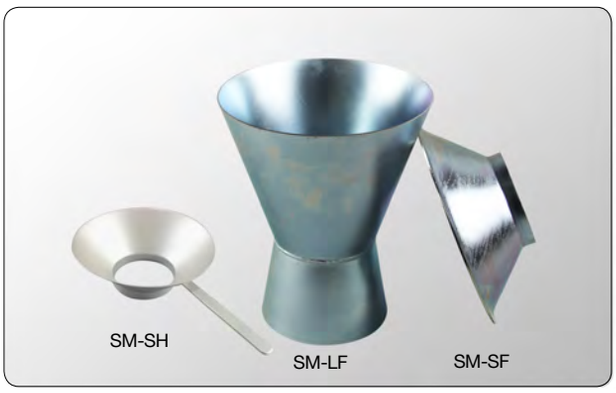
Model No	Dimension (mm)	Remark
SM-BP40	400x400x40 deep	Galvanized, with two handels
SM-BP60	600x400x4 thickness	Galvanized, with two handles
SM-BP75	750x750x2 thickness	Galvanized, with two handles
SM-BF40	400x400x1.5 thickness	Galvanized, with one handle.
SM-BF60	600x400x1.5 thickness	Galvanized, with one handles
SM-BP/C	355x355x2 deep 400mm Height handle	Galvanized, with clamps and measuring bridge

ACCESSORIES

Stainless steel made Base Plate

Model No	Dimension (mm)	Thickness(mm)
WL623-208T	353x325x200 deep	0.8
WL623-158T	353x325x150 deep	0.8
WL623-108T	353x325x100 deep	0.8
WL623-68T	353x325x65 deep	0.8
WL623-48T	353x325x40 deep	0.8

SLUMP FUNNEL



SCC TESTING APPARATUS

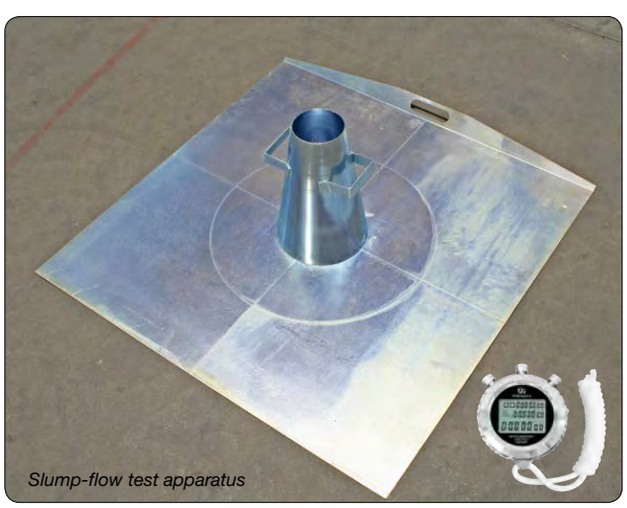
STANDARD: EN12350

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-BP90 Plate

Made of steel, 900 x 900 mm with engraved 210 and 500 mm dia. circles
Weight approx: 19kg


Slump-flow test apparatus

Accessories *This need to be ordered separately.*

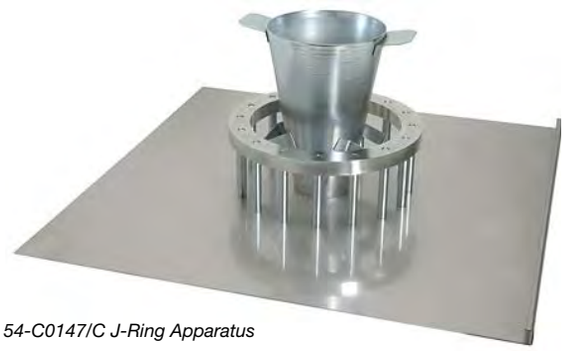
- Stop watch – precise to ~0.05 seconds

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.The slump cone should be ordered separately.
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: ASTM 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.

34-0300/01 Vebé consistometer

Model 34-0300/01	
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

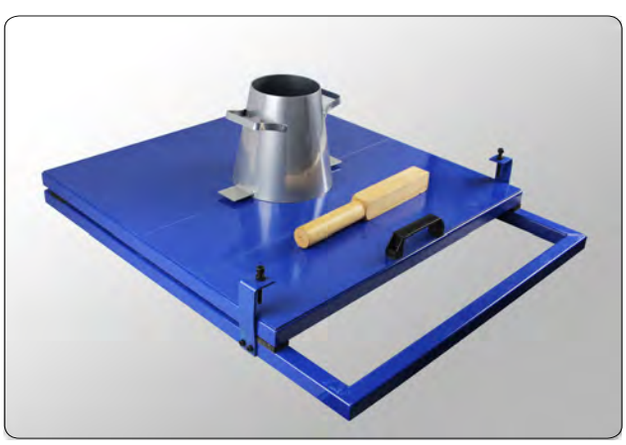
General description and specifications

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

Portable Drum concrete mixer

Portable concrete mixer with Electric/diesel engine is widely used in building site, road and bridge project, and many other construction sites. It is of bigger capacity, self-falling type. It is suitable for mixing plastic and low-slump concrete.

Model VEM-30	
Power:	650W
Drum size:	630x390x630mm
Drum:	630mm
Drum thickness:	1.1mm/1.6mm
Tipping type(hand wheel or pedal):	10°
Weight:	66kg
Volume:	160L

Model VEM-30 Drum Concrete Mixer

Model SJD-60 Drum Concrete Mixer

Model SJD-SERIES	
Capacity:	120L /160L /200L
Mixing power:	1.5kw
Motor speed:	1380 rpm
Voltage:	220-240V / 50HZ
Working cycle period:	3-5 min
Mixing amount:	120L /160L /200L

CONCRETE CORE DRILL

CD-E Core drilling machine. Electric motor.

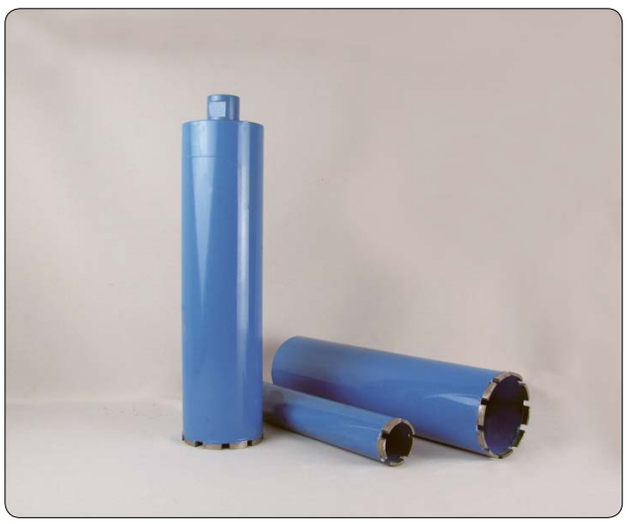
Main features:

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.

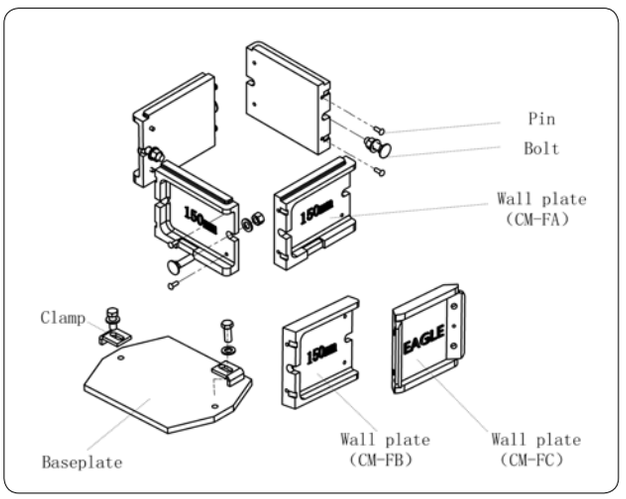
ITEM NO	Diameter	Working Length	Seg. Nr.	Segment size	Thread
DB042	42mm	400mm	5	15x3.5x8mm	1-1/4UNC
DB051	51mm	400mm	5	24x3.5x8mm	1-1/4UNC
DB056	56mm	400mm	5	24x3.5x8mm	1-1/4UNC
DB063	63mm	400mm	6	24x3.5x8mm	1-1/4UNC
DB066	66mm	400mm	6	24x3.5x8mm	1-1/4UNC
DB076	76mm	400mm	7	24x3.5x8mm	1-1/4UNC
DB083	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

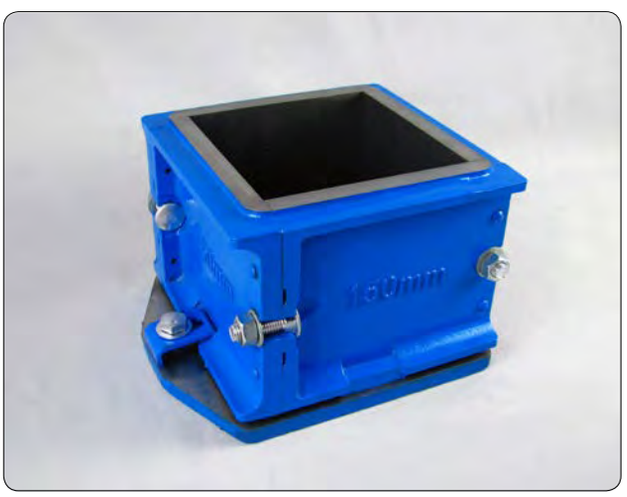
STANDARD: EN 12390-1, BS1881

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 electronic digital display depth caliper

Verification of dimension using digital vernier caliper

Specimen clamping tool

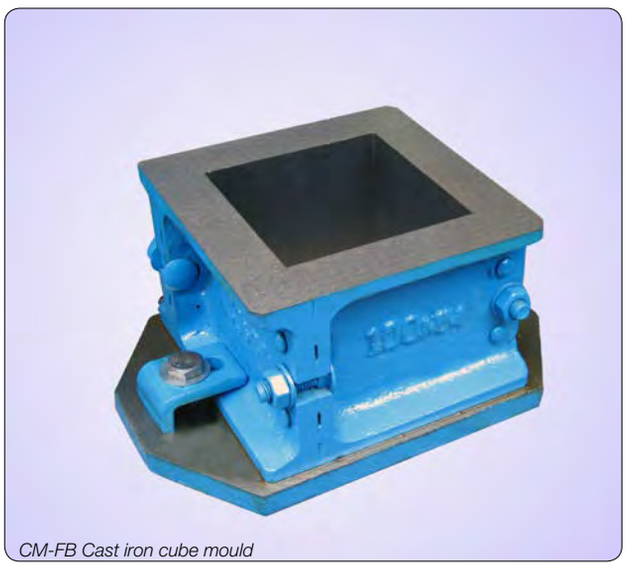
For transporting of specimen cubes and cylinders

ST-J150
Tryout size : 150x150 mm
Weight:0.85kg

ST-L150
Tryout size : 150x300 mm
Weight:1.67kg

CUBE MOULD (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 MOULD (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.

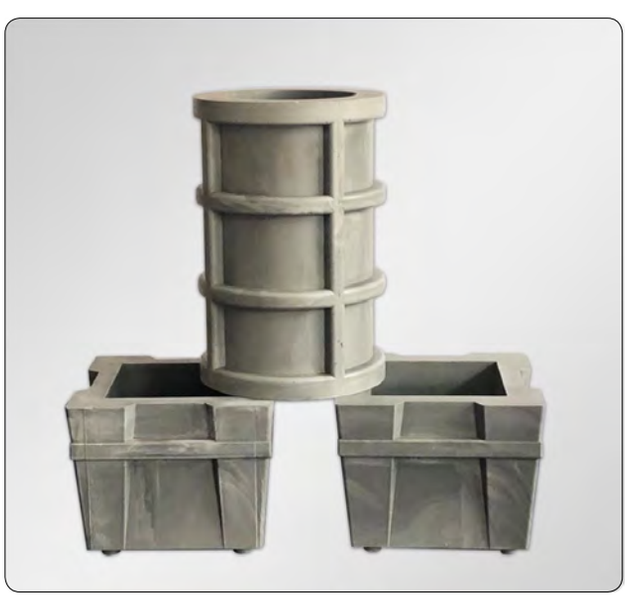
Model No	Dimension(mm) Dia.×Height	Weight(kg)
CY-PP150	150×300	1.0

AG150 air gun and CY-PP150 plastic cylinder mould

Polyurethane cube and cylinder mould

A one piece mould manufactured from a robust plastic which is resistant to shock and abrasion. Ideal for field use,the specimen is ejected from the mould by compressed air requiring only a simple clean and oiling before being ready for use again. They all meet the requirements of EN 12390-1.

Model No	Dimension(mm) Dia.×Height	Weight (kg)
CM-PU150	150×300	1.9
CM-CU150	150×150×150	1.6



CM-PU150/CM-CU150 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.

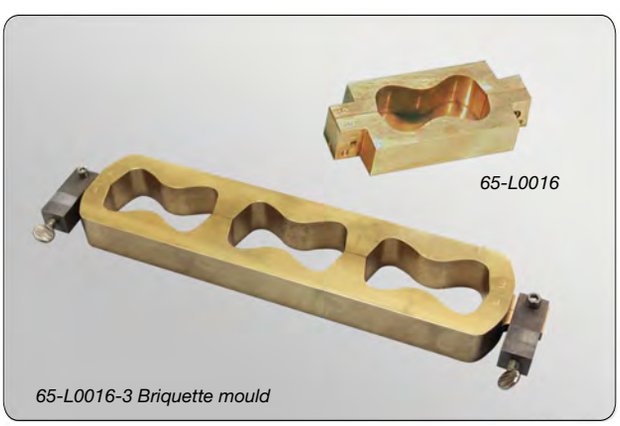
CM-GS Steel three gang mould

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

STANDARD: ASTM C307

For casting of cement briquettes for tensile strength tests. It is a two part split mould made of brass. Two thumb screws facilitate easy and quick assembling and dismantling of the mould. The minimum cross section of the briquettes cast is 25.4 mm x 25.4 mm.



65-L0016-3 Briquette mould

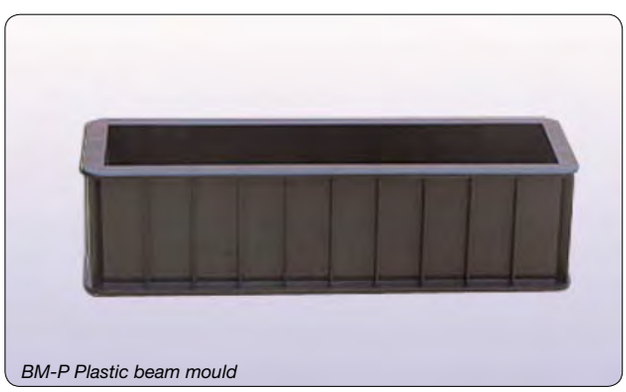
CM-G series three gang moulds

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	150×150×550	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)	Weight
BM-S13	100×100×300	10Kg
BM-S14	100×100×400	13Kg
BM-S15	100×100×500	15Kg
BM-S55	150×150×500	25Kg
BM-S56	150×150×600	34Kg
BM-S75	150×150×750	44Kg

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

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/B Heavy Duty Plastic Concrete specimen curing tank

Model 55-C0193/B Heavy duty plastic curing tank is designed for curing concrete cubes and cylinders.
Temperature range: from ambient to +40°C
Wattage: 3000 W
Capacity: 594 litres
Overall dimensions: 1100 x 900 x 600mm (LxWxH).
Weight approx.: 50 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:	47.5-215mm
Grinding head rotate speed:	3400r/min
Grinding head diameter:	120mm
Motor power:	2.0kw
Dimension:	500 X 400 X 700mm
Weight:	50kg

TPMP-300 Specimen grinding machine

TPCD-100 Specimen capping machine

SPECIMEN CUTTING MACHINE

STANDARD: EN 12390-2

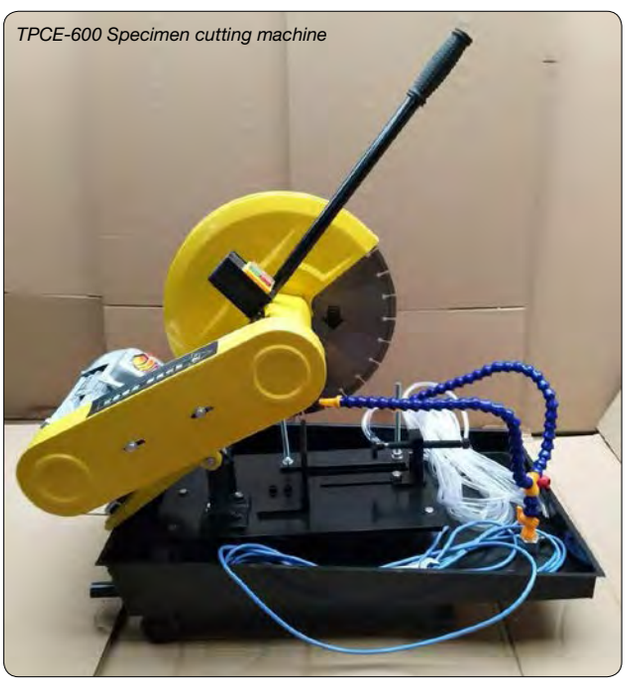
The cutting machine is suitable for various specimen with different sizes in lab of asphalt, Concrete, and stone material.

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:	2800r/min
Rated power:	3 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-100

Max concrete cylinder diameter:	100mm
Movement :	manual
Package dimension:	42 X 48 X 40CM
Gross weight:	25kg

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 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 40x40x160mm, 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.

Model	BC156-300	BC156-300D	BC-160
Vaild testing space	156-305mm	156-305mm	0-158mm
Range of dial indicator	0-10mm	0-12.7mm	0-10mm
Resolution	0.01mm	0.001mm	0.001mm

BC156-300 Length comparator

Digital indicator

BC160 Length comparator

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.

Specification:

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

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.

55-C0159 Vibrating table with clomping device

VT-M68/VT-M101 Magnetic vibrating table

Model 55-C0159

Table size:	600 × 800 mm
Amplitude:	0.3-0.6 mm
Vibrating frequency:	3000 vibrations/min
Power:	220 V, 0.3 kW
Weight:	50KG

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

Concrete vibrator

Concrete vibrator is used to consolidate cement and remove all the trapped air bubbles to give you the toughest cement possible, widely used in a variety of building purposes and concrete foundation work such as road, bridge and tunnel. It is an indispensable tool in concrete spot in distant area without electricity or when there is black out.

It can be adapted to every type of application, vibrator heads and shafts can be easily combined and rapidly exchanged to match the right equipment to the job.

Model BCV-35	gasoline concrete vibrator
Gasoline:	HONDA GX35
Max:	1.6HP/7000RPM, 1.2KW
vibrator:	dia. 38mm (50mm optional) ,length 2.5m
Vibrating frequency:	0.85~1.15mm
Vibrating range:	200~220HZ
Weight:	16kg

Handheld concrete vibrator

Model	HCV-900	HCV-1300
Power	220 V/ 900 W	220 V/ 1300 W
Vibrator dia.	35mm(25mm optional)	35mm(50mm optional)
vibrator length	1.5m (2m 0ptional)	2m (3m 0ptional)
Weight	8kg	10kg

COMPRESSION TESTING MACHINE

SYE-1000

SYE-2000BS

SYE Series hydraulic compression testing machine is used for the compression test of concrete and other construction materials, manual load, digital display the value of pressure and ratio of loading. It can save and print the test result directly by the controller. It also can be eqquipped with computer to show the load curve and process the date.

C1: Top bar
C2: Compression plate
C3: Standard column
C4: Flexture jig
C5: Hardware components
C6: Digital display unit
C7: Oil return valve
C8: Oil filling valve

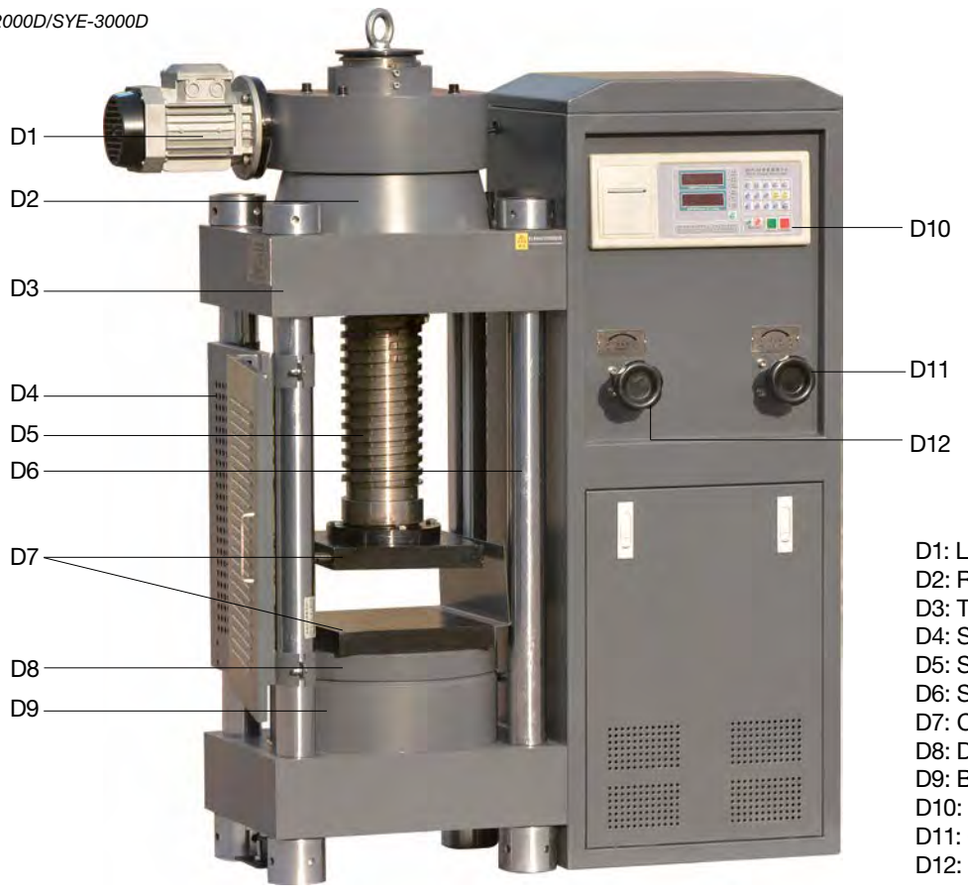
SYE-300

Code	SYE-300	SYE-1000	SYE-2000BS
Features:	Manual load	Four standard column	Manual load, Protect cover
Accuracy class	Class one		
Max load capacity:	300kN	1000kN	2000kN
Compression space:	210mm	280mm	360mm
Piston stroke(mm):	80	150	120
Size of upper compression plates(mm):	Dia. 170	Dia. 230	dia. 300
Size of lower compression plates(mm):	Dia. 170	Dia. 230	dia. 300
Dimension (load frame mm):	850×400×1350	880×420×1350	900×400×1250
Power:	380V(220V optional), 50Hz(60Hz optional), 0.75kW	380V(220V optional), 50Hz(60Hz optional), 1.0kW	380V(220V optional), 50Hz(60Hz optional), 1.3kW
Weight(kg):	400	600	900

COMPRESSION TESTING MACHINE

SYE-2000D and SYE-3000D hydraulic compression testing machine is used for the compression test of concrete and other construction materials, manual load, adopt electric -screws to adjust the compression space, digital display the value of pressure and ratio of loading. It can save and print the test result directly by the controller. It also can be eqquipped with computer to show the load curve and process the date.

SYE-2000D/SYE-3000D



D1: Lifting Motor
D2: Reduction case assembly
D3: Top bar
D4: Safety protective cover
D5: Screw rod
D6: Standard column
D7: Compression plate
D8: Dustproof cover
D9: Base of hydro cylinder
D10: Digital display unit
D11: Oil return valve
D12: Oil filling valve

Code	SYE-2000D	SYE-3000D
Features:	Electric screw, Protect cover	Electric screw, Protect cover
Accuracy class	Class one	
Max load capacity:	2000kN	3000kN
Compression space:	320mm	340mm
Piston stroke(mm):	50	80
Size of upper compression plates(mm):	240×240	265×265
Size of lower compression plates(mm):	300×250	360×285
Dimension (load frame mm):	950×420×1350	1000×500×1500
Power:	380V, 50Hz, 1.3kW	380V, 50Hz, 1.3kW
Weight(kg):	950	1500

COMPRESSION TESTING MACHINE

HYE series electro-hydraulic servo compression testing machine

Features:

Electric-screw to adjust the compression space, electro-hydraulic servo technology, control automatically.
Used for testing the compressive and flexural strength of cement, concrete and other building materials. It can be carried out in accordance with the corresponding standard as setting loading rate. Load capacity, time and test curve are displayed dynamically, and control timely and maxmimum test force hold function.
Compressive strength, flexural strength and other mechanics test data can be calculated and printed by the control software automatically.
Suitable for testing 50mm, 100mm, 150mm and 200mm cube samples as well as cylinder samples with 75 -160mm diameter and 150-320mm height.
Pressure safety valve, piston limit switch, removable front and rear gates are standard in all models. Upper compression platens have ball seating assembly for movement in all models. All compression platens have a surface hardness of 50 HRC.

Code	HYE-2000	HYE-3000
Features:	Computer included, protect cover	Computer included, protect cover
Max load capacity:	2000kN	3000kN
Accuracy Class	Class One	
Compression space:	320mm	340mm
Piston stroke(mm):	50	80
Size of upper compression plates(mm):	240×240	265×265
Size of lower compression plates(mm):	300×250	360×285
Dimension (load frame mm):	700×430×1350	750×500×1500
Dimension (control console mm):	1100×550×900	
Power:	380V(220V optional), 50Hz(60Hz optional), 2.0kW	380V(220V optional), 50Hz(60Hz optional), 2.0kW
Weight(kg):	1090	1640

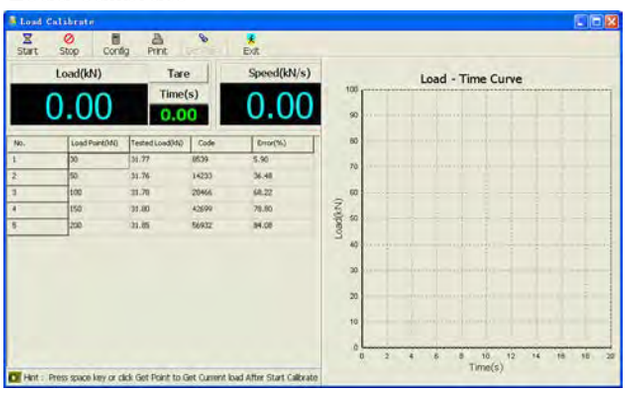
COMPRESSION TESTING MACHINE

Software

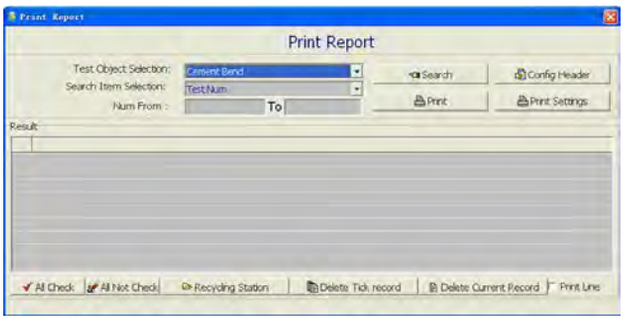
Name: SuperTest
Version Number: 7.2
The testing software has the characteristics of WINDOWS style, user-friendly interface, complete functions, stabilization and easy operation.
Functions of the software:

- Choose a test;
- Demarcate force value;
- Detect force value;
- Set holding load for force value;
- Set and print testing report;
- Real-time display load, intensity, rate, peak value, intensity rate and loading curve.

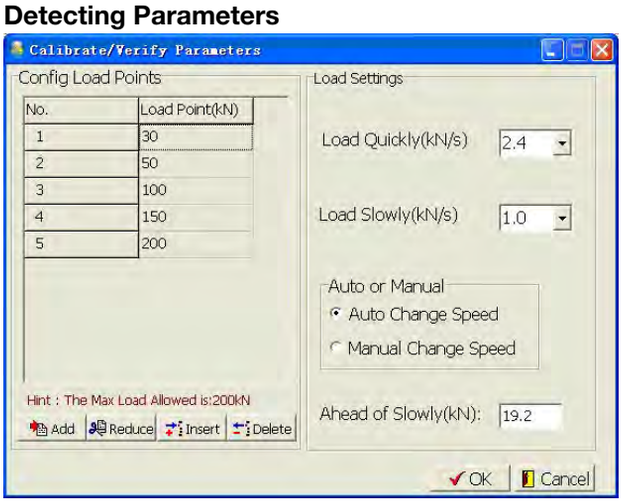
Load calibrate



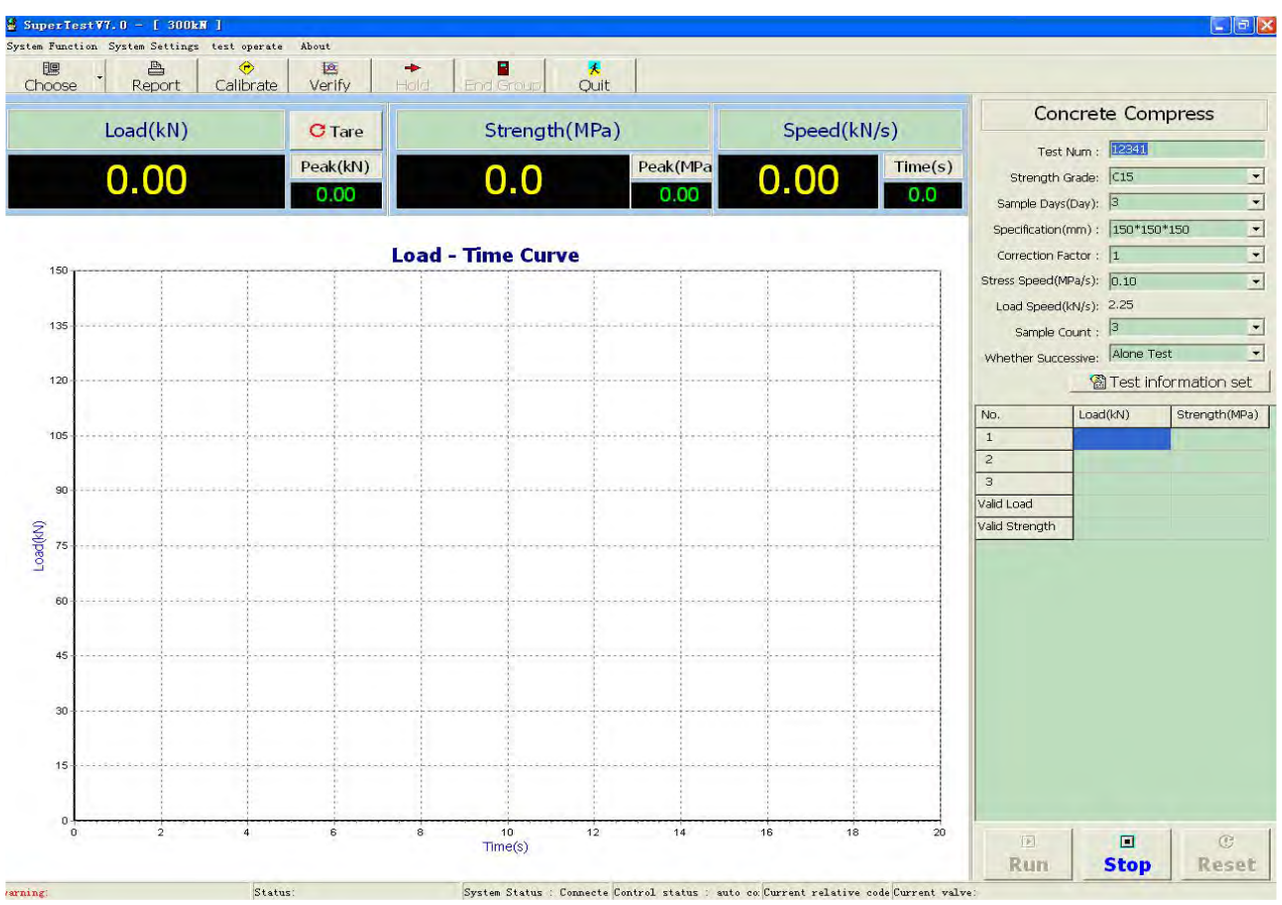
Print test report



Detecting Parameters



Interface Functions



Compression and flexural testing machines

CONCRETE TESTING

COMPRESSION TESTING MACHINE

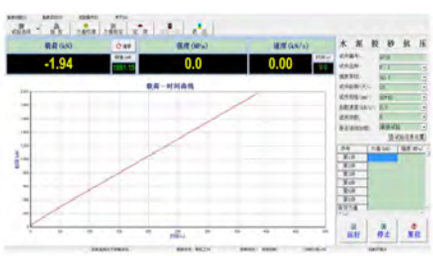
HYE series electro-hydraulic servo compression testing machine

STANDARD:GB/T2611、GB/T17671、GB/T16826、GB/T50081

HYE-2000BD micro-electro-mechanical hydraulic servo compression testing machine is a high-precision material testing equipment that adopts hydraulic power source drive, electro-hydraulic servo control technology, computer data acquisition and processing, and can realize closed-loop control and automatic detection. The source (hydraulic power source), measurement and control system, and test equipment are composed of four parts. The maximum test force is 2000kN, and the accuracy level of the test machine is better than level 1.

HYE-2000BD micro-electro-mechanical hydraulic servo compression testing machine can set the loading rate according to the corresponding national standard and meet the standard loading rate control index. The compressive test under the rated test force of cement, concrete and other materials, with load, time and test Curve dynamic display and timely control function and maximum test force retention function.

Separate structure of main engine and oil source; it is suitable for the compression test of cement and concrete, and is equipped with appropriate fixtures and measuring devices to meet the split tensile test and static pressure elastic modulus test of concrete. Electronic extensometer/compressometer should be ordered separately.



Industrial-grade tablet PC

It has the characteristics of anti-vibration,; antimoisture, high temperature resistance, etc.

control system

With force closed-loop control function;
Using a microcomputer to achieve electronic measurement and automatically complete the test;
Automatically calculate the results and print the report;
Ethernet communication method.

Code	HYE-2000BD	HYE-3000BD
Maximum test force:	2000kN	3000kN
Test machine level:	level 1	
Relative error of test force indication value:	within ± 1%	
Relative error of displacement rate control:	within ± 1%	
Test force measurement range:	1% -100% FS (the whole process is not divided)	
Host structure:	electric adjustment of double screws	
Compression space:	600mm	650mm
Piston stroke:	200mm	
Test force loading speed:	0.02% -2% FS / s	
Pressure plate size:	Φ300mm	
Effective distance between columns:	440mm	540mm
Host size:	840×640×1780 mm	960×740×2080 mm
Control cabinet dimensions:	700×540×1500mm	
Machine power:	2.7kW (AC380V)	3.0kW(AC380V)
Machine weight:	about 1700kg	about 3100kg

COMPRESSION TESTING MACHINE

HYE-2000BS Electro-hydraulic servo compression testing machine

Features:

Hydraulic loading, electro-hydraulic servo technology. Used for testing the compressive and flexural strength of cement, concrete and other building materials. It can be carried out in accordance with the corresponding standard as setting loading rate. Load capacity, time and test curve are displayed dynamically, and control timely and maxmimum test force hold function.

Compressive strength, flexural strength and other mechanics test data can be calculated and printed by the control software automatically.

Suitable for testing 50mm, 100mm, 150mm and 200mm cube samples as well as cylinder samples with 75 -160mm diameter and 150-320mm height.

Pressure safety valve, piston limit switch, removable front and rear gates are standard in all models. Upper compression platens have ball seating assembly for movement in all models. All compression platens have a surface hardness of 50 HRC.

Code	HYE-2000BS(Electro-hydraulic servo compression Testing machine)
Max load capacity:	2000kN
Accuracy class	Class One
Compression space:	360 mm
Piston stroke:	120 mm
Size of compression plates:	Dia. 300 mm
Dimension (load frame):	450×400×1250 mm
Dimension (control console):	1100×500×900 mm
Power(kW):	380V(220V optional), 50Hz(60Hz optional), 2.0kW
Weight(kg):	950 kg

COMPRESSION TESTING MACHINE

HYE-2000B/HYE-3000B electro-hydraulic servo compression testing machine

Features:

Hydraulic loading, electro-hydraulic servo technology. Used for testing the compressive and flexural strength of cement, concrete and other building materials. It can be carried out in accordance with the corresponding standard as setting loading rate. Load capacity, time and test curve are displayed dynamically, and control timely and maxmimum test force hold function.

Compressive strength, flexural strength and other mechanics test data can be calculated and printed by the control software automatically.

Suitable for testing 50mm, 100mm, 150mm and 200mm cube samples as well as cylinder samples with 75-160mm diameter and 150-320mm height.

Pressure safety valve, piston limit switch, removable front and rear gates are standard in all models. Upper compression platens have ball seating assembly for movement in all models. All compression platens have a surface hardness of 50 HRC.

Code	HYE-2000B	HYE-3000B
Max load capacity:	2000kN	3000kN
Accuracy class	Class one	Class One
Span of colum	400 mm	440 mm
Compression space:	360 mm	400 mm
Piston stroke:	200 mm	200 mm
Size of compression plates:	Dia. 300mm	Dia. 300 mm
Dimension (load frame):	640×560×1500mm	720×720×1800 mm
Power(kW):	380V(220V optional), 50Hz(60Hz optional), 2.0kW	380V(220V optional), 50Hz(60Hz optional), 2.0kW
Weight(kg):	1500 kg	2700 kg

Compression and flexural testing machines

COMPRESSION TESTING MACHINE

SYE-2000B/SYE-3000B

G1: Top bar
G2: Safety protective cover
G3: Compression plate
G4: Cushion block
G5: Standard column
G6: Oil cylinder
G7: Base
G8: Digital display unit
G9: Mini-printer
G10: Oil return valve
G11: Oil filling valve
G12: Hardware components

Features:

Hydraulic Manual loading.
Used for testing the compressive and flexural strength of cement, concrete and other building materials. It can be carried out in accordance with the corresponding standard as setting loading rate.
LCD screen display strength, loading speed value, can be configured computer display load curve and data acquisition processing, also can be directly printing and storage test result directly.
Suitable for testing 50mm, 100mm, 150mm and 200mm cube samples as well as cylinder samples with 75-160mm diameter and 150-320mm height.
Pressure safety valve, piston limit switch, removable front and rear gates are standard in all models. Upper compression platens have ball seating assembly for movement in all models. All compression platens have a surface hardness of 50 HRC.

Code	SYE-2000B	SYE-3000B
Max load capacity:	2000kN	3000kN
Accuracy class	Class one	Class One
Span of colum	400 mm	440 mm
Compression space:	360 mm	400 mm
Piston stroke:	200 mm	200 mm
Size of compression plates:	Dia. 300mm	Dia. 300 mm
Dimension (load frame):	650×560×1500mm	720×720×1800 mm
Power(kW):	380V(220V optional), 50Hz(60Hz optional),1.8 kW	380V(220V optional), 50Hz(60Hz optional),1.8 kW
Weight(kg):	1500 kg	2700 kg

UNIVERSAL TESTING MACHINE

WE series Universal testing machine

Universal Testing Machine have a wide range of applications. A number of materials, metals in different form and shapes can be tested for variety of tests like Tension, Compression, Transverse, Bend, Shear, Brine Hardness etc. Special attachments are also available for testing of Flat Belts, Chain Links, Wire Ropes etc.

Aviation aluminum color screen, digital display test force, deformation and load curve, automatic record test data, print the test results. It also can connect with computer to display and process the test date.

Code	WE-100B	WE-300B	WE-600B	WE-1000B
Max load capacity(kN):	100	300	600	1000
Structure type:	Underneath oil cylinder, Six stand column, double screw, Protect cover, Coil spring buffer device			
Accuracy class:	Class one(Class 0.5)			
Sensor type:	Load sensor		Pressure sensor	
Maximum speed of sentre sill (mm/min):	320			
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. 200	Dia. 225
Dimension (load frame mm):	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
Power:	380V(220V optional), 50Hz(60Hz optional), 1.1kW	380V(220V optional), 50Hz(60Hz optional), 1.8kW	380V(220V optional), 50Hz(60Hz ptional), 2.2kW	380V(220V optional), 50Hz(60Hz ptional), 2.2kW
Weight (load frame kg):	160	160	160	160
Weight (control console kg):	1400	1500	1800	2500

Compression and flexural testing machines

WEW series Universal testing machine

Code	WEW-100B	WEW-300B	WEW-600B	WEW-1000B
Max load capacity(kN):	100	300	600	1000
Structure type:	Underneath oil cylinder, Six stand column, double screw, Protect cover, Coil spring buffer device, Hydraulic automatic clamping			
Maximum speed of sentre sill(mm/min)	320			
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. 200	Dia. 225
Dimension (load frame mm):	800×620×1850	800×620×1870	800×620×1900	900×700×2250
Dimension (control console mm):	800×600×1600			
Power(kW):	380V(220V optional), 50Hz(60Hz optional), 2.2kW	380V(220V optional), 50Hz(60Hz optional), 2.2kW	380V(220V optional), 50Hz(60Hz optional), 2.2kW	380V(220V optional), 50Hz(60Hz optional), 2.2kW
Weight (load frame kg):	300	300	300	300
Weight (control console kg):	1450	1600	1900	2600

UNIVERSAL TESTING MACHINE(CONTINUED)

Universal Testing Machine have a wide range of applications. A number of materials, metals in different form and shapes can be tested for variety of tests like Tension, Compression, Transverse, Bend, Shear, Brine Hardness etc. Special attachments are also available for testing of Flat Belts, Chain Links, Wire Ropes etc.

WAW series universal testing machine

Software:

TestMaster3 is the latest testing and control software launched by our company and applicable to Electric-Type Universal Testing Machine, Electro Hydraulic Servo Universal Testing Machine and Hydraulic OSD Universal Testing Machine and other types extended from the above three. The software can be used for regular testing including drawing, compressing, curving, cutting and twisting all materials (metal, rubber, plastic, cement concrete, rock and compound materials, etc.).
It has high expansibility and can be expanded for special machine types, special materials and special testing.
Support test analysis, display feature points for single curve, support on-line modification and multiple curves comparison within groups.
Support single and group printing. Report templates can be separately setup.
The sensor can be calibrated / verified by two ways manually, semi-automatic or full-automatic way.

Features:

1. Dual-test space design, under-cylinder, four-column-double-screw frame structure, compact structure;
2. Hydraulic clamping, don't skip, and can be increased special fixture with the shoulder, thread, strand;
3. Durable chrome-plated column for easy cleaning and a long-lasting-life;
4. 12v Hand operation box makes the operation more convenient and flexible;
5. High-precision load cell directly measures force, strong resistance to lateral and impact;
6. By using high pressure internal gear pump, the noise is less than 60 db under full load;
7. The hydraulic system uses pressure servo technology, the system pressure always follow up with the working pressure, and thus more energy saving;
8. While computer-controlled, with manual operation so that customers have more choices to use;
9. With hardware and software overload protection;
10. Advanced and reliable PCI bus technology to improve the speed of data acquisition, control signal response and control accuracy.

UNIVERSAL TESTING MACHINE(CONTINUED)

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 deformation:	1%-100% F.S			
Deformation 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%			
Lifting speed of middle beam (mm/min)	320			
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. 200	Dia. 225
Dimension (load frame mm):	800×620×1850	800×620×1900	800×620×2000	900×700×2300
Dimension (control console mm):	800×600×1600			
Power:	380V(220V optional), 50Hz(60Hz optional), 2.2kW			
Weight (load frame kg):	300	300	300	300
Weight (control console kg):	1450	1600	1900	2600

UNIVERSAL TESTING MACHINE(CONTINUED)

Features:

1. Dual-test space design, under-cylinder, four-column-double-screw frame structure, compact structure;
2. Brand NACHI Gear pump, Hydraulic clamping, don't skip, and can be increased special fixture with the shoulder, thread, strand;
3. Durable chrome-plated column for easy cleaning and a long-lasting-life;
4. 12v Hand operation box makes the operation more convenient and flexible;
5. High-precision load cell directly measures force, strong resistance to lateral and impact;
6. By using high pressure internal gear pump, the noise is less than 60 db under full load;
7. The hydraulic system uses pressure servo technology, the system pressure always follow up with the working pressure, and thus more energy saving;
8. While computer-controlled, with manual operation so that customers have more choices use;
9. With hardware and software overload protection;
10. Advanced and reliable PCI bus technology to improve the speed of data acquisition, control signal response and control accuracy.

WAW-2000B universal testing machine

Compression and flexural testing machines

Code	WAWD-300B	WAWD-600B	WAWD-1000B	WAW-2000B
Max load capacity(kN):	300	600	1000	2000
Structure type:	Underneath oil cylinder, Four stand column, double screw, Protect cover, double space			
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%			
Lifting speed of middle beam (mm/min)	320			350
Compression space(mm):	600			650
Tensile space (mm):	700			800
Piston stroke (mm):	200			250
Diameter of round specimen (mm):	Dia. 10-32	Dia.13-40	Dia. 14-45	Dia. 20-70
Thickness of flat specimen (mm):	0-20		0-40	0-50
Maximum distance of bending test (mm):	300	300	300	-
Size of compression plates(mm):	Dia.150	Dia. 200	Dia. 225	240×240
Dimension (load frame mm):	800×620×2000	900×700×2300	1050×800×2500	1200×900×2850
Dimension (control console mm):	800×600×1600			
Power:	380V(220V optional), 50Hz(60Hz optional), 3.2kW	380V(220V optional), 50Hz(60Hz optional), 3.2kW	380V(220V optional), 50Hz(60Hz optional), 3.2kW	380V(220V optional), 50Hz(60Hz optional), 4.0kW
Weight (load frame kg):	300	300	300	300
Weight (control console kg):	1850	2550	3200	6000

PROVING RINGS

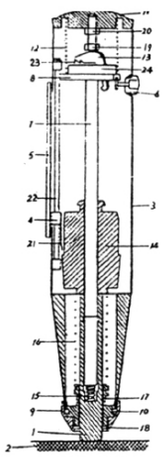
The proving ring is a device used to measure force. It consists of an elastic ring of known diameter with a measuring device located in the center of the ring.

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

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

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

HT-75 Paper/Concrete test hammer

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

Model HT-225

Impact energy:	2.207 Nm
Measuring strength range:	10-60MPa
Static friction of pointer slider:	0.65±0.15N
The rebound values calibrated on steel anvil:	80±2
Free length of strike tension spring:	75 ±0.3 mm
Spherical radius of strike rod:	25±1 mm
Dimensions:	Dia. 54×278 mm
Gross weight appox:	1.4 Kg

CONCRETE TEST HAMMERS(CONTINUED)

HT-20 Mortar 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-20 Mortar 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:	200 mm
The friction force of pointer slider:	0.98-1.47 N
Spherical radius of strike rod:	55 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-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.)

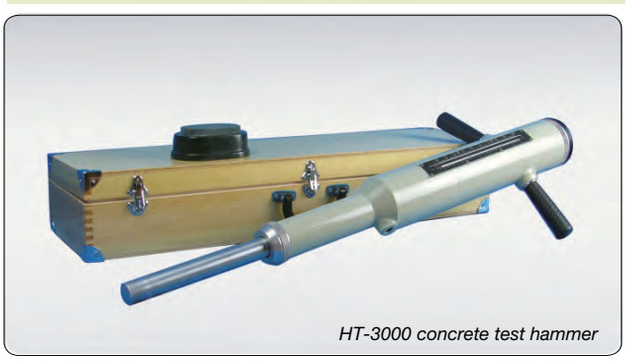
Model HT-1000	
Measuring strength ranges:	50-80 Mpa
Normal impact energy:	9.8 J(1 Kgf.m)
Strike hammer stroke:	140 mm
The friction force of pointer slider:	0.5 - 0.8 N
Stiffness of strike tension spring	10 N/cm
The rebound values calibrated on steel anvil:	83±2
Dimensions:	Dia. 65×486 mm
Gross weight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

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.

35-1530 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	/



HT-3000 concrete test hammer

CONCRETE TEST HAMMERS(CONTINUED)

HT-225W 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-225W	
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)
Stiffness of striketension spring	785N/m
The rebound values calibrated on steel anvil:	80±2
Display:	16-bit true color, 176×220 resolution, 5 grades backlight adjustment
Power:	3.7v /2300mAh rechargeable lithium battery
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-225W Concrete test hammer

Model HT-225D	
Scope of strength:	10-60 Mpa
The kinetic energy of the nominal:	2.207J
Spring stiffness:	7.84N/cm
Impact hammer stroke:	75mm
Consistency error:	≤±0.5 (The difference between the reading of the pointer of the mechanical resilience meter and the reading of the instrument screen)
Steel anvil rate set rebound value: 80±2	
Volume:	55×55×270 mm
Weight:	1.0 Kg
Operating ambient temperature: -10℃~40℃	
Packing specification:	Material: engineering plastic Volume:420*140*335mm Weight:6kg

HT-225W Concrete test hammer

HT-225D Concrete test hammer

REBAR LOCATOR

Applications:

Testing concrete cover thickness.
Single comprehensive probe, No need to replace during test.
Back-lit screen let instrument can be normal used under the condition of insufficient light.
Machine Software is complete. The report can be printed automatically connecting with computer.

Model GX-50+

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:	7.4V 2000mAh

Standard Delviery:

- Main unit
- Software Disk
- USB connecting cable
- Instruction manual
- Test Probe
- Probe Connection line
- Portable plastic case

Model GX-50+ Rebar Locator

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:

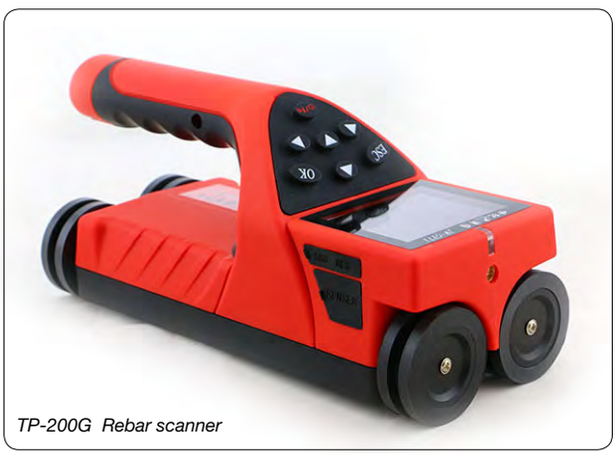
Ambient Temperature:-10°C~+40°C, to avoid direct exposure to the sun for a long time.
Relative Humidity:<90%RH;
Electromagnetic Interference: no strong alternating electromagnetic field.

Model GX-50B Rebar location and corrosion measuring system

REBAR SCANNER

TP-200G Concrete steel bar detector

It is mainly used to detect the position of steel bar,the distribution and direction of steel bar,the thickness of protective layer and the diameter of steel bar in concrete structure.



TP-200G Rebar scanner

Model TP-200G

Diameter range:	6-50 mm
Diameter estimation Display accuracy:	0.1
Protective layer measuring range:	2-200
Data transmission mode:	Bluetooth or USB
Screen size:	3.2 inch
Power supply mode:	Lithium battery
Host Size:	235*120*130mm
Single gross weight:	5.450 kg

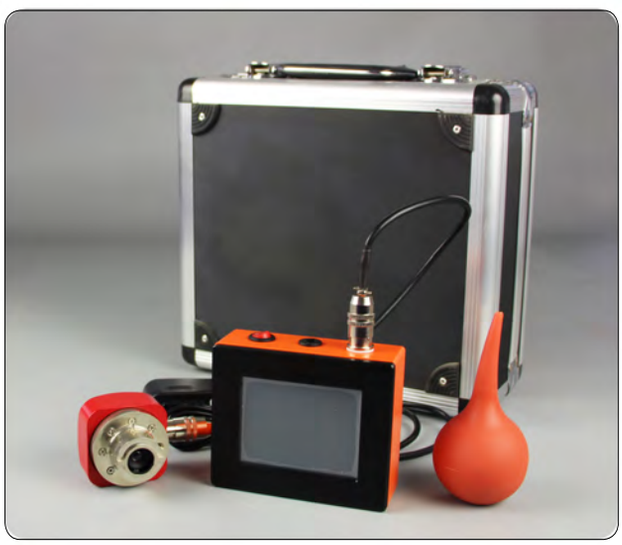
Model TP-102

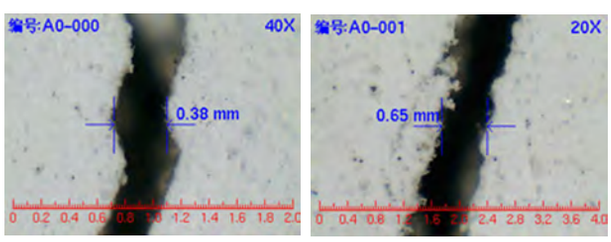
The maximum detection range:	0-8mm
Accuracy:	better than 0.01 mm
Magnification:	40times
The Operating Temperature :	-20 ~ 60 ° C
Host Interface :	standard USB
The storage:	can be stored for more than 3000 photos (SD Card is free to expand);
Image storage format:	BMP format 24 bit color 32Qx240
Power supply :	lithium battery,standby time:18 hours
Size :	Host 113x70x16.5mm
Probe :	48x56x58mm
Weight :	host 100 grams,100 grams of the probe

CRACK WIDTH GAUGE

TP-102 Crack Width Gauge

TP-102 series crack width gauge can be widely used in bridges, tunnels, buildings, concrete pavement, metal surface crack width testing.





Photos cracks images

Features :

1. Automatically show the crack width on the screem;
2. Automatically take the crack photos.(real-time image display on the screen);
3. Stored photos and all data can be reviewed;
4. Probe(camera)comes with lighting fixtures can work in dim light;
5. Simple alignment of cracks can be automatically reading, without any set up, easy operation;
6. Crack photo as a standard BMP format, directly save to any Udisk/SD card;
7. The camera function could catch all test imformation in time including crack images,test value and zoom images;
8. Host and the probe share one rechargeable lithium battery;
9. Reference specification: JGJ125-99 dangerous building appraisal standards.

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.

- Manual hydraulic pump designed to apply smooth and continuous pressure with a single stroke
- Pull Rate Indicator to manually monitor and adjust the rate of pull ; Built-in lithium battery
- LCD display, Built-in real-time clock, and all saved data has corresponding experiment date and time; it is convenient for users to summarize and manage the experimental data;
- Micro-USB interface port, the instrument is similar to a USB flash drive after connecting to a computer, which can directly copy the stored experimental data without installing any software
- Automatically calculates the pull-off force according to the size of the pull-off unit; two units of Mpa or PSI

Model TP-FCLM

Dolly type:	20mm (standard), 20 Pcs 10mm, 14mm, 50mm (optional)
Resolution:	0.01Mpa (1psi)
Precision:	±1% full scale
Pull off strength:	10mm dolly 0-80MPa; 14mm dolly 0-40MPa; 20mm dolly 0-20MPa; 50mm dolly 0-3.5MPa;
Host size:	360mm×75mm×115mm (L x W x H)
Weight:	3 Kg(NW) / 5 Kg(GW)

Model TP-FCLM

JW-40 Multifunction Concrete intensity meter

JW-40 Series intelligent digital pressure gauge, the pressure gauge to the control of single store, query and maintain peak function, simple operation, easy to use

Include:

1. Electric grindergrinding head 2. Drill, bit holder, positioning rod 3. Expansion rod 4. Punch 5. Retraction sleeve 6. Expansion spring 7. Retracting rod (M10) 8. Dilating spring rod (M14) 9 . M12 facing tile, test block (optional)

Model JW-40

Maximum pull-out force:	40kN
Cylinder stroke:	10mm
Chassis fulcrum diameter:	120mm
Minimum graduation value:	0.01kN
Indication error:	Less than ± 2% F.S
Weight:	4kg

JW series Anchor rod pull-off tester

Type	Cyilinder Center Diameter (mm)	Cylinder Stroke (mm)	Test Range (kN)	Weight (kg)	Resolution (kN)
JW-10T	27	60	0-100	7.5	0.01
JW-20T	34	80	0-200	14	0.01
JW-30T	45	80	0-300	16	0.01
JW-50T	60	120	0-500	29	0.01
JW-100T	85/95	150	0-1000	45/65	0.1

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

Model DTL-A

Working voltage:	～220VAC 60VDC
Test channel:	6 channels(9 channels, 12 channels are optional)
Working environment:	0℃~50℃ humidity≤75%
Measurement error:	<1%
Working current:	0-360mA
Total gross weight:	50kgs include vacuum saturated machine

Packing List

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

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

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.

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

CONCRETE THICKNESS TESTER

CH800-A Concrete Thickness 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 Hardware platform, WinCe5.0 operatng system, true color, TFT Touch Screen
Crack Width Test Range:	Standard Probe: 0.01mm-6.5mm High configuration probe: 0.005mm~3.5mm
Crack Width Test Accuracy:	Standard probe: ≤±0.02mm; High configuration probe: ≤±0.01mm
Crack Depth Test Range:	10mm-500mm
Crack Depth Accuracy:	≤±5%
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

PILE INTEGRITY TESTER (WIRELESS)

Pile Integrity Tester (wireless)

Pile integrity test by low strain reflected wave method.

Features

1.Unique smart voice function for your easy operation.
2.Big screen for easy wave viewing.
3.Small size and super light weight design improves holding comfort.
4.Power-efficient hardware platform for excellent battery performance.
5.The operation wizard makes the test easier and more efficient.
6.High accuracy data acquisition, high signal-to-noise ratio.
7.Built-in high sensitivity antenna for stable wireless communication.
8.Your first choice in severe environment.

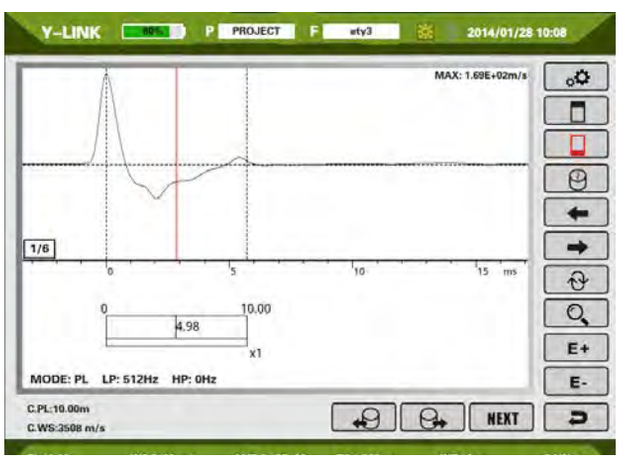
Model YL-PIT(W)

Control unit	Low power embedded industrial processor
Voice function	Smart voice prompt
Storage capacity	16G(can be extended to 128G)
Power mode	Rechargeable lithium battery≥8 hours
Operation Mode	Tablet
Data transfer mode	USB2.0
Sampling interval	5μs - 200μs
Record size	1024 points
Sampling resolution	24-bit A/D
Signal bandwidth	5Hz~12kHz
System noise	<30μv
Dynamic range	≥100dB
Channel	1
Sensor	Piezoelectric accelerometer/ Speedometer
Operation temperature	-20℃ ～ +55℃
Dimension	132×183×26mm
Weight	About 0.5kg

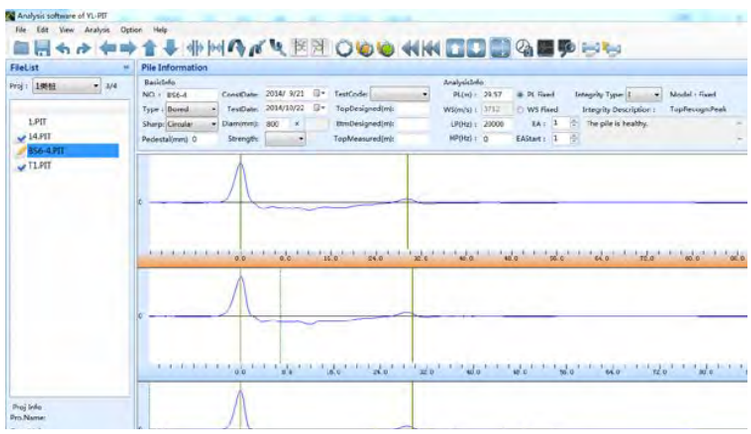
YL-PIT(W) Pile Integrity Tester(wireless)

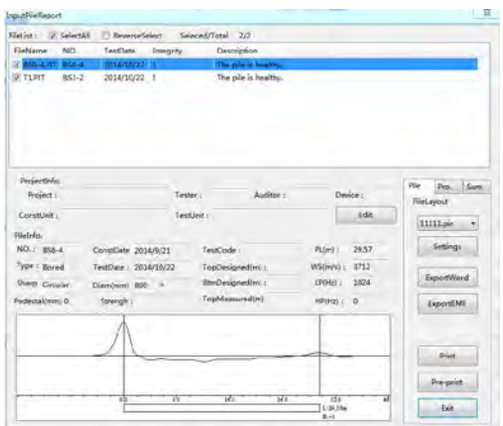
Software

1.Upgraded wave viewing function allow you to zoom in/ (or) out, compress (or) expand, and rotate the wave for a closer view.
2.Analysis assistant function provides useful tools, such as digital filter, exponential amplifier, integration, differential and frequency analysis.
3.Comprehensive summary and detailed wave analysis can be edited in a flexible way.
4.Batch note and smart auto-fill functions improve work efficiency.
5.Single pile report, multiple-pile (site) report and Multiple site (Project) report with wave diagrams are easy to produce and can be exported.



Software interface





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
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 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

Le Chatelier water bath

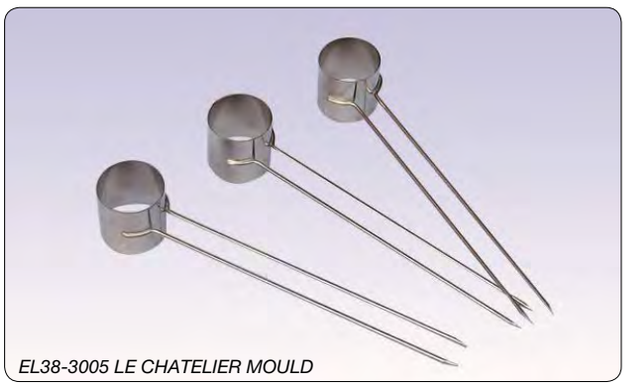
For use with Le Chatelier moulds for the determination of the soundness of cement paste. Stainless steel internal chamber housed in a stainless steel insulated exterior case. Power 3000W capable of reaching the boiling point in 30 minutes.

LC-31A Le Chatelier water bath

MODEL LC-31A	
Max temperature:	100 celcius degree
Effective capacity:	3L
Heating time controlling:	3 hours
Heating elements:	3KW
Power:	AC220V, 50HZ
Dimension:	510x300x400mm
Weight:	22kg

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

AUTOMATIC VICAT APPARATUS

EN 196-3, EN 480-2, EN 132799, ASTM C191, AASHTO T131

VICAMATIC-2, automatic electronic apparatus for setting time test on cement/mortar/gypsum. Complete with EN 196-3 accessories: initial setting time needle 1.13 mm dia., mould and PC software VICASOFT-BASIC

230V, 50-60Hz, 1ph.

63-L2700 Automatic Vicat

Spare parts	
63-L2700/E20	1,13 mm dia. needle for initial setting time test to EN
63-L2700/E21	1 mm dia. needle for setting time test to ASTM/AASHTO
63-L0027/E22	Plastic mould to EN
63-L0027/E23	Plastic mould to ASTM/AASHTO
63-L2700/E24	Glass base plate
63-L2700/E25	Spare base plate for in-water testing kit

FLOW TABLE LABORATORY METHOD

STANDARD: EN 1015-3

Motorized concrete flow table

It is used for determining the consistency of cement mortars. The motor operated models are driven by a motor speed reducer and the number of drops are shown on the counter, which stops automatically the machine at the end of the cycle. Supplied complete with flow mould and tamper.

Model FT-A

Weight of vibrating part:	4.35±0.15 kg
Height of drop:	10±0.1 mm
Vibrating frequency:	1 HZ
Working cycle:	25 S
Table diameter:	300±1 mm
Flow mould dimension:	100 mm base dia. x 70 mm top dia. x 60 mm high
Motor Power:	220V, 50Hz
Dimension:	400×400×690 mm
Net weight:	25 kg

FT-A flow table

Manual flow table apparatus

A specimen contained in a cone mould is placed on a metal surface which then is raised and dropped from a known height after releasing the specimen from the mould.

Model FT-M

Standard:	ASTM C230
Diameter of Table:	254 mm
Height of Drop:	12.7 mm
Bronze Cone Base:	Dia.100 x Top Dia.70 x High 60 mm
Approx. Weight	15 kg

Model FT-M Manual flow table apparatus

STANDARD VICAT APPARATUS

STANDARD: EN 196-3

Used for determination of setting time and consistency of cement by Vicat Method. The apparatus consists of a metal frame with a sliding rod. An adjustable indicator moves over a graduated scale. The needle or plunger is attached to the bottom end of the rod to make up the test weight of 300g. The frame is supplied without accessories, which have to be ordered separately depending on the requirement.

63-L0028 Vicat test set Weight approx.: 4 kg

Packing list

- Vicat frame
- Vicat mould
- Consistency plunger 10 mm dia.
- Supporting glass plate
- Initial needle 1.13 mm dia.
  Final needle 1.13 mm dia.

63-L0028 Vicat test set

PREPARATION OF MORTAR CUBES

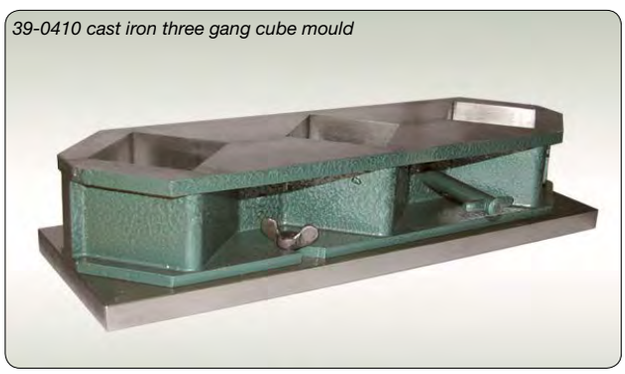
STANDARD: ASTM C87, AASHTO T71

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)
39-0412	2" x 2" cube mould	8.4
39-0410	50×50 cube mould	6.5

39-0410 cast iron three gang cube mould



39-0412 brass three gang cube mould

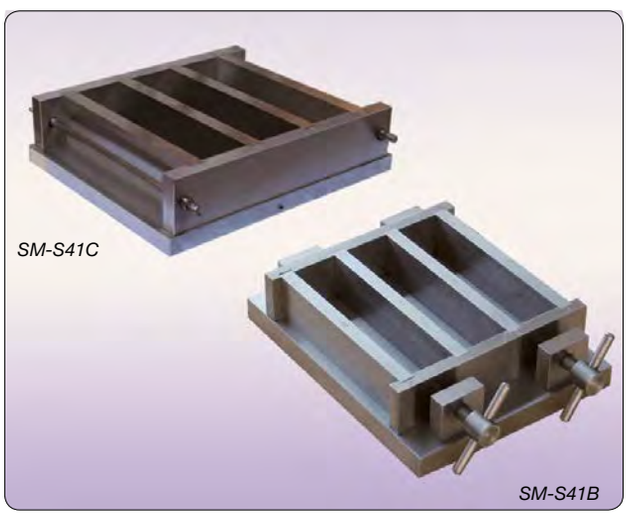
Model No	Dimension(mm)	Weight(kg)
SM-S41A	40 x 40 x 160	9.2
SM-S41B	40 x 40 x 160	12
SM-S41C	40 x 40 x 160	10
SM-C41	40×40×160	6.5

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

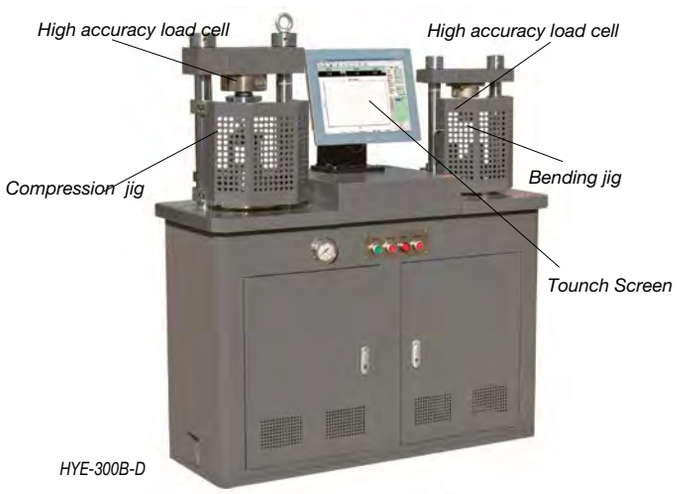
SM-S41B

SM-C41

FLEXURAL & COMPRESSION TESTING MACHINE

HYE-300B uses fully computer controlled and standard keyboard to operate the machine. HYE-300BC uses touch screen to operate the machine. 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 bending strength of the cement specimen 40x40x160mm.

HYE-300B



HYE-300B-D

CEMENT AUTOCLAVE MACHINE

It is uesd to test magnesia and stability of cement.

Model CA-2A	
Clave capacity:	8.5L
Clave I.D :	159mm
Clave O.Dxheight:	500mmx1120mm
Max pressure:	2.5 Mpa
Standard boosting pressure time:	45~75mins
Pressure volatility:	0.05Mpa
Pressure maintaining time:	3hour / 6hour
Safe thermometer :	220 degree celsius
Power:	1200w+600w, 220v /50hz

MODEL CA-2A

Code	HYE-300B/HYE-300B-D	
	Compression	Bending
Max Capacity:	300kN	10kN
Accuracy class:	Class 0.5	
Compression space:	180mm	180mm
Piston stroke:	80mm	60mm
Size of upper compression plates(Fix type)	Dia. 108mm	Dia. 60mm
Size of upper compression plate(Ball head)	Dia. 170mm	-
Size of lower compression plates(mm)	Dia. 205	-
Dimension(load frame mm):	1150 x 500 x 1400	
Power(kW):	380V(220V optional), 50Hz(60Hz optional), 0.75kW	
Weight(kg):	500/540	

CEMENT FLEXURAL TESTING MACHINE

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

Model DKZ-5000

Single lever ratio:	10:1
Double lever ratio:	max 50:1
Loading speed:	Single lever: 10N/s; Double lever: 50N/s
Capacity:	1000N for single lever 5000N for double lever
Precision:	±1%
Flexure jig:	Diameter of loading roller and supporting roller: ¢10mm; Supporting roller spacing: 100mm; Tray plate spacing: 46mm

DKZ-5000 Cement Flexural testing machine

JOLTING TABLE

Used to compact 40mm x 40mm x 160mm cement mortar prisms in the three gang mould CE240. The table consists of a platform holding the mould, seated on a rotating cam driven at 60 revolutions per minute. The jolting group is connected to the table by bayonet joints for quick checking of the weights. The150mm drop height is adjustable to maintain it after intensive use.
The table is supplied with a separate control panel with main switch, automatic digital drop counter and start/stop button.

Model 39-1150/01

Total weight of vibration part:	20 ± 0.5 kg
Amplitude:	15mm ± 0.3 mm
Vibration frequency:	60 times/60 seconds±1 second
Power supply voltage:	220 V 50 Hz
Distance from the center of the platen to the center of the arm shaft:	800±1mm

39-1150/01 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.

JJ-5 Laboratory mixer

FM-B7 Laboratory mixer

LB-160B Laboratory mixer

Model	FM-B7	LB-160B	JJ-5
Voltage:	220V	380V	380V
Width of mixing blade:	135 mm	111mm	135 mm
Mixing bowl capacity:	5 L	2.5 L	5 L
Rotation speed of mixing blade revolution(r/min):	low: 140±5 62±5 high: 285±10 125±10	low: 140±5 62±5 high: 285±10 125±10	low: 140±5 62±5 high: 285±10 125±10
Net weight(approx):	30 kg	45kg	70 kg
Power (KW):	300	370	370

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
Sieve test fineness:	0.08mm or 0.045mm
Sieve time range:	0-599sec
Negative pressure:	-1000~8000Pa
Noise:	75db

FSY-150 Cement Negative Pressure Wet Sieving Apparatus

LENGTH COMPARATOR

This apparatus is a two-column steel frame with a cross bar that can be adjusted to suit the specimen length. It is fitted with a 12.5x0.001 mm digital gauge and can be used for a number of length measurement appilcations, mainly on cement and mortar specimens of various lengths. For this reason the reference rods are not included and have to be ordered separately; the specification table below can be used to quickly and easily mask the appropriate choice.

Dimensions: 180x180x490mm Weight: 10.5kg(approx)

62-L0035/A

Two gang prism mould conforming to ASTM, 25x25x285mm, complete with contact points. Gauge length 250mm, total length 285mm.Made of steel with a maximum surface hardness of HV200. Weight 6kg approx.

62-L0009/A

Standard	Test determination	Rod code	Rod length(mm)
EN1367-4	Drying shrinkage of aggregates	62-L0034/3	205
EN12617-4,NF P15 413	Shrinkage / expansion of concrete / cement produces for structure repair / proection	62-L0034/7	160
EN12808-4	Shrinkage of grouts for tiles	62-L0034/7	160
ASTM C151,C157,C490,C596	Length change of hardened cement paste morrtar and concrete	62-L0034/1	295
UNI8520-22	Potential expansion of concrete with expansive agent	62-L0034/11	294

ELECTRIC BLAINE FINENESS(AIR) PERMEABILITY)APPARATUS

STANDARD: ASTM C204

Used to determine the particle size of Portland cement, limes and similar powders expressed in terms of their specific surface. It consists of a 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.

Model DBT-127

Inside diameter of permeability cell:	dia. 12.7±0.05mm
Height of sample in the cell :	15±0.5mm
Perforated disk:	35holes
Diameter of the hole :	1±0.10mm
Disk thickness:	1±0.10mm
Voltage:	220V

DBT-127 Electric Blaine Fineness(Air Permeability) Apparatus

SLURRY TEST KIT

STANDARD: API RP 13B-1.

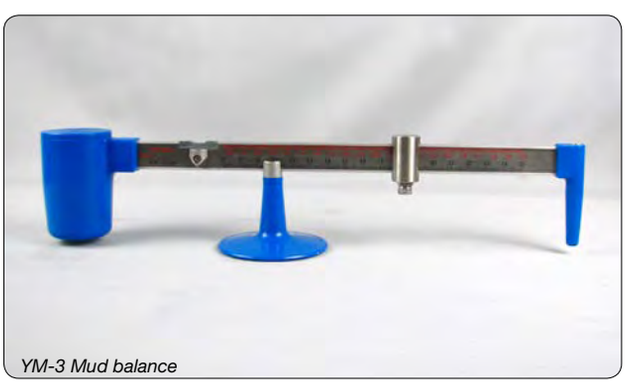
The Slurry Test Kit is a portable kit with materials and equipment for measuring slurry properties. With this kit, the user can obtain laboratory-quality measurements of Marsh funnel viscosity, specific gravity or density and sand content.
These tests comply with API Recommended Practice for Field Testing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



YM-3 Mud balance

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

XYM-1 Mud balance

AIR CONTENT METER

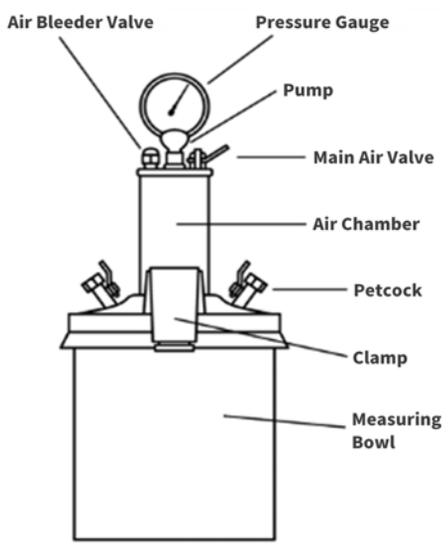
STANDARD: EN 12350-7,BS 1881-106,ASTM C231

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.

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

B-2030 Air content meter(FORM+TEST)

LS-546 Air content meter

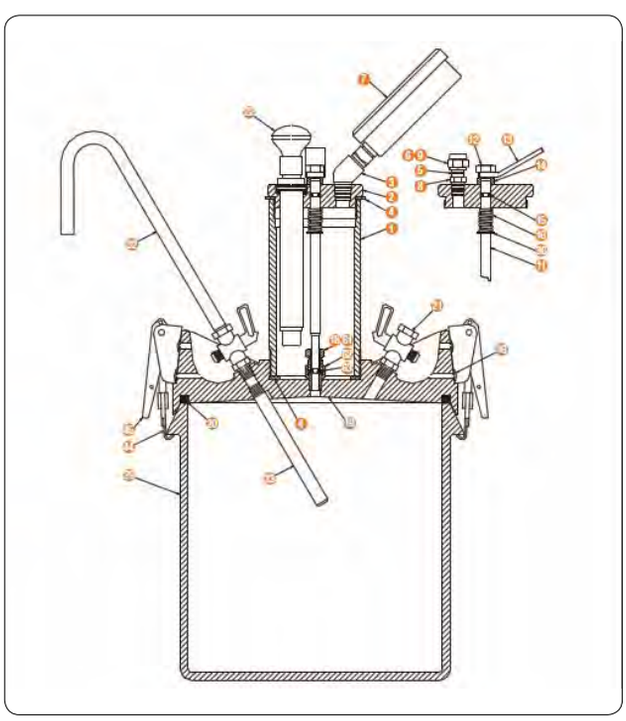


LC-615 Air content meter(SANYO)

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

RING MILL BOWLS

Ring Mill Bowls

The bowls consist of a single, solid “fl ying saucer” shaped puck operating in a bowl with a concave curved bottom surface. The mass of this single puck in combination with the spatula like grinding interaction between its lower curved surface and that of the bowl provides superior pulverising with grinding performance. The puck also has an off-centre, truncated hole through it to assist in the mixing of the sample to assure homogeniety. These bowls are of through hardened steel construction for optimum life. They are available in 800, 1000 & 2000cc nominal capacity.
All bowls in this range are suitable for use on the Essa model LM1, LM1.5 and LM2 mills.

■TYPES AND SIZES AVAILABLE

ESSA 800, 1000 & 2000cc nominal capacity bowl assemblies:

Model number	Norminal capacity(cc)	Internal diameter x depth (mm)	Grinding elements	Mass (kg)
B800	800	210 x 65	1 disc	16
B1000	1000	240 x 65	1 disc	19
B2000	2000	252 x 93	1 disc	27

Ring & roller bowl assemblies:

Model number	Norminal capacity(cc)	Internal diameter x depth (mm)	Grinding elements	Mass (kg)
B50	50	65 x 37	1roller	2
B100	100	140 x 50	ring+1roller	7
B125	125	140 x 60	ring+1roller	7
B300	300	200 x 47	ring+1roller	14
B400	400	200 x 47	ring+1roller	14

GRINDING MACHINE

YM-2000

Grind geological samples, ores, metallographic samples, ceramics, soil, mixtures, chemicals and similar particles. 95% of the sample can be grinded to less than 75 microns in 3 minutes. More mineral samples can be prepared for laboratory analysis at one time, suitable for geological exploration, research institutes, universities, testing institutions and other laboratories.
This grind mill is connected by two V-belts to the drive shaft and the 2.2KW motor shaft. This motor provides more power to the grind mill and extends the life of the motor. The new grind mill differs from conventional grind mill in that it adds 800 cc, 1000 cc, and 2000 cc of material bowl in addition to standard size grinding kits and abrasive bowl. Optional three-head grinding unit and double-head grinding unit are also available.

Features:

1. Pneumatic pressing material bowl, 2.2kw motor, 380-415V, 50Hz, three - phase;
2. Beautiful appearance, using galvanized cold-rolled steel plate, laser integrated molding, surface electrostatic spraying;
3. Integrated control box with switch button, motor overload safety device, pneumatic fail-safe device;
4. When the cover is opened, the cover guard controls the grind mill to stop automatically, which is safer and more user-friendly; optional variable frequency drive;
5. Pneumatic pressing material: 450 to 600kpa, the maximum flow rate is 1L/min.

Technical Parameters	
Max. feeding size:	10mm
Output size:	75um
Crushing efficiency:	95%
Maximum preparation:	1.8kg
Supporting control box:	Under-voltage / over-voltage protection, door protection
Ring mill bowl:	800cc/1000cc/2000cc
Grinding power arm:	Pneumatic lifting

VIBRATORY GRIND MILL

For efficient dry or wet grinding of brittle and very hard samples to analytical fi neness. Most suitable for “XRF” "XRD" and "AA" sample preparation.

Principle of Operation

Grinding is done by heavy impact and friction. Sample is kept in the annular space between the bowl, ring and the puck. A cover is kept on the top of the bowl then the bowl is clamped on vibratory platform and subjected to heavy vibrations. The vibratory platform imparts the kinetic energy to the ring and the puck.

Internal clamping part for model ZHM-3B

100ml bowl set

Internal clamping part for model ZHM-1B, ZHM-1T, ZHM-1V

Model CT01 Hardened alloy steel bowl set
Hardness: RC 60/62
Approximate Composition: Carbon 0.95%
Manganese 1.25% Chrome: 0.50% Tungsten 0.50%Vanadium 0.2%

Model CT02 Chromel steel bowl set
Hardness: RC 60/62
Approximate Composition: Carbon 2.0%
Chrome: 12.0% Molybdenum 085% Vanadium 0.2%

Model CT03 Lined tungsten carbide bowl set
Hardness: Approx 8.5 Mohs
Approximate Composition: Tungsten Carbide 94% Cobalt 5.5%
Trace elements in order of 0.002% to 0.02%: Iron, Nickel, Vanadium, Tantalum & Silicon

These bowl sets need to be ordered seperately.

FEATURES:

- Extremely fast grinding by impact and rubbing of trapped material under the grinding ring and puck.
- Analytically pure grinding without any loss of material.
- Reproducible grinding.
- Dry as well as wet grinding is possible.
- Start & Stop Push button, Motor overload protection with door safety system and fault indication lamps are provided.
- Soundproof enclosure facilitates noise below 71db during operation.
- One year warrantee against any manufacturing defects.

MODELS:

- REGULAR ZHM-1A Single bowl set with fixed speed 1400 r/min.
- ZHM-1B Single bowl set with fi xed speed 960 r/min.
- ZHM-1T Single bowl set with two speed 910/1400 r/min.
- ZHM-1V Single bowl set with adjustable speed from 750 to 1550 r/min .
- ZHM-3B Three bowl sets with fi xed speed 960 r/min.

SPECIFICATIONS

Application	For very fast grinding of medium, hard and very hard material, sample grinding for “XRF” "XRD" and "AA".
Useful capacity	100ml (user to specify)
Maximum Feed size	5mm
Time required For grinding	1 to 3 minutes (depending on the material characteristics)
Output size	Upto 75 microns (depending on material properties).
Grinding elements	1 bowl+1 ring + 1 puck for 100 ml
Material of grinding element	Hardened steel with tough core / AISI304-SS / Lined tungsten carbide / Tungsten carbide lined with Ti Al N coating / Agate / Zirconia (Stabilised) / Toughened Alumina / Corundum (natural and sintered).
Timer	0-255 (minutes & seconds)
Power	AC380V10%, 50HZ, 3-phase+ Earth
Weight and Dimension	Machine: 180kg, 650x600x960mm Packed: 240kg, 820x760x1320mm(Ply wooden case) ZHM-3B Machine: 260kg, 710x810x1080mm Packed: 340kg, 780x880x1150mm(Ply wooden case)

VIBRATORY GRIND MILL

For efficient dry or wet grinding of brittle and very hard samples to analytical fi neness. Most suitable for “XRF” "XRD" and "AA" sample preparation.

Principle of Operation
Grinding is done by heavy impact and friction. Sample is kept in the annular space between the bowl, ring and the puck. A cover is kept on the top of the bowl then the bowl is clamped on vibratory platform and subjected to heavy vibrations. The vibratory platform imparts the kinetic energy to the puck.

Internal clamping part for model ZDM50

50ml bowl set

Note:
1 bowl
2 puck
3 sample
4 cover of bowl
5 O-shaped sealed ring

Model CT01/A Hardened alloy steel bowl set
Hardness: RC 60/62
Approximate Composition: Carbon 0.95%
Manganese 1.25% Chrome: 0.50% Tungsten 0.50%
Vanadium 0.2%

Model CT02/A Chromel steel bowl set Hardness: RC 60/62
Approximate Composition: Carbon 2.0%
Chrome: 12.0% Molybdenum 085% Vanadium 0.2%

Model CT03/A Lined tungsten carbide bowl set
Hardness: Approx 8.5 Mohs
Approximate Composition: Tungsten Carbide 94% Cobalt 5.5% Trace elements in order of 0.002% to 0.02%: Iron, Nickel, Vanadium, Tantalum & Silicon

These bowl sets need to be ordered seperately.

Model ZDM-50
FEATURES:

- Extremely fast grinding by impact and rubbing of trapped material under the grinding ring and puck.
- Analytically pure grinding without any loss of material.
- Reproducible grinding.
- Dry as well as wet grinding is possible.
- Start & Stop Push button, Motor overload protection with door safety system and fault indication lamps are provided.
- Soundproof enclosure facilitates noise below 71db during operation.
- One year warrantee against any manufacturing defects.

SPECIFICATIONS

Application	For very fast grinding of medium, hard and very hard material, sample grinding for “XRF” "XRD" and "AA".
Useful capacity	50ml
Maximum Feed size	5mm
Time required For grinding	1 to 3 minutes (depending on the material characteristics)
Output size	Upto 80 microns (depending on material properties).
Grinding elements	1 bowl+1 puck for 50 ml
Material of grinding element	Hardened steel with tough core / AISI304-SS / Lined tungsten carbide / Tungsten carbide lined with Ti Al N coating / Agate / Zirconia (Stabilised) / Toughened Alumina / Corundum (natural and sintered).
Timer	0-999(seconds)
Power	AC380V10%, 50HZ, 3-phase+ Earth
Weight and Dimension	Machine: 80kg, 510x400x520mm Packed: 100kg, 520x420x550mm(Ply wooden case)

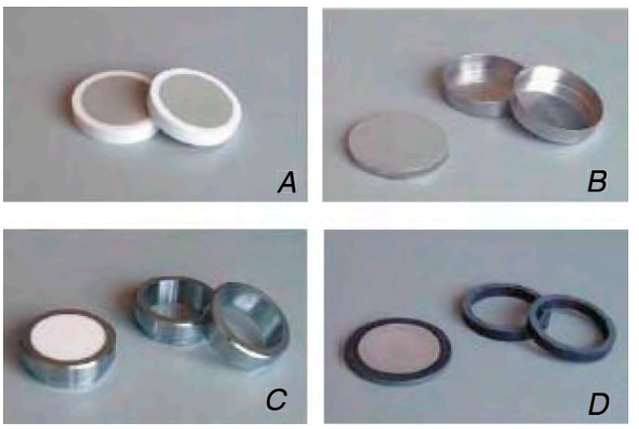
SAMPLING OF FRESH CONCRETE

For effi cient Preparation of PELLETS.
Most suitable for “XRF” "XRD" and "AA" analysis sample preparation.

After introducing the powdered sample material into the ring by means of a funnel, the sample holder is moved to the pressing position in the press tool.
The operator starts the press cycle by choosing processing programs where all pressing parameters are widely adjustable.
When the pressing cycle has fi nished, the tablet is transferred to the sample output/fi lling position.

MODELS:

- ZHY-401B with max load 400 KN(40 Tons)
- ZHY-601B with max load 600 KN(60 Tons)



Various press tools are available for different die sets (ring or cup).

Die sets:

- Type A Pellet with Boric acid cup mould dia. 40mm
- Type B Pellet with Aluminum cup mould dia. 40mm
- Type C Pellet with Steel ring dia. 40mm
- Type D Pellet with Plastic ring dia. 40mm

FEATURES:

- It adopts all kinds of methods to press samples, such as boric acid, steel ring, aluminium cup and plastic ring.
- Its electric control part is the SIMENSE PLC, and so operation is more simplifi ed and convenient, performance is more stable and reliable.
- With specific programs of slow pressurization and slow mould-release, the products are favorable to ensure acceptance rate of sample-press, improve sample quality of sample-press.
- Use exclusive stainless steel mould to prolong service life of press tools.
- One year warrantee against any manufacturing defects.

SPECIFICATIONS

Sample material	Various minerals, slags, ores, cements, raw materials etc.
Press tool	Boric acid cup, aluminum cup, steel ring, plastic ring, and low-pressure polythene
Interval between columns	220mm
Maximum stroke	100mm
Holding-pressure time	0~999 seconds
Control circuit	PLC
Rated load	1.3 KW
Power supply	AC380V±10%, 50HZ, 3-phace+Earth
Weight and Dimension	ZHY-401B Weight: 330kg Dimension: 600×500×1150mm ZHY-601B Weight: 400kg Dimension: 660×530×1180mm

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-3000Centrifuge extractor

Model CE-3000	
Voltage:	220 v±10V
Rotating speed:	3600r/min
Power :	370 w-550 w
Max. weight of specimen:	3000g(1500g optional)
Filter paper:	pack of 10
Overall dimension:	dia. 350mm x 526mm height
Weight:	35kg

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	
Temperature range:	50~200℃
Voltage:	220V
Power:	1000W x 2
Recycling capacity:	10L/h
Overall dimension:	610 x 460 x 550mm
Weight:	18kg

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-3000g
Extraction accuracy:	0.1%
Working temperature:	5~50℃
Voltage:	380V±10%
Power:	4KW
Rotating speed:	5000~10000r/min
Dimension:	111 x 100 x 120 cm
Weight:	150kgs

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

CT-A Automatic penetrometer

Automatic penetrometer

STANDARD: ASTM D5, ASSHTO T49

SZR-11 Automatic Penetrometer

Model SZR-11 Automatic Penetrometer

Displacement accuracy:	0.01mm
Time accuracy:	0.1s
Temperature accuracy:	0.1 ℃
Penetrometer needle:	2.5 ± 0.05 g
Temperature control accuracy:	0.1 ℃
Sample cup 1	70 × 45 mm
Sample cup 2	55 × 35 mm
Time Setting:	5S, 15S, 30S, 60S
Displace measure range:	0-40mm
Power supply:	220VAC 50Hz
Dimension:	330x230x520mm
Power:	50W Max
Gross weight:	10kg

Model HW-10A Water bath

Internal dimension:	500X400X300mm
Ambinent temperature:	5-40 ℃
Ambinent humidity:	<=85%
Dimension:	750x640x1300mm
Heating power:	2.0KW
Cooling power:	900W
Temperature range:	5 ~ 60 ℃

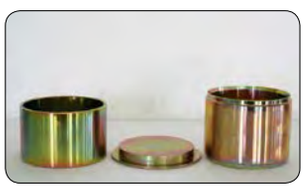
MARSHALL COMPACTOR

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:	380 V, 50 HZ, 370 W
Weight:	150 Kg



76-B0058 Marshall compaction mould

EDC-2 Marshall compactor

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

EDC-3 Marshall compactor

Model EDC-3

Hammer weight:	10.210Kg±0.010 Kg
Specimen cylinder diameter:	152.4 mm
Drop height:	457±1.5mm
Compact frequency:	60 RPM
Compact time range:	0-999 times
Dimension:	670 x 570 x 1800 mm
Power:	380 V, 50 HZ, 370 W
Weight:	160 Kg

Accesories: 76-B0058 Marshall compaction mould dia. 152.4mm can be ordered seperately.

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: 152.4mm Height: 160mm
Weight: 10.9 Kg

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 D6925, 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:	Intemal angle to 1.16 to AASHTO T312/ ASTM D6925, adjustable to any other value between 0.7° and 1.4°.
Inside diameter of molds:	149.90mm to 150.00mm
Height of Mold cylinder:	230mm
Max Height of Specimen: Gyratory compaction	130mm
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

GYRATORY COMPACTOR

STANDARD: UNIEN 12697-10, UNIEN12697-31, ASTMD6925, AASHTO T312

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.

Model HTHY XY170	
Power:	220～240V 50/60Hz 1000W
displacement range:	0~250mm
specimen height range:	30-170mm
Rotary compacting displacement accuracy:	<0.10mm
Rotation Angle:Intemal angle to 1.16 to AASHTO T312/ ASTM D6925, adjustable to any other value between 0.7° and 1.4°.	
Vertical load:	600Kpa preset,0～1000Kpa adjustable
Rotation speed :	0-50r/min adjustable
Number of gyratory:	0~999
Mould:	ø150mm,(ø100mm can be customized)
Laboratory air compressor :	220～240V 50/60Hz 1Ph
Outside size(mm):	900X700X1800(LXWXH)
Package Dimension(mm):	1000X800X1950(LXWXH)
Mould weight:	7.5 kg
Weight:	400 kg

Accessories

- Laboratory air compressor
- One dia. 150mm cylinder mould
- Height calibration block Air pipe 5
- meter

MAIN FEATURES:

- Highly rigid steel frame ensuring excellent angle control, to meet the strict tollerances requested by EN Specifications.
- Electro-pneumatic action with servo-controlled regulator.
- Electronic control unit with touch screen color display, that runs like a standard PC based on Windows operating system.
- Software for acquisition and PC data processing.
- The touch-screen icon interface allows an easy set up of the parameters and immediate automatic execution of the test, data acquisition,processing, graphics and file.
- Diagnostic analysis of the potential problem from Matest technicians, or for software
- Unlimited memory storage with 2 USB ports

HTHY XY170 Gyratory compactor

LABORATORY MIXER

STANDARD: 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 ℃
Temperature accuracy:	<±0.5 ℃
Mixing time:	1~999 Seconds
Speed of mixing blade:	Planetary/Spindle 48p.r.m./75p.r.m.
Power:	380V±10%

STLJ-4 Horizontal asphalt laboratory mixer

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:	380V±10%, 10A

STLJ-5 Vertical asphalt laboratory mixer

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:	6 cycles per minute
Trolley Travel:	±150 mm
Preheat temperature of rolling wheel:	120 celsius degree
Pressure of rolling wheel:	300N/cm
Max pressure:	20kN
Instrument size:	1800×1200×600mm
Weight:	300Kg
Power:	380V 1800W

QCX-4P Pneumatic Roller compactor

WHEEL TRACKING MACHINE

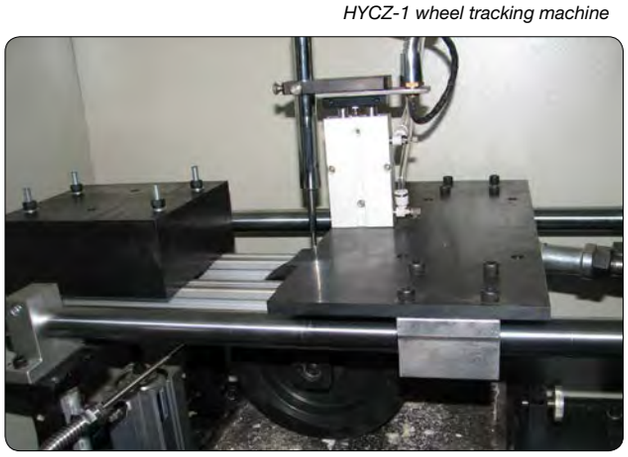
STANDARD: EN 12697-22

Rutting test of asphalt mixture is determination of wheel ruts deformation rate formed by back and forth under specified temperature and load condition, it signified by each 1mm deformed working times, also called stability.

When testing, Electric motor and decelerator output the power to make the rotation arm spinning, then doing the back and forth movement by connecting rod to drive connecting plate, the movement distance is 230±10mm, speed is 42±1times/min.Contact pressure of testing wheel and component is 0.7±0、05Mpa.Rotate the rising hand wheel, testing wheels can be rising and declining separately. Displacement transducer is applied to test the displacement value by wheel rutting specimen, that is the deformation of rutting, this deformation is gathered by computer system, and shows the value and time displacement curve after data processing, also can be printed.

Temperature sensor test the surface temperature of specimen, measuring value is passed to the temperature controller of control cabinet, to control the heater, through runner whirl blower to make the incubator inside temperature average, temperature in incubator should be controlled at the range of 60±0.5℃。Testing time can be set random, computer system controlled automatically, general testing time is 60min.

HYCZ-1 wheel tracking machine



Internal of HYCZ-1 wheel tracking machine

Software

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.

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:	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

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.Wide 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.

TPCT-5A wheel tracking machine

Software Features:

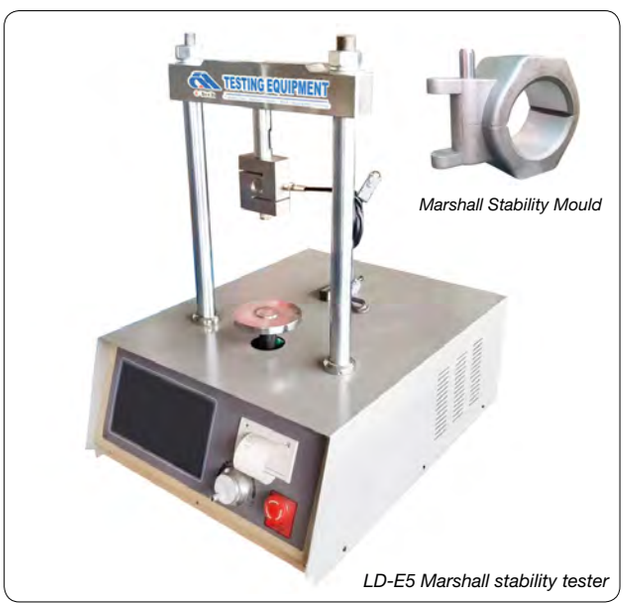
1. It can be set arbitrary time and temperature.
2. Real-time display time, temperature, displacement deformation and time curve.
3. It can display time and number of RCC.
4. Automatic calculation and print the rut dynamic stability.
5. Software for displacement sensor and temperature sensor calibration 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.

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:	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

MARSHALL STABILITY TESTER

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

Model	LD-5	LD-E5
Max Capacity (KN)	50	50
Test Rate (mm/min)	50.8	50
Cross Head Travel (mm)	70mm	70mm
Displacement Probe Travel (mm)	15mm	<30mm
Verticial Clearance (mm)	300mm	300mm
Horizontal Clearance (mm)	270mm	270mm
Marshall Stability Mould	4" Diameter 6" Diameter(optional)	4" Diameter 6" Diameter(optional)
Dimension(mm) (mm)	590(L)X310(W)X750(H)	800(L)X410(W)X1070(H)
Approx. Weight (Kg)	90kgs	100kgs
Power	220V, 50/60Hz, 1 ph, 0.5Hp,2.3A	220V, 50/60Hz, 1 ph, 0.5Hp,6A



Marshall Stability Mould

LD-E5 Marshall stability tester

LD-5 Marshall stability tester

ROTOVAPOR APPARATUS SYSTEM

STANDARD: ASTM D5404 AASHTO T319

The method uses the Absecon method to recover asphalt from the asphalt mixture. Recycling capacity 10L per hour. Power is 220V.

COMPRISES:

KHS-07A/1	flask: 500mL, heat-resistant glass, grinding mouth, flat bottom.
KHS-07A/2	Ventilation tube: rubber tube length of at least 180mm, diameter 6mm, ball diameter 10mm, there are six staggered side hole, aperture of about 1.5mm
KHS-07A/3	curved glass tube: diameter 10mm
KHS-07A/4	Cork: Good sealing with the bottleneck.
KHS-07A/5	Condenser tube: straight, water jacket length of at least 200mm
KHS-07A/6	thermometer: 0 ℃ ~ 300 ℃, accuracy 1 ℃, mercury ball 6mm long
KHS-07A/7	Erlenmeyer flask, 500mL
KHS-07A/8	CO2 gas and gas cylinders
KHS-07A/9	gas flowmeter, the measured capacity of 2000mL / min or more
KHS-07A/10	heating sleeve
KHS-07A/11	high-speed centrifugal separator, can be installed more than 4 centrifuge tube, centrifugal force of not less than 770 times the acceleration of gravity (770G).
KHS-07A/12	centrifuge tube, capacity of more than 250mL
KHS-07A/13	decompression filter
KHS-07A/14	electric insulation sets (size and 500mL distillation bottle), can also be used oil bath or sand bath, and a thermostat device.
KHS-07A/15	Solvent, Trichlorethylene, industrial use
KHS-07A/16	Other: glass wool cover, zeolite, glass capillary.

KHS-07A Rotovapor Apparatus System

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.

LM30 Laboratory mixer for the production of cold mixes, a perfect match for the Laboratory Foam Bitumen Plant.

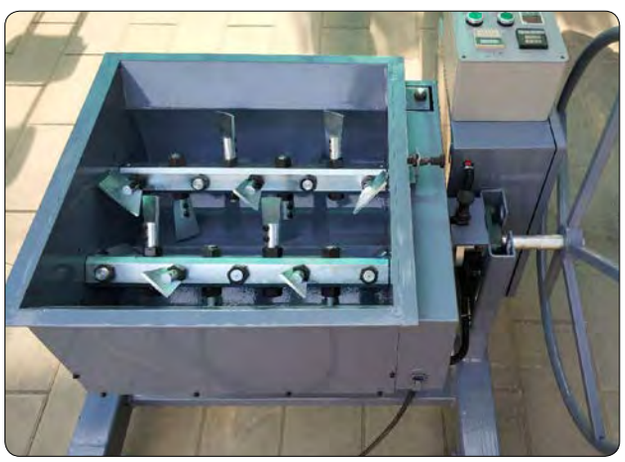
Model iFoam	
Water consumption:	Min: 2.5L/Hour; Max: 6.0L/Hour
Air consumption:	Min: 0L/Hour Max: 100L/Hour
Max bitumen pump pressure:	2.5Mpa
Max water pressure:	0.6Mpa
Air pressure:	Min: 0.4Mpa; Max: 0.6Mpa
Water Temperature:	Min: 10°C; Max: 60°C
Bitumen temperature:	Min: 140°C; Max: 200°C
Bitumen tank 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

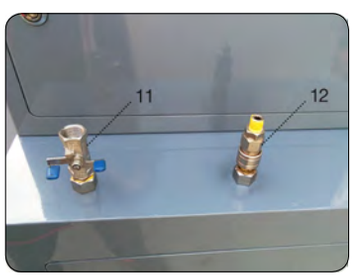
LABORATORY FOAM BITUMEN PLANT

For high-quality base layers from cold mixes

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.

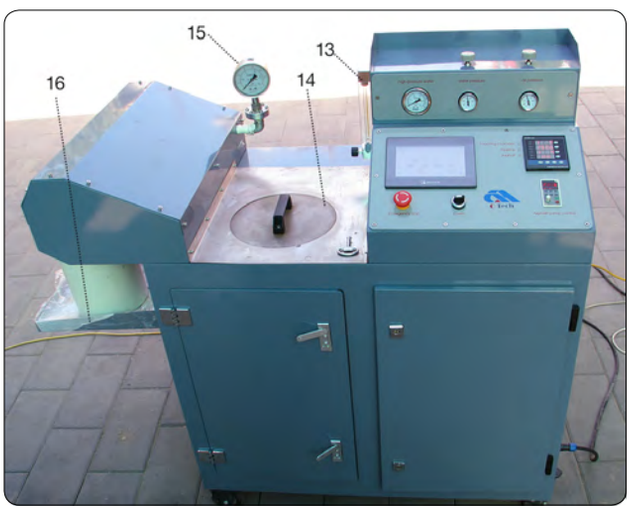
Internal part of LM30 mixer





One-to-one simulation of the cold recycling process in the lab

Foamed bitumen is used to and ever-increasing degree as a binding agent in economical cold recycling. Preliminary testing with the mobile laboratory-scale plant enables the foamed bitumen quality to be precisely determined in the lab even prior to the start of constuction. Extremely simple handling permits different parameters, such as water quantity, pressure and temperature, to be varied quickly, and different types of foamed bitumen to be produced within a short period of time. Based on the results achieved, the laboratory mixer can then be used to determine the mix proportion and to define the optimum bitumen foam for production of the test specimen.



Configuration Table

Item No.	Description
1	Air pressure adjusting valve
2	Water pressure adjusting valve
3	Air pressure gauge
4	Temperature controller
5	Frequency converter
6	Water pressure gauge
7	Hight pressure water pressure gauge
8	Touch screen
9	Emergency stop for asphalt pump
10	Switch
11	Water filling nozzle (ball value)
12	Air inlet
13	Water flow meter
14	Asphalt tank cover
15	Pressure gauge of asphalt pump
16	Asphalt bucket support board
17	Content gauge

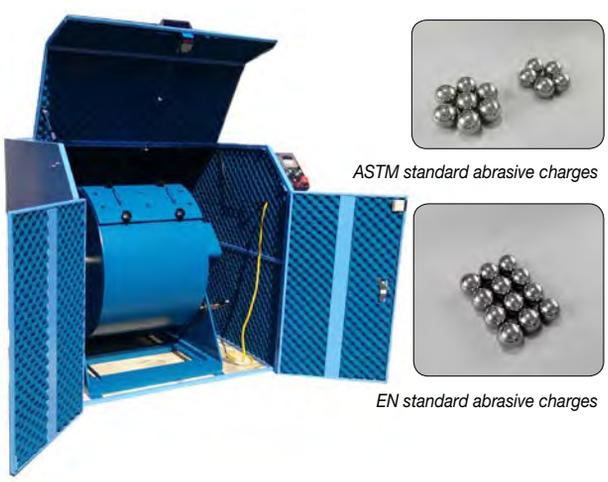
LOS ANGELES ABRASION MACHINE

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

42-5305/01 Los angeles abrasion machine consists of a rolled steel drum that its wall thickness is 12mm 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 31 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 Compelete machine surface processing is spraying plastic.

Model 42-5305/01	
Internal dimension:	710mm×510mm(±5mm)
Rotate speed:	31-33 r.p.m
Outside dimension:	950x1000x1100mm
Abrasive charges:	Set of 12 abrasive charges: 1.13/16” (7 pcs) and 1.7/8” (5 pcs). (ASTM, C.N.R)
Abrasive charges (options)	Set of 12 abrasive charges: 1.7/8” (EN)
Power:	AC220V 50HZ/60HZ



ASTM standard abrasive charges

EN standard abrasive charges

42-5305/01 Los angeles abrasion machine with noise reduction and safety cabinet

Accessories EN 1097-2	
42-5305/01A2:	Set of 12 abrasive charges: 1.7/8”
Spare parts(need to be ordered seperately)**:**	
42-5305/01A1:	Abrasive charges: Set of 12 abrasive charges: 1.13/16” (7 pcs) and 1.7/8” (5 pcs).
42-5305/01A3:	Noise reduction and safety cabinet
42-5305/01A4:	Steel tray for specimen unloading
42-5305/01A5:	Protect cover

42-5305/01 Los angeles abrasion machine with 12mm wall thickness

Features:

• Supplied with an automatic digital counter that shows the number of revolutions for the drum

• Provided with a cover and a safety stop button is prominently positioned.

• The machine is fitted with a revolution counter and steel tray for specimen unloading.

• Heavy steel cylinder drum that wall thickness is 12mm and base frame. Includes steel tray for specimen unloading

• Full length opening with protective cover or noise reduction and safety cabinet

42-5305/01 Los angeles abrasion machine with protect cover

DEVAL ABRASION TESTING MACHINE

STANDARD: EN 1097-1, EN 13450, NF P18-576

This machine is used to determine the resistance to wear of aggregates. The machine consists of a steel frame suitable to house four 200 mm dia.x 154 mm length cylinders (EN 1097-1) or two 200 mm dia.x 400 mm length cylinders (EN 13450). The top machine is enclosed in a sound proof and safety cabinet conforming to CE requirement and stops automatically when the cover is open. The machine is equipped with an automatic counter, which can be preset to the required number of revolutions of the drum or the total working time.
The four standard cylinders 200 mm dia.x 154 mm length are included. The 400 mm long cylinders and steel spheres are not included and have to be ordered separately. See accessories.

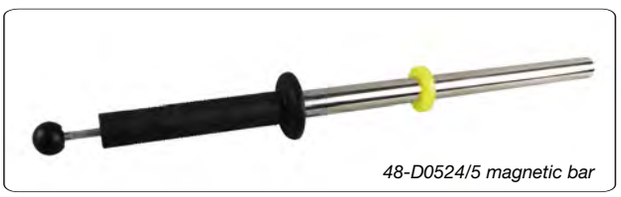
Features:

- Complete with four Stainless steel cylinders 200 mm dia.x154 mm length
- Suitable for rolling two 200 mm dia.x400 mm long cylinders
- Revolutions setting counter included
- Enclosed in safety protection

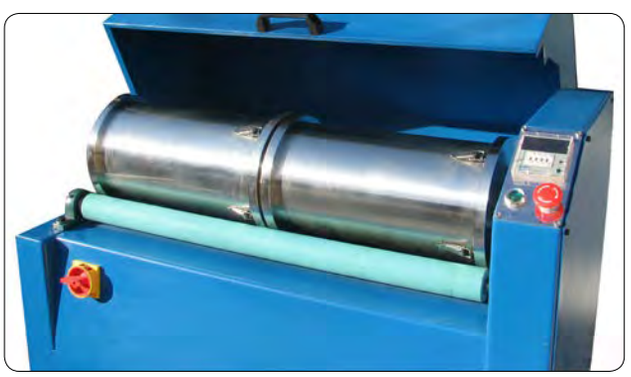
Model 48-D5242	
Dimension:	1100 x 470 x 1200mm
Weight:	170kgs
Power:	AC220V 50HZ, single phase, 750 W

48-D5242 internal view

Accessories EN 1097-1 (need to be ordered separately)	
48-D0524/7	Stainless steel spheres 10 mm dia. Pack of 20 kg
Accessories EN 13450 (need to be ordered separately)	
48-D0524/8	Stainless steel cylinders 200 mm dia. x 400 mm length. Note: Abrasive charge (steel spheres) not required.
Accessories NF P 18-576 (need to be ordered separately)	
48-D0524/1	Steel spheres 30 mm dia. Pack of 10.
48-D0524/2	Steel spheres 18 mm dia. Pack of 50.
Spare parts:	
48-D0524/4	Four standard Stainless steel cylinders 200mm dia. x 154 mm length
48-D0524/5	Magnetic bar 580x25x220mm



48-D0524/5 magnetic bar



48-D0524/8 stainless steel cylinders 200mm dia.x 400 mm length

48-D5242 Deval abrasion testing machine

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:	5.5/9 HP
Weight:	130 Kg
Dimentions:	1080×780×1150 mm

TPD-Q20 Core drilling machine

DLF-22

Bridge and Tunnel Invert Special Core Drilling Machine

DLF-22

TPD-Z110 Core drilling machine *TPD3-250 Core drilling machine*

Model TPD3-250	
Drilling range:	15-250 mm
No-load speed:	650 r/min
Power:	110v/220v/240v, 50-60HZ,4580W
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

Model DLF-22	
Max. applicable diameter	ϕ200mm
MAX Drilling Depth	2400mm
Rated voltage	220 / 240V
Rated frequency	50-60Hz
Input power	2200W
No-load speed	580/1400/2800rpm
Weight	42/50kg
Overall size	900x400x250 mm

DUCTILITY TESTING MACHINE

STANDARD: ASTMD113

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

84-B0141B Ductility mould and ductility mould plate

84-B0141 Ductility mould and ductility mould plate

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.

Ductility mould are made of brass, accurately machined to the specified dimensions. These need to be ordered separately.

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:	±0.1℃
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

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:	4 pieces of reserve-flow capillary viscometer tubes in a group; Their diameters are 1.26mm, 1.48mm, 1.88mm, 2.2mm. The users should prepare Ubbelohde type viscometer tubes by themselves.

SAYBOLT VISCOSITY APPARATUS

Model SYD-0623

The instrument mainly comprises the bath, bath temperature control instrument and timer components. The bath is made of stainless steel, equipped with heating tube, a temperature control table automatically control, to ensure that the bath in the heat transfer oil and other media at 240 ℃.

Model SYD-0623

Power supply:	AC 220V± 10%, 50 Hz
Instrument type:	desktop
Work:	dual detection, parallel test
Sample acceptance bottle specifications:	60 ± 0.05ml;
Bath heating power:	1000W
Bath operating temperature:	room temperature ~ 240.0 ℃;
Bath temperature control accuracy:	± 0.1 ℃
Test time range:	0.0s ~ 1999.9s
Test timing accuracy:	± 0.1s;
Ambient temperaturer:	≤ 35 ℃
Relative humidity:	≤ 85%
Dimensions:	400x400x800mm

ELECTRIC DENSITY GAUGE

EDG-A utilizes advanced electromagnetic technology to obtain accurate asphalt pavement density readings.

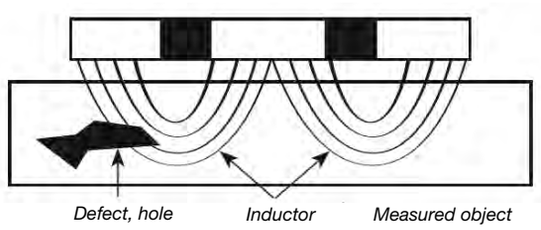
Features:

No radioactive materials or special license required
Light weight and easy to use
24 hours of portable operation
Measures density in common units (Kg./M3)
Measures for asphalt temperature
Stores 4000 readings on internal data l ogger
Optional download to computer

Packing List

1. One storage case
2. One edg -a unit
3. One battery charger: 220V/50h z
4. One u s B data cable
5. User manual, warranty card, certificate

The density of asphalt pavement is directly proportional to the measured dielectric constant of the material. EDG-A uses electrical waves to measure dielectric constant using an innovative, toroidal electrical sensing field established by the sensing plate. t he electronics in the edg -a convert the field signals into material density readings and displays the results. Once calibrated, direct density readings can be consistently obtained. as shown below:



EDG-A Electric Density Gauge

EDG-A can be used in three different measurement or run modes, respectively:
S ingle reading mode
Continuous reading mode
A verage reading mode

S ingle reading time less than five (5) seconds.
A verage averages five (5) readings and stores data including date and time. s tores thousands of records
Continuous instantaneous density readings.
Segregation identifies variations in material density associated with segregation

Function

D ensity % compaction
Integrated t emperature s ensing
Real-time temperature display 0° c to 350°c
Calibration Mode
Normal correlation offset to cores

Mesurement specification

Sensing a rea 11 inch dia. base allows optimum measurement on fine and coarse material types.
Max Measurement d epth 110mm
Measurement d isplay densi t y, % compaction, Surfacet emperature, Mix name & project name

Mechanical Specification

s hipping Weight w/ c ase 9.00kg
s hipping d imensions 490 x 220 x 390 mm

Electrical Specification

Battery 2000mAh Ni-MH , 12V
Recharge time 4 hours
Battery charger 12V Universal AC charge
Computer ports 1 USB port

ELECTRIC DENSITY GAUGE

EDG-2A utilizes advanced electromagnetic technology to obtain accurate asphalt pavement density readings.

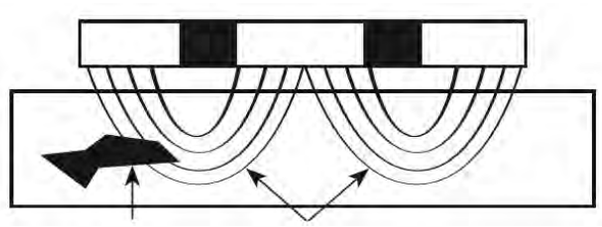
Features:

Fast and accurate material density and compaction test.
The use of non-nuclear technology means exemptions from licensing, service charges or security considerations.
You can read the data accurately in three seconds.
Touch screen operation, easy operation.
No other method calibration, site direct test.
Higher precision and better stability.

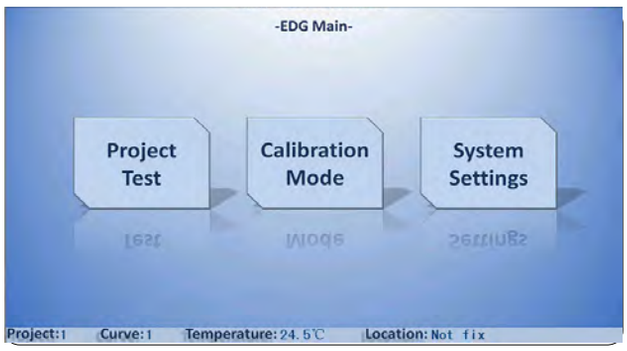
Packing List

1. One storage case
2. One EDG-2A unit
3. One battery charger: 220V/50Hz
4. One USB data cable
5. User manual, warranty card, certificate

The density of asphalt pavement is directly proportional to the measured dielectric constant of the material. EDG-2A uses electrical waves to measure dielectric constant using an innovative, toroidal electrical sensing field established by the sensing plate. The electronics in the EDG-2A convert the field signals into material density readings and displays the results. Once calibrated, direct density readings can be consistently obtained. As shown below:



EDG-2A Electric Density Gauge



EDG-2A can be used in three different measurement or run modes, respectively:
Single reading mode
Continuous reading mode
Average reading mode

Single Reading time less than three seconds.
Average Averages five (5) readings and stores data including date and time. Stores thousands of records
Continuous Instantaneous density readings.
Segregation Identifies variations in material density associated with segregation

Function

Density % Compaction
Porosity %
Integrated Temperature Sensing
Real-time temperature display 0° C to 350°C
Calibration Mode
Normal Correlation offset to cores

Mesurement specification

Sensing Area 11 inch dia. base allows optimum measurement on fine and coarse material types.
Max Measurement Depth 110mm
Measurement Display Density, % Compaction, Surface Temperature, Mix Name & Project Name

Mechanical Specification

Shipping Weight w/ Case 9.00kg
Shipping Dimensions 490 x 220 x 390 mm

Electrical Specification

Battery 2000mAh Ni-MH , 12V
Recharge Time 4 hours
Battery Charger 12V Universal AC charge
Computer Ports 1 USB Port

SKID RESISTANCE AND FRICTION TESTER

The Pendulum Skid Tester measures the frictional resistance between a rubber slider mounted on the end of a pendulum arm and the test surface. This provides highway engineers with a routine method of checking the resistance of wet and dry surfaces to slipping and skidding, both in the lab and on site.

Standard:

BS EN 1097-8 determination of polished stone value **AS/NZS 4586:**1999 slip resistance classifi cation of new pedestrian surface materials
BS 6077 Pt1 clay and calcium silicate pavers for flexible pavements
BS 7044 artificial sports surfaces: person/surface interaction
BS7188 impact absorbing playground surfaces B
S 8204 in-situ flooring, part 3 code of practice for polymer modified cementitous wearing surfaces
ASTM E303 standard method for measuring surface frictional properties using british pendulum
BS 7976 method of operation and calibration of the pendulum tester EN 1436: 1997 road marking materials **BS EN 13036-4:2003** road and airfi eld surface characteristics
BS 812 Pt. 144

Applications:

- Road surface testing
- Testing of new road surface materials under development
- Testing of aggregates in the PSV (polished stone value) test
- Testing of floors and pedestrian walkways
- Flooring materials product development
- Accident investigations, both traffi c and pedestrian
- Litigation investigations

48-B0192 Skid resistance and friction tester

Air transport case for 48-B0192

STANDARD DELIVERY:

48-B0192	Portable skid resistance and friction tester, adjustable in height
B0192/1	Sturdy case with dense foam inserts giving excellent protection
B0192/2	F' Scale Built in, for use with small slider set for 76mm slide length. (PSV test)
B0192/3	Perspex setting gauge 126 mm
B0192/4	TRRL3.0, Slider 55 Road surfaces. Customer can choose either type.
B0192/5	Brush, For removing unwanted dirt or grit from area to be tested
B0192/6	C Spanner, For attaching and releasing arm to rotating head
B0192/7	17mm Spanner For fitting rear foot
B0192/8	Water spray bottle, For wetting surface to be tested
B0192/9	Feet pads, For placing under levelling feet when on soft ground
B0192/10	Operating instructions, A guide to road, floor and PSV testing
B0192/11	Tool set
B0192/12	Calibration Certificate Despatched

OPTIONS: need to be ordered seperately

B0192/13	Metal base plate without fixing device
B0192/14	TRRL 1.250, Slider 55 PSV Test
B0192/15	FOUR S, Slider 96 Internal Floors
B0192/16	Fixing device to base for blocks and nature stones(EN1341,1342)
B0192/17	Fixing device to base for laboratory polished test

SKID RESISTANCE AND FRICTION TESTER

Features:

- Designed for laboratory and in situ road surface testing
- Dispatched calibrated to ASTM E-303
- Low friction arm, and lightweight pointer
- Comes with integral 'F' scale for use with small slider set for 76mm slide length. (PSV test)
- Repeatable and reproducible
- Supplied with robust carrying case

Model 48-B0190/48-B0191/48-B0192

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
Weight of rubber slider:	16g
Package:	Aluminum alloy Air transport case

Test report of rubber slider by CNAS laboratory

Standard delivery accessories for 48-B0192

48-B0191 Skid resistance and friction tester

48-B0190 Skid resistance and friction tester

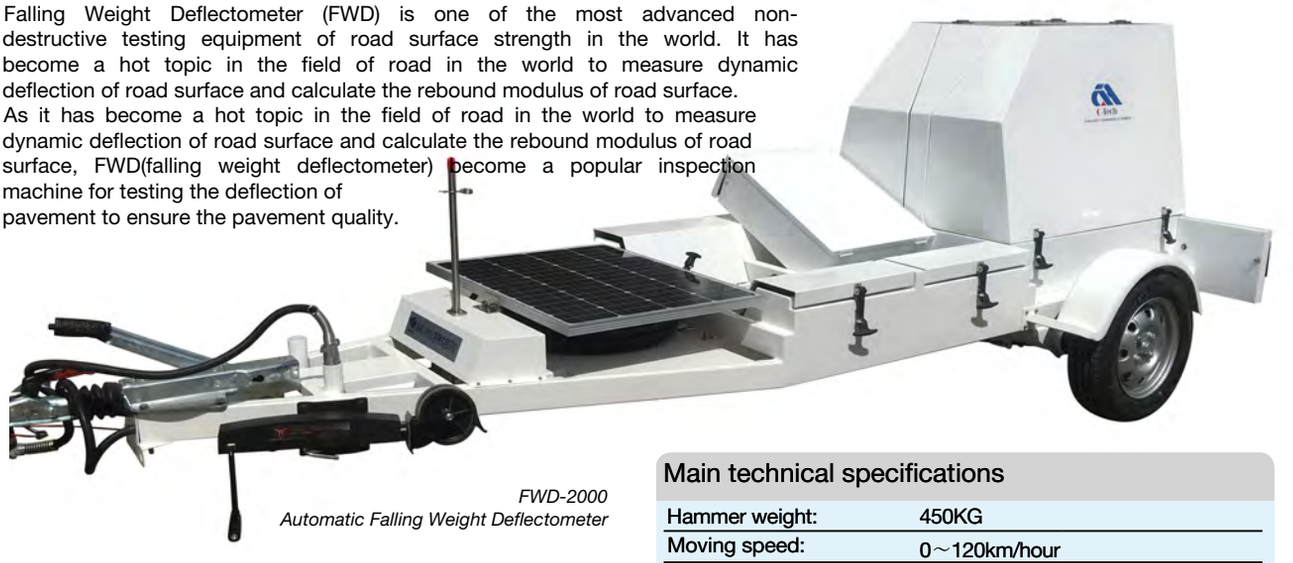
Options for 48-B0192

B0192/13	Metal base plate without fixing device
B0192/14	TRRL 1.250, Slider 55 PSV Test
B0192/15	FOUR S, Slider 96 Internal Floors
B0192/16	Fixing device to base for blocks and nature stones(EN1341,1342)
B0192/17	Fixing device to base for laboratory polished test

AUTOMATIC FALLING WEIGHT DEFLECTOMETER

STANDARD: ASTM D4694-96

Falling Weight Deflectometer (FWD) is one of the most advanced non-destructive testing equipment of road surface strength in the world. It has become a hot topic in the field of road in the world to measure dynamic deflection of road surface and calculate the rebound modulus of road surface.
As it has become a hot topic in the field of road in the world to measure dynamic deflection of road surface and calculate the rebound modulus of road surface, FWD(falling weight deflectometer) become a popular inspection machine for testing the deflection of pavement to ensure the pavement quality.



FWD-2000
Automatic Falling Weight Deflectometer

FEATURES:

1.Easy to operate, and fully-automatic
2.“One-Key Operation” The whole testing task can be completed by one single person with pressing just one key on laptop.
3.In order to check our machine’s performance & repeatability, we have used Dynatest FWD model 8000 to do test together with our FWD at same point of location and collected the data from the both machines and found quite good and repeatability is also found very satisfactory.
4.We have used Imported parts(see attached list) in the machine to ensure better quality and for better accuracy.
5.Strong and durable trailer base plate. We have used four-part plates to make better contact with the surface.
6.Equipped with laptop for wireless data transmission
7.GPS location and temperature measurement
8.Auto capture of deflection value and load value.
9.Continuous outdoor working.
10.Storage Battery Charging: charging by electric generator on the tractor
11.Double Locking System: Hydraulic/ Mechanical
12.Emergency System: Lift the load plate when system breaks down.
13.Operation Options: Manual/ Automatic
14.Working status of load plate can be monitored on the screen.
15.Inertia Braking
16.Synchronized turn/break/back light and head warning light with the tractor

Main technical specifications

Hammer weight:	450KG
Moving speed:	0～120km/hour
Testing speed per point:	25～30s
Deflection type:	Magnet electric speed sensor
Deflection sensor quantity:	1-9pcs selectable (standard configure is 9pcs)
Deflection range:	±2500um
Deflection accuracy:	2%
Deflection repeatability:	1%
Loading force:	12～150KN(can extend to 250KN)
Loading pulse shape:	essentially half-sine
Loading repeatability:	2%
Loading resolution:	0.1KN,1Kpa
Temp. Measuring range:	-50℃～100℃
Temp. Resolution:	0.1℃
Temp. Accuracy:	0.50%
DMI sensor type:	pulse coder
DMI sensor quantity:	1pc
GPS locating:	horizontal within±2meter

Accessory Parts List

Item	Spec/Parameter	Qty.
Deflection Sensor	Seismic geophone (0～5000 UM)	9
Loading Sensor	Strain type impact force sensor (0～150KN)	1
Temperature Sensor	Pt100 platinum resistance thermometer -50～100C	2
Weight Height Sensor	Ultrasonic position sensor (0～450mm)	1
DMI Distance Sensor	Inductive proximity switch (0 to 5mm)	1
Loading Plate Position Sensor	Inductive proximity switch (0～2mm)	2
Weight Top-Bottom Limit Sensor	Inductive proximity switch (0～4mm)	2
Pressure Sensor For Hydraulic System	Diffused silicon pressure sensor (064kgf/cm2)	2
Lock Pin Position Sensor	Inductive proximity switch	4
Hydraulic Valve	Plate/plug type hydraulic valve/ distributary flow collector valve/liquid controlled one-way valve	1
Motor For Hydraulic Pump	12V 3/4PH DC motor, 1800r/min	1
Laptop	Lenovo	1
Trailer Half Shaft	Al-Ko 1.2TON	1

WALKING PROFILOMETER

STANDARD: ASTM 2133

The Walking Profiler is a high-precision measurement instrument for collecting surface condition information, at true walking speed.
The Walking Profiler produces outputs from pavement profile, providing International Roughness Index (IRI), MPD texture (as an optional parameter) and distance. Platform is separate to the carriage, which means it is less susceptible to operator input. Data can be collected at variable speeds up to 5km/hr and is controlled by an Android tablet. Real-time results are displayed on the screen, allowing for on-site decision making.

◆ Measurable Parameters

International Roughness Index (IRI) :

is an indicator used worldwide for the characterization of longitudinal road roughness. This study summarized IRI limit values for new, reconstructed or rehabilitated roads, for in-service (existing)roads and road classification schemes used around the world.

Flatness standard deviation (σ) :

standard deviation of the flatness adopt continuous flatness meter to measure the standard deviation of unflatness, represents the flatness of the road surface.

Ride Number(RN) :

The Ride Number (RN) is a mathematical processing of longitudinal profiles that allows the estimation of the subjective ride quality perceived by road users.

Ride Quality Index (RQI)

◆ Features

1.World Bank Class 1 Profilometry device
2.Optional laser for MPD texture measurement
3.Varying collection speed options
4.Android tablet operation
5.Bluetooth connectivity
6.Outputs of ERD and PPF files, for use in ProVAL

◆ Applications

1、Provides outputs of IRI, longitudinal profile and distance
2、Reference tool for calibrating and assessing high speed profilers
3、Suitable for many surfaces, including paved roads and footpaths, airfields and runways, bridges and carparks.

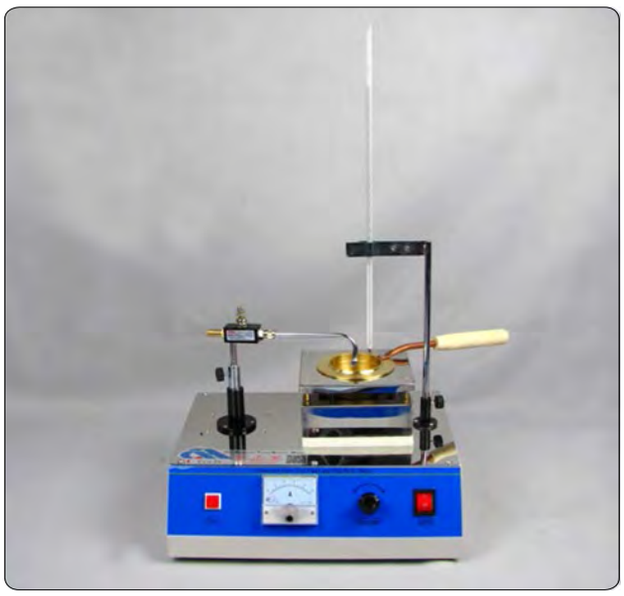
Technical data

Model:	Walking Profilometer
Operator Quantity:	1people
Operate Speed:	Normal walking speed
Calculate length of the Road:	Any Length More than 5M
Roughness index sampling interval:	12.5cm
System Power:	large capacity lithium battery
Operate enviroment temperature:	- 40℃ ~ 80℃
Dimensions:	650mm×380mm×330mm
Weight:	20Kg

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 ℃ ~ 50 ℃
Relative humidity:	≤ 85%
Power consumption:	Less than 650W
Dimensions:	350x300x400mm
Weight:	10kg

VACUUM PYCNOMETER, RICE TEST SET

STANDARD: ASTM D2041, AASHTO T209, T283, EN 12697-5, EN 13108.

The large capacity vacuum pycnometer is used in Rice testing to determine the specific gravity of bituminous mixes.
The large capacity vacuum pycnometer has a 10liter capacity and will accept an asphalt sample up to 6000 g with a maximum aggregate size of 2 in. The vessel is constructed of lightweight polycarbonate. The transparent dome cover permits easy observation of bubble release during testing.
The vacuum pump should be ordered separately.

SPECIFIC GRAVITY (RICE TEST) EQUIPMENT

STANDARD: AASHTO T209, AASHTO T283

Maximum theory density tester

MD-5 Asphalt Mixture Maximum Theoretical Specific Gravity and Density Tester is suitable to determine the theoretical maximum specific gravity and density of asphalt mixture by using vacuum method. The determination is used to design the asphalt mixture ratio and calculate the percentage of void and the degree of compression for investigation of road situation or quality management of road surface construction. But it is not suitable to the water absorption rate of porous mineral aggregate asphalt mixture more than 3%.

MD-5 Asphalt Mixture Maximum Theoretical Specific

Model MD-5 Technical Parameter

Vacuum degree:	3.7Kpa (±0.3)
Container volume:	4300ml *2pcs
Input power:	150W
Overall dimension:	500X500X360mm
Net weight:	32.5kg approx
Voltage:	220V±10%, 50HZ

PC-250

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-806E	
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-806E Automatic ring and ball apparatus

SYD-2806G automatic ring and ball apparatus adopts computer controlling technology, electron photo-electricity measurement technology,LCD and micro-printer, and has the characteristics of linear heating temperature, uniform stirring speed, simultaneous four sample dertermination, and automatic softening point detection, so it is an automatic, convenient, reliable and intelligent instrument for softening point determination. It is the best choice of asphalt manufacturing companies, highway and bridge construction companies, college and universities and scientific institues.

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.	

SYD-2806G Automatic ring and ball apparatus

ROTATIONAL VISCOSITY TESTER

Main features:

1, the measurement method is simple and reliable

2, can be directly measured absolute viscosity

3, can be drawn viscosity curve, given the recommended mixing and compaction temperature range

NDJ-1C Rotational Viscosity Tester

Model NDJ-1C ROTATIONAL VISCOSITY TESTER

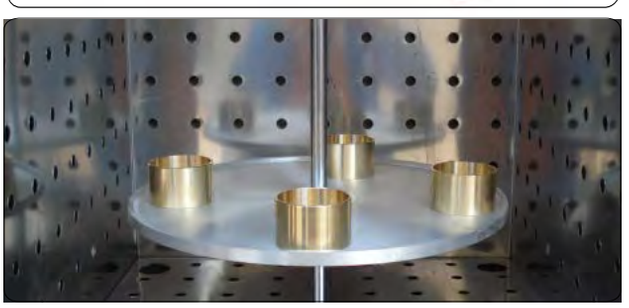
Measuring range:	100mPa • s ~ 200000mPa • s
Rotor specifications:	21,27,28,29 four kinds of rotor
Rotor speed:	5,10,20,50 r / min fourth gear
Measurement error:	± 1% (F • S)
Measurement methods:	manual, automatic
Temperature range:	room temperature ~ 200 ℃
Temperature control accuracy:	± 0.1 ℃
Sheng tube volume:	20ml
Working power:	AC 220V ± 10%, 50Hz
Ambient temperature:	5 ℃ ~ 35 ℃
Relative humidity:	not more than 80%
Dimensions:	400X400X300mm
Weight:	25kgs
Power:	1KW

ASPHALT LOSS TEST OVEN

STANDARD: ASTM D6, ASTM D1754, ASSHTO T47, ASSHTO T179

Main feature: The instrument internal chamber is made of stainless steel, and with temperature range of 50 ~ 199 ℃, can be arbitrarily set, display settings and real-time temperature, set the oven after the automatic control system temperature.

SYD-0608 Asphalt loss oven



Model SYD-0608 ASPHALT LOSS OVEN

Power supply:	AC 220V±10%, 50 Hz
Power:	3 kW
Temperature in working chamber:	163℃±0.5℃
Temperature controlling accuracy:	±0.5℃
Speed of dial:	5.5r/min±1r/min;
Sample quantity:	4 pieces
Ambient temperature:	5~40℃
Relative humidity:	≤85%
Size of working chamber:	450×450×500mm
Dimension:	730x700x1250mm
Weight:	116kgs

ROLLING THIN-FILM OVEN

STANDARD: ASTMD2872

It can be used to measure the mass loss of asphalt after heating. The changes of penetration, viscosity, ductility and brittleness point of asphalt residue after heated by rotating film were measured to evaluate the aging performance of asphalt.

TYPE 85 Asphalt oven

Model TYPE 85	
Voltage:	220 V ± 10%
Frequency:	50 Hz
Total power:	3.2Kw
Air supply:	4000ml / min
Turntable speed:	15 R / min
Can hold 8 sample bottles	
Service temperature:	163 ℃± 0.5 ℃
Working room size:	400 × 470 × 440mm
Instrument size:	71x62x88 CM
Weight:	60KG

TYPE 82 Asphalt oven

Model 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

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.

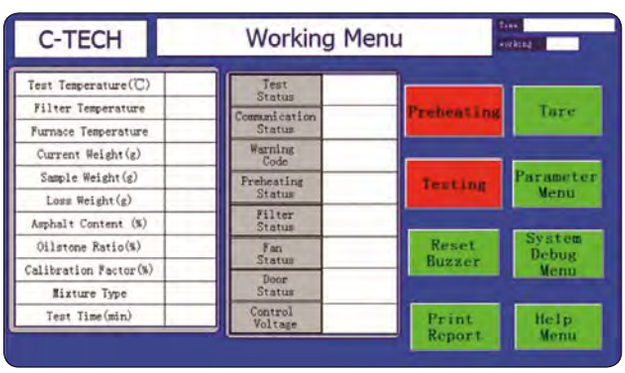
It is made of three parts: combustion device (furnace), weight measurement (electronic balance), test control and data processing (microcontroller unit).

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.

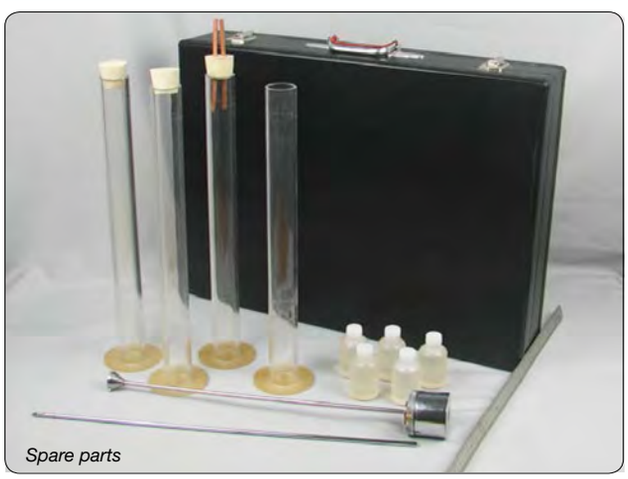
HYRS-6 asphalt content ignition oven

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

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	Portable 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

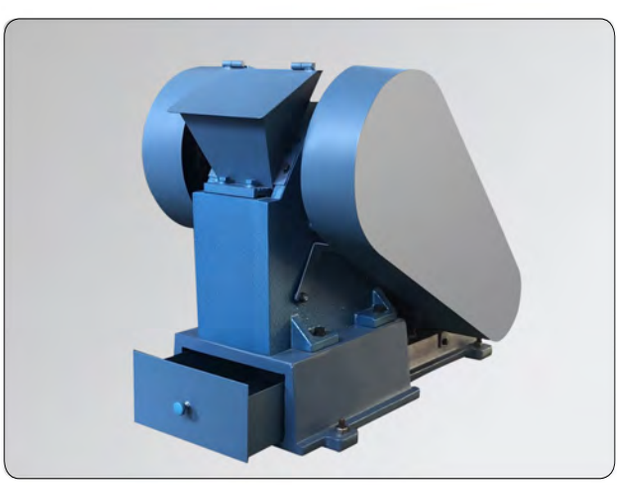
SCM-200 Double-Abrasive grinding machine

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.

Specification \ Model	JC-60	JC-100	JC-125
Opening(mm):	100x60	100x100	125x150
Max feeding size(mm):	≤ 50	≤ 80	≤ 100
Discharge opening(mm):	5-15	6-25	6-38
Capacity(mm):	600	600	285
Rotation speed(mm):	45-550	60-850	500-3000
Power(kw):	1.5	2.2	4
Dimension(mm):	1050x430x820	1050x430x820	1200x550x900
Weight(kg):	180	200	350

JC-60 Laboratory jaw crusher



JC-100 Laboratory jaw crusher

ROCK POINT LOAD TEST APPARATUS

STANDARD: ASTM D-5731

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.

Its pressure is indicated on the pressure gauge, model PL-02 is indicated directly on the digital readout unit.Loads up to 100 kN can be applied to specimens as large as 90 mm in diameter.

Model PL-02

Model PL-02

Max Load:	100kN
Pressure gauge range:	100Mpa
Max. specimen Height:	100mm
Max. specimen width:	90mm
Load measuring error:	≤1%F.S
Piston diameter:	dia.38mm
Pistion stroke	160mm
Dimension:	280x250x640mm
Gross weight:	35kg

CUTTING MACHINE

STANDARD: EN 1367-3

The sawing machine is one of the test apparatus required to perform the test and it is used to cut the rock piece to give test portions.

TBA-350

- **Strong power and high cutting efficiency;**
- **Upright legs, more stable cutting operation;**
- **Manual feed, flexible and convenient cutting;**
- **Self-priming pump, circulating water system, cutting water delivery is more environmentally friendly.**

Model TBA-350

Rated voltage:	230V/50Hz
Rated power:	2200W
Cutting materials:	block,brick
Max cutting depth:	90mm(90°) 50mm(45°)
Cutting length:	650mm
Rated speed:	2800rpm
Blade diameter:	350mm
Arbor size:	25.4mm
Cutting angles:	90°,45°
Weight:	72kg
Dimensions L x W x H:	1276x736x862 mm

Asphalt Mixture Shear Strength Test Cutting Machine

SYD-0850 Asphalt Mixture Shear Strength Test Cutting Machine is used to cut the test specimen that meet the requirements for T 0715 asphalt mixture bending test, T0718 asphalt mixture shear strength test, T0738 asphalt mixture uniaxial compression dynamic modulus test.

SYD-0850

Features

1. This instrument consists of two parts: the main machine of the cutting machine and the electrical control box.
2. Select the most suitable diamond saw blade according to the strength range and gradation composition range of the asphalt mixture;
3. The high-precision transmission system is adopted to ensure the cutting accuracy of the test piece; within the range of 0.15mm to 0.2mm;
4. Double blade design, the feed speed of saw blade is adjustable;
5. Changing the different sheet clamps can realize the function of cutting multiple test pieces, and the operation is simple and convenient;
6. Fully sealed protective cover, safe to use and low noise;
7. The whole cutting process is fully controlled by the controller.

Technical Parameters

Voltage:	AC(380±7%)V,50Hz
Cutting power:	4000W
Motor waterproof class:	IP65
Saw blade rotating speed:	3000r/min
Saw blade diameter:	ϕ470mm
Specimen:	Cube specimen thickness from 25mm to 150mm Cylinder specimen diameter of D100mm (Standard); Cylinder specimen diameter of D150mm (the clamping device should be ordered separately)
Total power consumption:	5000W
Working condition:	5~35°C/Relative humidity ≤85%
Net weight:	400kg
Overall dimension:	1800mm×1300mm×2100mm (cutting machine) 700mm×300mm×1200mm (controller)

LARGE CAPACITY SAMPLE SPLITTER

STANDARD: ASTM C702, EN 9221, UNI 8520

Sample Splitter very sturdily constructed with cadmium coated plated for rust protection. It is designed for the reduction of test sample which are too large in volume.
It handles any material from size up to 108 mm. Each chute bar is 1/2" wide. The opening start from 1/2", 1", 1 1/2", 2", 3" & 4" are possible.

Dimension 460 (L) x 723 (W) x 958 (H) mm
Approx. Weight 60 kg

CT0320 Large Capacity Sample Splitter

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

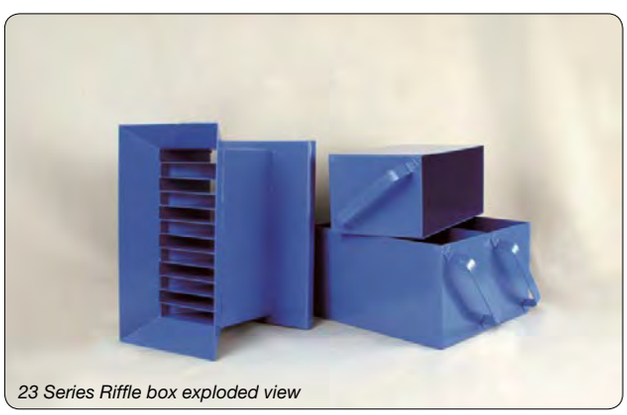
Model	
TPM-60	60
TPM-80	80
TPM-100	100
TPM-130	130
TPM-160	160
TPM-216	216
TPM-254	254
TPM-305	305

RIFFLE BOXES (SAMPLE DIVIDERS)

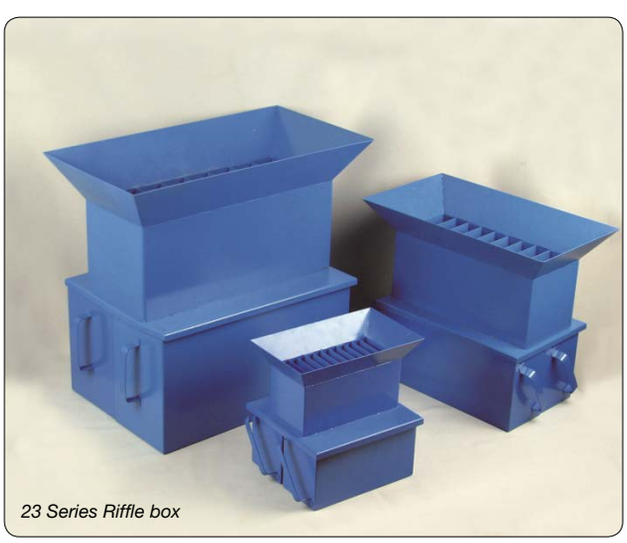
STANDARD: EN 932-1, 932-2 – ASTM C702

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.
Supplied complete with 3 metal pans.

Model	Max. size sample(mm) BS	EN	Slot width(mm)	No. of slots	Approx Capacity (kg)
23-3000	4.5	3.5	7	12	0.3
23-3050	8.5	6.5	13	12	2.0
23-3070	10.0	7.5	15	12	2.0
23-3100	12.5	9.5	19	10	4.0
23-3150	16.5	12.5	25	10	4.0
23-3170	20.0	15	30	10	4.0
23-3200	25.0	19	38	8	11.0
23-3300	33.0	25	50	8	14.0
23-3350	42.5	32	64	8	18.0



23 Series Riffle box exploded view



23 Series Riffle box

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 30kg/0.5g (optional)
- 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: 430g

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 Bottle

These borosilicate glass specific gravity bottles are accurately adjusted at 20°C to determine the density of liquid samples. While the joints have Standard Taper dimensions, the capillary stoppers are not interchangeable since the final adjustment for volume is made on the stopper. Each bottle and its stopper carry the same identifying number.

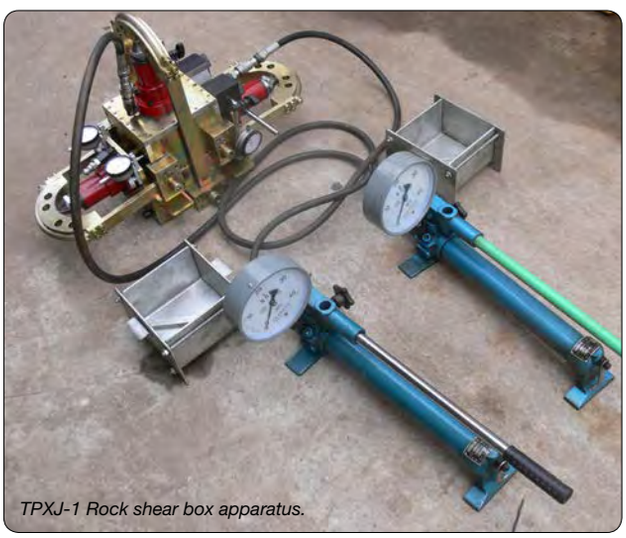
Code no.	Capacity
NR-07-5	5 (ml)
NR-07-10	10 (ml)
NR-07-25	25 (ml)
NR-07-50	50 (ml)
NR-07-100	100(ml)
NR-07-250	250 (ml)
NR-07-500	500(ml)
NR-07-1000	1000 (ml)

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)	120

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
Rated power:	400 W
Road wheel:	315 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

Accessories

- 48-D0525/1 rubber wheel

AGGREGATE IMPACT VALUE

STANDARD: BS 812 - NF, P18-574

This machine is used to deter-mine the aggregate impact value(AIV) which provides a relative measure of the resistance of an aggregate to sudden shock or impact. The machine is robustly designed and made from corro-sion-resistant steel. It is fitted with a counter to check the number of blows delivered to the sample and comes complete with two cylindrical measures (BS and NF) and a tamping rod.

Model 48-D0515	
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

impact counter

48-D0515 Aggregate Impact Value Apparatus

AC-150/AC-75 Aggregate Crushing Value Apparatus

AGGREGATE CRUSHING VALUE

STANDARD: BS 812-110, 111

Two versions of this apparatus are available: 150 (standard) and 75mm diameter; both sets comprise a cylinder, plunger, base plate, tamping rod and measure. The cylinder, plunger and base plate are made from special alloy steel, hardened to 650 HV (57.8 HRC), and protected against corrosion.

AC-150 Aggregate Crushing Value Apparatus comprising

AC-75 Aggregate Crushing Value Apparatus comprising

Technical specifications

AC-75	AC-150
Used for aggregate passing 9.5mm sieve	Used for aggregate passing 12.7mm and retaining on 9.5mm sieve (Ten Percent Flnes Value Test)
Steel Cylinder(ø78mm)	Steel Cylinder (ø154mm)
Plunger	Plunger
Tamping Rod (ø 8mmx300mm)	Tamping Rod (ø 16mmx600mm)
Measure (ø 57mmx90mm)	Measure (ø 115mmx180mm)
Base Plate	Base Plate
Weight:4.5Kg	Weight:25.3Kg

DETERMINATION OF FLAKINESS AND ELONGATION

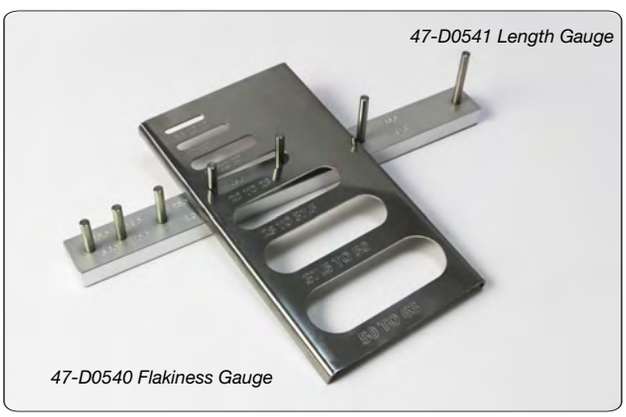
STANDARD: BS 812

47-D0541 Length Gauge

Used for determining the elongation index of aggregates. Aggregates particles are considered elongated when their length is more than 1.8 of their nominal size.
Dimensions: 310 x 30 x15 mm Weight approx: 1 kg

47-D0540 Flakiness Gauge

Used to determine if aggregate particles are to be considered flaky, i.e. their thickness is less than 0.6 of their nominal size. As alternative, for large sample analysis please refer to Flakiness sieves.
Dimension: 383x150x6 mm Weight, approx: 600 g
To evaluete the flakiness and the elongation index of the aggregates particles, suitable sieves codes 47-D0415/x .



47-D0541 Length Gauge

47-D0540 Flakiness Gauge

Bar sieves (Grids)

Used to determine the flakiness index of aggregates. Aluminium frame and steel bars.

47-D0418 Bar sieves

47-D0415 Flakiness Sieve

Aggregate particles are considered as flaky when their thickness is less than 0.6 of their mean sieve size. Aggregate to be classified is separated into seven sieve fractions from 6.3 to 63 mm and each fraction is examined separately. The dimensions of each sieve comply with the relevant International Standard, manufactured from heavy gauge steel sheet and coated with electrostatic paint.
The accuracy of the slot size is better than 0.1 mm.

Model	Slot Dimension	Model	Opening Dimension
47-D0415/1	4.9x30 mm	47-D0418/1	2.5 mm
47-D0415/2	7.2x40 mm	47-D0418/2	3.15 mm
47-D0415/3	10.2x50 mm	47-D0418/3	4.00 mm
47-D0415/4	14.4x60 mm	47-D0418/4	5.00 mm
47-D0415/5	19.7x80 mm	47-D0418/5	6.30 mm
47-D0415/6	26.3x90 mm	47-D0418/6	8.00 mm
47-D0415/7	33.9x100 mm	47-D0418/7	10.00 mm
		47-D0418/8	12.50 mm
		47-D0418/9	16.00 mm
		47-D0418/10	20.00 mm
		47-D0418/11	25.00 mm
		47-D0418/12	31.50 mm
		47-D0418/13	40.00 mm
		47-D0418/14	50.00 mm

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

SOIL SAMPLING

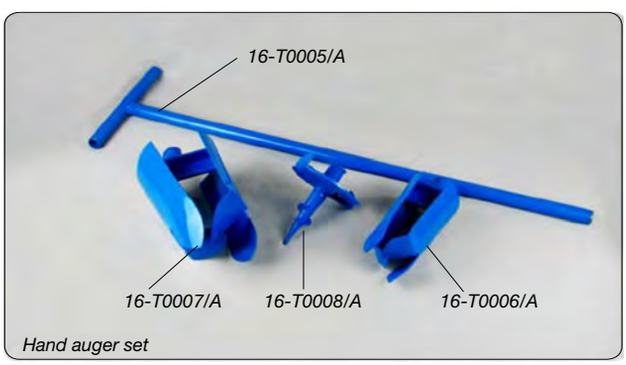
Hand Auger Set

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-T0005/A	T-handle with 1m rod
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	

SPEEDY MOISTURE TESTER

STANDARDS: AASHO T-217

SM-1000 Speedy moisture tester

The new speedy moisture tester quickly and accurately measures the moisture content in virtually any powder, mixes and pastes of soil, sand, clay or other granular material.

In a speedy moisture tester, the moisture in the test specimen reacts with calcium carbide reagent to form acetylene gas in the pressure chamber. The amount of gas formed, and the pressure created, is a function of the moisture in the specimen. The pressure gauge on the tester calibrated to directly read the percentage of moisture contained in the specimen.

The speedy moisture tester permit accuate testing of specimens in the field, with typical test times as short as a few minutes.

Each tester is supplied complete with balance, measuring spoon, cleaning cloth and brushes, calcium carbide reagent and aluminum alloy carrying case.

MODEL SM-1000	
Content	Main Body, Electric Balance, Sample Can, Spoon, Steel Ball(2), Brush
Total Weight	8kg
Dimension (L x W x H)	430 x 330 x 210mm
Sample Weight	20g
Sample Size	0.75''(20mm)
Measuring Range	0-20%
Electric Balance	0-300g

XY-105MW Speedy moisture tester

Model XY-105W 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.

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

SAND DENSITY CONE APPARATUS

35-T0129

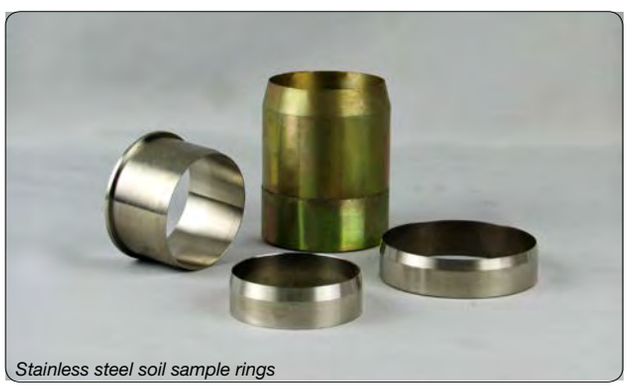
Sand Cone apparatus 6 inch(152 mm)
4 litre plastic container for sand cone(5L optional)
Base plate with 6.5 inch(165 mm) diameter hole

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



Stainless steel soil sample rings

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

LABORATORY HARDWARE

Spatula

The spatula is a broad, flat blade used to mix, spread materials including cement, soil, goods, drugs, plaster and paints etc. It has a stainless steel blade and a wooden or plastic handle.

Model	Blade length
SP-4	133 (mm)
SP-6	200 (mm)
SP-8	267 (mm)
SP-10	333 (mm)
SP-12	400 (mm)

PARTICLE SIZE DISTRIBUTION

STANDARD: BS 1377:2

Substantially the test is very similar to that one conforming the ASTM/AASHTO standards except for some specific test apparatus that are listed below.

Soil hydrometer, long stem. 0.995-1.030 g/ml. BS 1377/NF

22-T0062/A

LINEAR SHRINKAGE

STANDARD: BS 1377:2

Linear shrinkage mould

Internal dimensions:140mm long, 12.5mm radius
Weight approx: 300 g

22-T0037

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
- Spatula

Each item can be ordered individually.

DIGITAL LIQUID PLASTIC LIMIT UNITED DEVICE

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

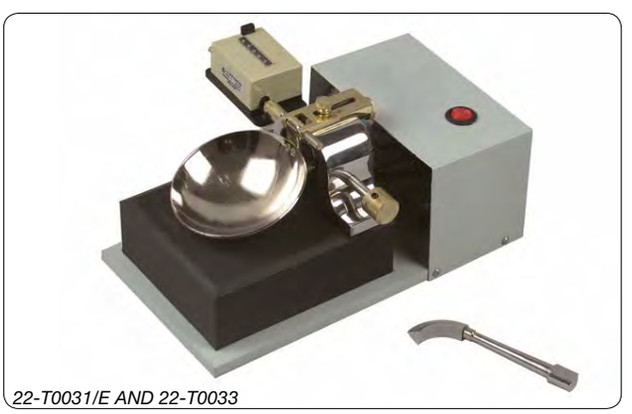
Max. measuring range:	40mm
Resolution:	0.01mm
Nonlinear error:	0.05mm
Cone weight:	76g+-0.1g; 100g+-0.1g
Cone angle:	30°+-0.2°
Sample cup:	internal dia. 50 x 40mm
Working voltage:	200V+/-10% 50HZ
Dimension :	300x230x420mm
Weight:	5.3kg

LIQUID LIMIT DEVICE

STANDARD: ASTM D4318/BS1377:2

Used to determine the moisture content at which clay soils pass from a plastic to a liquid state.

22-T0030/F AND 22-T0032/AP



22-T0031/E AND 22-T0033

22-T0030/E Liquid limit device, BS 1377:2 version
22-T0030/F Liquid limit device, ASTM D4318, AASHTO T89, UNE 7377, UNI 10014, version
22-T0031/E Motorized liquid limit device, BS 1377:2 version. 230 V, 50 Hz, 1 ph
Groovint tools need to be ordered separately.

Grooving tools and relevant Standards

Model	For liquid limit device	Standard
22-T0032/P (Plastic, pack of 10)	22-T0030/E 22-T0031/E	BS 1377:2
22-T0032/AP (Plastic, pack of 10)	22-T0030/F	ASTM D4318 AASHTO T89 UNE 7377
22-T0033	22-T0031/E	UNI 10014

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

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.

Model no.	Sand Pouring Cylinder	Calibration Container	Density Tray
SR-100	Dia. 110mm	100 mm x 150mm x 200 rim	Dia.100 mm central hole, 300 mm2 40mm height, galvanized steel
SR-150	Dia. 150mm	150 mm	Dia.150 mm central hole, 300 mm2 galvanized steel
SR-200	Dia. 215mm	200 mm x 250mm x 350 rim	Dia.200 mm central hole, 500 mm2 50mm height, galvanized steel

Sand Replacement Complete Set

VIBRATING TABLE METHOD RELATIVE DENSITY

APPARATUS

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.

33-T0063 Relative density of cohesionless soil test sets

EN 13286-5 standard:

33-T0063/3: Cylinder mould: dia. 280±1 mm

33-T0063/4: Guide sleeve: dia. 280±1 mm

33-T0063/6E: Surcharge base plate: dia.277mm

33-T0063/8E: Surcharge weight: for dia. 280±1 mm cylinder mould

ASTM D4253,4254 standard:

33-T0063/3: Cylinder mould: dia. 279.4±13mm

33-T0063/4: Guide sleeve: dia. 279.4±13mm

33-T0063/2: Cylinder mould: dia. 152.4±13mm

33-T0063/5: Guide sleeve: dia. 152.4±13mm

33-T0063/6: Surcharge base plate: dia.276mm

33-T0063/7: Surcharge base plate: dia.151mm

33-T0063/8: Surcharge weight: for dia. 279.4±13mm cylinder mould

33-T0063/9: Surcharge weight: for dia. 152.4±13mm cylinder mould

Model 33-T0063

Amplitude range:	0-2mm(adjustable)
Vibrator type:	electromagnetic
Table size:	600x800mm
Vibration time range:	0-99 Hours
Power:	220V, 1.5Kw
Net weight:	350Kg

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 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

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

FALLING HEAD PERMEAMETER

STANDARD: CEN ISO/TS 17892-11

Used to determine the permeability of fine-grained soils such as clay-like or silty soils. The specimen is confined within the per-meameter which is connected to the manometer tube filled with water. The sample must be completely satured with water before the test, and the operator will check the rate of fall of the water in the tube passing through the test specimen.

The set consists of :

TP246-01
Permeameter stand with three manometer tubes each Ø 3, 4 and 6 mm for the different degrees of permeability, soaking reservoir with cock, tubing and connectors.
Dimensions: 1700x220x50 mm
Weight: 10 kg approx.

TP252
COMPACTION PERMEAMETER
Ø4” complete

ALTERNATIVE:

TP253
COMPACTION PERMEAMETER
Ø6” complete

V230-03 RUBBER TUBING for vacuum, 3 m long.

PARTICLE SIZE ANALYSIS OF SOIL

APPARATUS

STANDARD: ASTM D422, AASHTO T88 / UNE 103.102

To determine the particle size distribution of very fine materials such as silt and clay. To perform the test the following apparatus is required which can be selected as single items or grouped in a complete set.

Comprises		Qty
TP 5024 X / 001 – P 001	Constant Temperature Water Bath c/w Heater & Circulating Pump 240 V, 1 ph, 50 / 60 Hz	1no.
TP 5024 X / 001 – P 002	Hydrometer Jar 1000 ml	6nos.
TP 5024 X / 001 – P 003	Hydrometer Jar Rubber Bung	6nos.
TP 7010 G / 001	Soil Hydrometer Long Stem 151H.0.995-1.038 g / ml	1no.
TP 7034 X / 018	Glass Thermometer 0 to 50°C x 0.5°C	1no.
TP 7002 G / 004	Glass Beaker with Spout 250 ml	1no.
TP 7029 CM / 003	Sodium Hexametaphosphate 1000 g / btl	1btl.
TP 5024 X / 001 – P 009	High Speed Stirrer, 10000 RPM c/w cup & Baffle 240 V, 1 ph, 50 / 60 Hz	1no.
ACCESSORIES AND SPARE PARTS: (need to be ordered seperately)		
TP 7029 CM / 002	Sodium Carbonate (1000 g)	

CONE PENETROMETER

Cone Penetrometer

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

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.

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

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.
MQS-2A can be used for doing CBR test, unconfined compression strength test and Marshall test. CBR mould and its accessories need to be ordered separately.

Model MQS-2

Max.rated loading:	100KN
Max.displacement distance for screw plate:	200mm
Mechanical speed:	high 50mm/min, low 1mm/min
Manual Speed:	0.2mm/each cycle of crank
Motor specification:	550W, 1400r/min
Dimension:	507x430x1390mm
Weight:	approx 120kg

MQS-2 Pavement Materials Strength Tester

Main functions MQS-2

- Display pressure and peak pressure value
- Save 30 group data
- Print 30 group pressure value and Peak pressure value(printer need to be ordered separately)

Main features MQS-2A

This machine uses advanced computer technology combined with high-precision sensor technology, easy to operate, accurate test data, and stable performance. The instrument is equipped with overload protection. The instrument automatically tests and records automatically. This host adopts two-column support and its mechanical structure is reasonable, so as to ensure the accuracy of the instrument.

Model MQS-2A

Load capacity:	0-50 and 0-200KN
Max.displacement distance for screw plate:	200mm
Electric speed:	high speed 50mm/min, low speed: 1mm/min
Manual Speed:	0.2mm/each cycle of crank
Power:	380V±10%, controller 220V±10%
Dimension:	920*680*1650mm (LxWxH)
Weight:	280kg

Packing list

- Host machine and controller;
- Two pieces S-type load cell: 0-50kN and 0-200kN;
- Two pieces displacement transducer;
- Two pieces 0-12.7mm/0.001mm digital dial indicator;
- CBR penetration rod and indicator support rod for CBR testing;
- Pressure head for Unconfined compression strength testing;
- Micro printer.

MQS-2A Pavement Materials Strength Tester

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

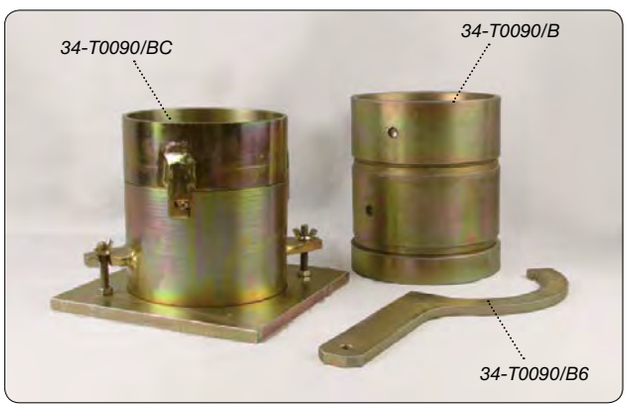
The equipment is manufactured from high quality, long-lasting material and with regular maintenance will give years of satisfactory performance.

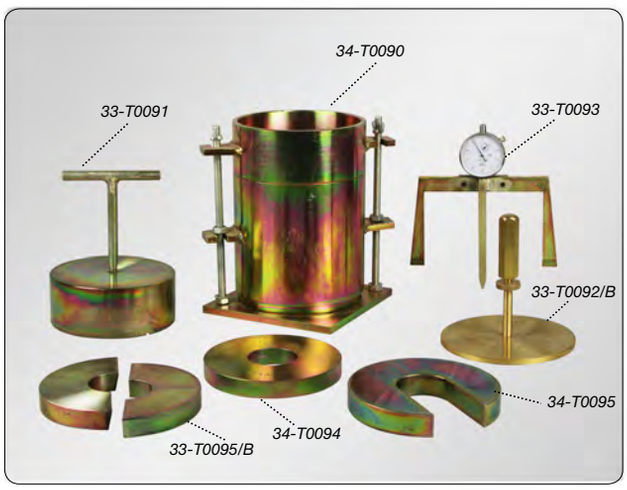
ASTM CBR Mould

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

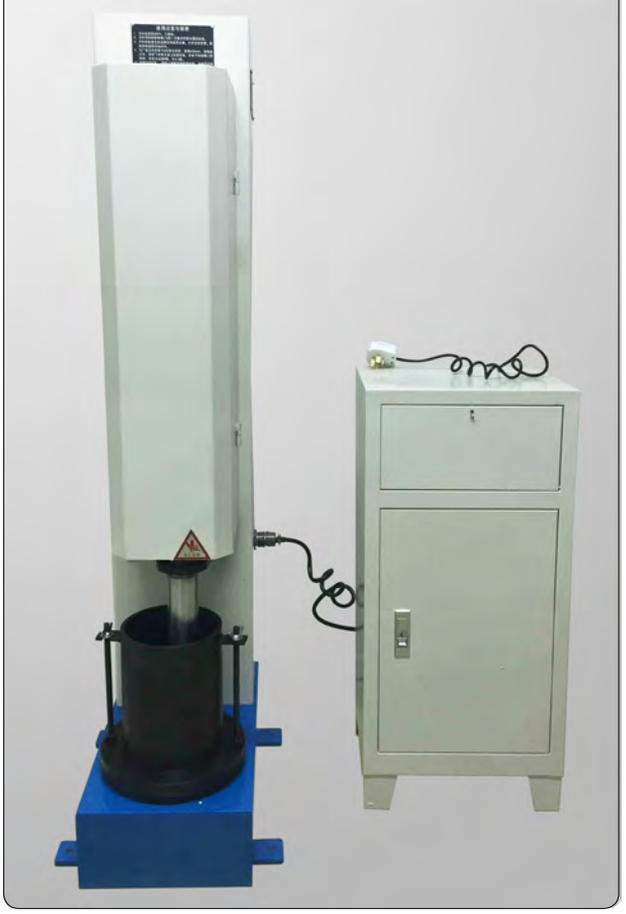
Multifunctional compactor

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

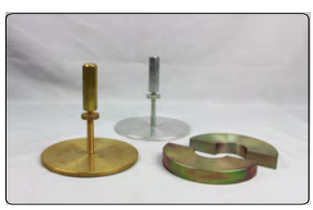
This machine is suitable for test of soils and mix materials (the grain size of the soil is less than 40mm) compacted with CBR mold so as to confirm the bearing loading ability of pavement, roadbed subcrust as well as material layer of the roadbed to be designed. It consists of a twin column frame, proving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

CTM-01 CBR Test Machine

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:	34 x 50 x 88 cm
Power:	380 V, 50 Hz ,150W
Weight:	82 Kg

CTM-02 CBR Test Machine



Model CTM-02

Maximum load:	50 KN
Load speed:	1.0 /1.27 mm/min
Penetration rod:	50 mm x 100 mm
Test mould:	152 mm x 170 mm
Load ring capacity:	50KN,0.001 mm div.incl
Instrument size:	34 x 45 x 88 cm
Instrument weight:	102 Kg
Power:	220V,50Hz,500W

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.

PLATE BEARING TEST APPARATUS

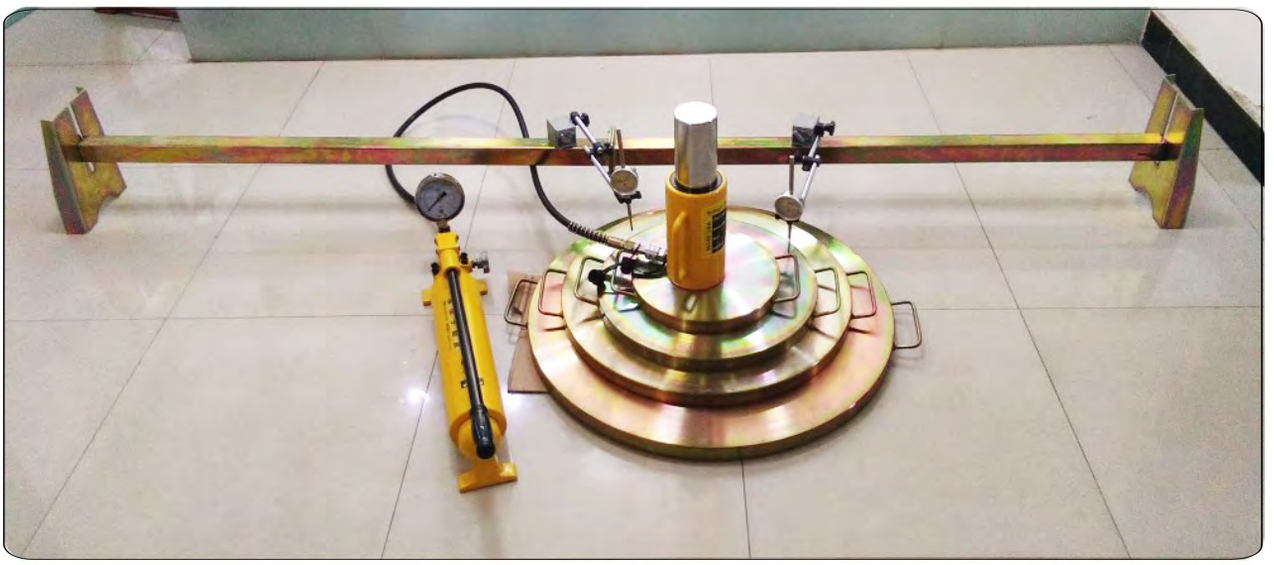
STANDARD:ASTM D1194, D1195, D1196 – BS 1377:9 –CNR NO. 92 AND NO. 146 – DIN 18134

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.

CTK-300 Plate bearing test apparatus



CTK-500 Plate bearing test apparatus

Model CTK-300	
Load plate diameter:	300mm
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

Model CTK-500	
Load plate diameter:	300mm, 450mm, 600mm, 750mm
Jack load capacity range:	0-500 kN
Jack Stroke:	150 mm
Measuring bridge span:	3000 mm
Hand pump rated pressure:	70 Mpa
Stress test range:	0-25 Mpa
Displacement measurement range:	0-10 mm

STATIC PLATE LOAD TESTER

This tester is used to determine the subsidence value of the roadbed under the static load, so as to evaluate the bearing capacity and deformation of the roadbed.

It is suitable for monitoring the quality of foundation construction of railways, highways, airports, urban transportation, ports, terminals and industrial and civil buildings subject to static loads.

After the ground is loaded and unloaded for the first time through the circular load bearing plate and the loading device, the second load is performed, and the measured stress σ of the load bearing plate and the corresponding center settlement value S of the load bearing plate are used to calculate The values of the deformation modulus Ev2 and Ev2 / Ev1.

Features

- Sensors and some components are imported, with high test accuracy and more reliable test data;
- Oil cylinder and manual pump imported from abroad, achieve outstanding pressure control and voltage stabilization performance;
- The displacement acquisition device adopts heavy-duty materials and a three-point support design, which has strong anti-seismic and wind-proof capabilities to ensure accurate data;
- LCD display in English interface, with backlight, it has better visibility in various environments.
- Ev1, Ev2 and Ev2 / Ev1 are automatically calculated and display curve.
- The hand-held main unit is equipped with a Bluetooth mini printer and directly printed on site to ensure the test results are accurate and objective.
- USB transmission interface is convenient for connection with computer.
- Voice prompt function makes operation more convenient.

Technical Specification

Application area	Application soil type	Various types of soil and earth-rock mixed fillers with a particle size not larger than 1/4 of the bearing plate diameter
	Test influence depth	0~500mm
	Working environment	Temp. -10℃~40℃ humidity <90%HR
Handheld main unit	Size	Screen size:3 inch Dimension:100×205×40mm Weight:0.8kg
	Storage capacity	400 group testing data
	Power supply	Large-capacity lithium battery, working time is more than 18 hours
	Display	Handheld main unit screen, switch display between Chinese and English interface
Sensor	Pressure sensor range	100kN
	Displacement sensor range	25mm, resolution 0.01mm
Data acquisition device	Loading plate	Diameter:300mm Thickness:25mm Weight:around 17.5kg
	Loading device	Hydraulic pump:capacity 100kN high-pressure hose:length 2m Plug-in pressure cylinder extension rod:1×40mm,1×90mm,1×120mm,1×160mm,2×60mm
	Settlement test device	Three-point support frame (with retractable, rotatable lever arm, adjustable base) Dimension: around 2320×570×420mm(LxWxH) Weight: around 12.5kg

DYNAMIC PLATE LOAD TEST APPARATUS

The dynamic deformation modulus measuring instrument (light-weight falling weight deflectometer) is used to determine the deflection capacity of the subgrade under dynamic load, thereby evaluating the bearing capacity and deformation of the subgrade. It is applicable to the monitoring and inspection of foundation construction quality of railways, highways, airports, urban traffic, ports, terminals and industrial and civil buildings subjected to dynamic loads. It is especially suitable for the detection of narrow sections of the site, such as the transition of roads and bridges (including) and the detection of shoulders, both line base and so on. It can quickly measure the dynamic deformation modulus Evd and so on.

EVD Light-weight falling weight deflectometer

EVD-W Light-weight falling weight deflectometer

Features

1. Imported sensors and some components are used, high test accuracy.
2. LCD display in Chinese and English, there is corresponding Chinese and English tips under different interfaces; with backlight, have better visibility in various environments.
3. The operation is simple, the test speed is fast, the detection takes only 35 seconds.
4. Automatically calculate the Evd value, and display the curve, accurate and intuitive.
5. hand-held mainframe, equipped with Bluetooth micro-printer, direct printing on site to ensure accurate and objective test results.
6. USB transfer interface for easy connection to a computer.
7. The instrument simulates the impact of the train on the roadbed when it is driven, and it can reflect the actual stress of the subgrade soil compared with the static load test.
8. Non-nuclear radiation and waste pollution, safe and environmentally friendly.

Technical Parameters

Model no		EVD	EVD-W
Application	Soil type	Various types of soil, earth and stone mixed fillers with a particle size not larger than 1/4 of the diameter of the load plate	
	Measuring range	10Mpa~225Mpa	
	Testing depth	0~500mm	
	Working condition	Temperature: -10℃~40℃ Humidity: ＜90%RH	
Loading unit	Loading device	Weight: 15kg, drop hammer weight: 10kg, free fall height: 700±20mm Max. impact force: 7.07kN Impact duration: 18±1ms	
	Load plate	Weight: 15kg Diameter: 300mm Thickness: 20mm	
Measuring instrument	Deflection measuring range	0.10mm~2.00mm	
	Storage capacity	2000 groups	Depending on Mobile's memory
	Specifications	Screen size: 3 inch Weight: 0.8kg Monitor dimension: 100x205x40mm	Screen size: 5 inch Weight: 110g Monitor dimension: 145x70x10mm
	Power supply	Lithium battery, working time is greater than 18 hrs.	Depending on Mobile's battery
Printer	Connection method	Wireless bluetooth printing	
Package	Main frame	Material: engineering plastic Diemsnion: 420x140x335mm Weight: 4.5kg	
	Overall packing	Material: aluminum alloy Dimension: 1220x395x380mm Weight: 56kg	

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

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

16-T0080 Hydraulic universal extruder

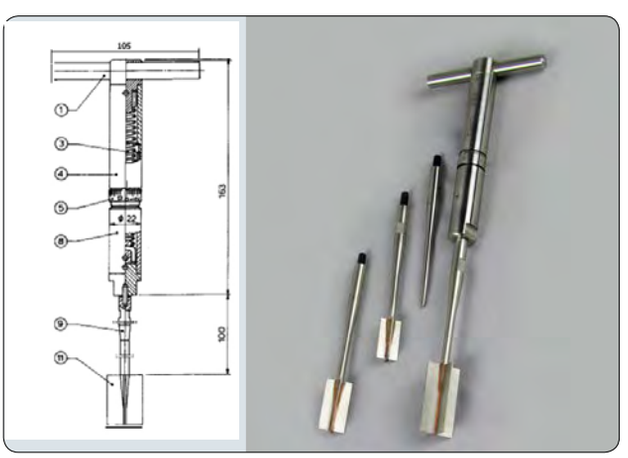
CT Electric universal extruder

POCKET HAND VANE TESTER

16-T0174 Field inspection pocket vane tester

STANDARD: ASTM D2573

The inspection vane tester is used to measure the in situ undrained shear strength in clays. It is primarily intended for use in trenches and excavations at a depth not influenced by drying and excavation procedure.
The range of the instrument is from 0 to 260 kPa when three different sized vanes are used. The accuracy of the instrument should be within 10% of the reading.
The measuring part of the instrument is a spiral-spring (3), (max. torque transmitted 38 kgcm). When the handle (1) is turned, the spring deforms and the upper part (4) and the lower part (8) of the instrument get a mutual angular displacement. The size of this displacement depends on the torque which is necessary to turn the vane (11). By means of a graduated scale (5) the shear strength of the clay is obtained.
The lower and upper halves of the instrument are connected by means of threads. The scale (5) is also supplied with threads and follows the upper part of the instruments by means of two lugs. The 0-point is indicated by a line on the upper part (4). When torque is applied, the scale-ring follows the upper part of the instrument and when failure is obtained, the scale-ring (5) will remain in its position due to friction in the threads.



Spare parts

- 16-T0174/1 Spring torque meter 1 pcs
- 16-T0174/2 Extension rod 6 pcs L=0.5 m, 0 = 10 mm
- Vane 3 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-T0174/3 Dummy 1 pcs
- 16-T0174/4 Spanner 8mm and 17mm each 1 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 aluminum.
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 alloy carrying case
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 with carrying case

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.

Packing List

Model No.	Description	Quantity
PY0101	Instrument host	1
PY0213	Reducing valve	1
PY0212	Air source tube	1
PY0206	25m impulse pipe	1
PY0209	Pressuremeter elastic membrane	15
PY0208	Nylon tube bushing	20
PY0202	Seal ring	20
PY0201	Dia. 8×1.9 mm O ring	50
PY0203	Nylon sheath	5
PY0401	Spare tools	1
PY0301 PY0303	Pressure test hole driller	1
PY0302	Reducer union	1
PY0204	Outer protective membrane	3
PY0215	AP pressuremeter	2
PY0216	Organic calibration tube	1
PY0217	Stainless steel calibration tube	1
PY0218	Inflator	1
PY0219	Tripod	1

STATIC CONE PENETROMETER

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

JTY-3A CPT Data Acquisition System

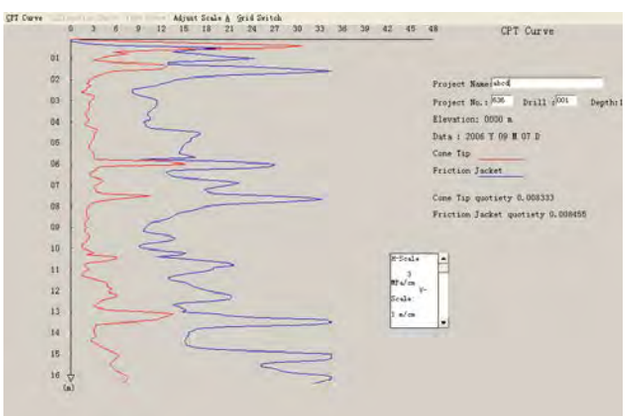
Model JTY-3A Data Acquisition System

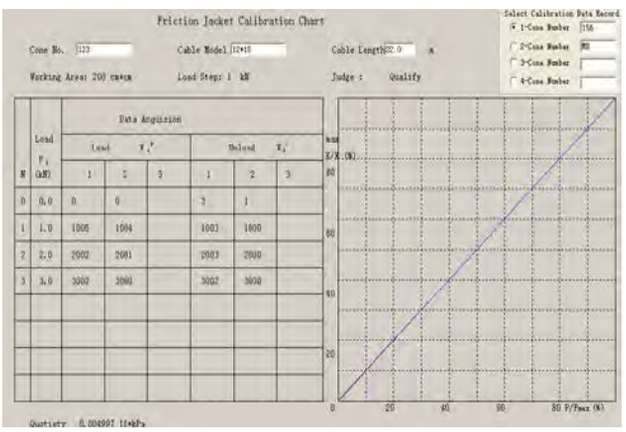
Qc,Fs collection value error	<1%
Output voltage	7.4V
Charging voltage	AC220V or DC12V
High-energy battery capacity	4Ah
Charging current	450mA
Charging time	13 hours, can collect data for 8-10 hours
Single-hole acquisition depth	<= 100m
Storage Hole Data	1000
Storage data(double bridge)	1500-5600m
Package dimension	320 x 240 x 135mm

Features and Functions:

- High density (10 points / m or 16 points / m) acquisition of quasi-double bridge or single bridge Qc (Ps), Fs value, cross plate Cu value.
- Large-screen liquid crystal display technology, real-time display conical curve and the side wall curve, the proportion of self-selection to adapt to different formations. Screen size: 97mm x 77mm.
- Large-capacity chip storage technology, the instrument can store 1500-5600m double-bridge static exploration data and probe rate data, the data stored in the instrument for more than a year.
- With the function of curve echo, you can select any one of the hole number in the instrument quiescent curve, displayed on the screen, help surveyors to adjust the program.
- Continue to collect, you can call any curve stored in the instrument to continue to collect the design depth.
- One-hole delete or delete all the instruments in the quest to release the necessary memory space.
- Data editing function, you can call out the instrument has been stored in any of the hole curve data, edit and modify.
- Backlight display, especially suitable for night or dark light environment homework.
- Memory limit exceeded, to ensure the safe data collection.
- Manual zeroing, auto-zeroing are optional. When the auto-zeroing is performed, the software automatically warps the data (referring to the probe).
- English menu prompts.
- Equipped with USB port and RS-232 standard serial port to generate text type data files for communication with PC computer, which can be used for mapping or further data processing by engineering geological survey software package.
- Parallel port on the instrument, connect the printer, direct print of the probe curve or data, aspect ratio can be selected.
- External DC12V power supply to ensure that the instrument field work time.
- Alarm function, user can set the cone tip and the side wall alarm value.

Software interface



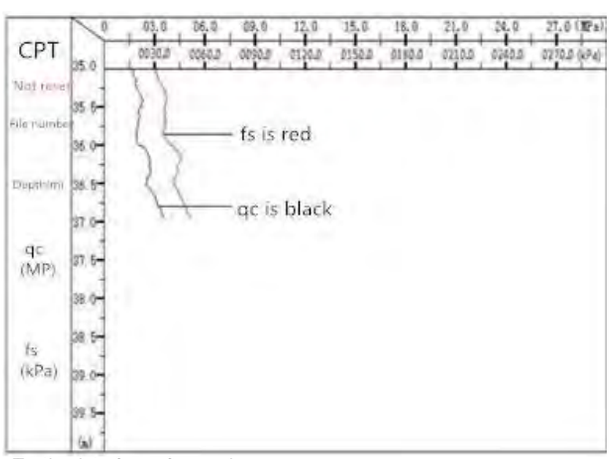


STATIC CONE PENETROMETER

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

Model DN-W1 Data Acquisition System

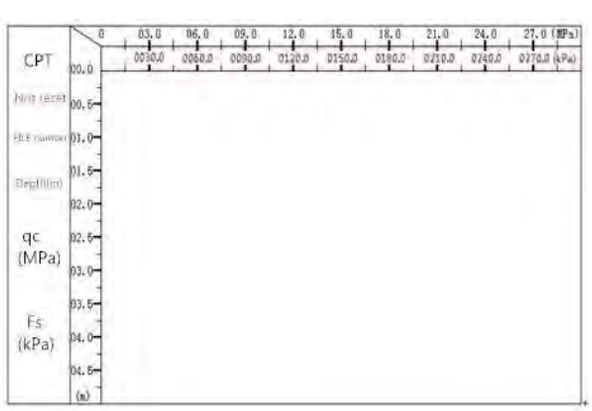
Display	7-inch LCD.
Three differential input channels	-20mv to +20mv.
The linear error of instrumentation measurement system	<=± 0.1%
The depth of sampling interval:	10cm
maximum record depth of single hole	99.9m.
data storage capacity	4096 storage space, up to 1024 data storage
maximum number of holes:	350
batteries of machine	2W
external voltage	2.5W
Internal voltage:	7.4V, 5200mA lithium battery
Size of the host:	268 x 168 x 45 (mm)
weight the host :	about 960g.



Testing interface of rerunning

Features and Functions:

- Adopt 16-bit micro-controller MSP430F5437A as the CPU of DN-W1, which is well-known as low power consumption and high performance.
- Adopt large size color TFT HD-LCD, where data and figures are quite clear.
- Adopt high-speed and memory Flash storage.
- Adopt low-power A/D converter with 24-bit resolution.
- Set USB interface on the model, from which the data can be read on the machine directly and other computers easily.
- Adopt high-strength ABS engineering plastic molding shell.
- Set three sampling channels and three test data can be obtained simultaneously.
- Adopt high-capacity lithium battery which is suitable for long time operation in the field.
- Main functions and based codes
- DN-W1 model microcomputer is used to receive data from various sensors and/or probes in the in-situ test, process, store, display and print results. The DN-W1 model microcomputer has the following functions,
- The microcomputer can be used for CPT, CPTU and VST.
- The microcomputer can be used for Calibration of probes of CPT, CPTU and VST.
- The microcomputer can represent a variety of test data in different colors.
- The microcomputer can achieve automatic zero setting with the A/D converter.
- The microcomputer can record the testing data at an interval of depth or time period.
- The microcomputer can store the testing data in a flash disk, and the data can be read on the machine directly and other computers easily.
- The data stored by DN-W1 model can be printed by connecting to a computer. Calibration record table and calibration curve of various probes.CPT data, CPTU data and VST data. Various test results (Ps., qc,fs,u,Cu,) with depth or time.



Initial interface of rerunning CPT

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	16MPa
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

TPC-20L/ TPC-25L

CPT Cone

1. linear, hysteresis error is less than 0.8% F.S; zero, repeatability error is less than 0.5% F.S.
2. When the probe working, the internal interference between several sensors is less than 0.3% F.S.
3. Operating temperature range: -10℃~45℃。
4. Temperature zero drift value: 0.05% / F.S.
5. Rated overload capacity: 120% R.L.
6. Seal insulation performance: to ensure 6 hrs in 2 MPa water pressure, bridge insulation resistance is greater than 200MΩ.
7. Volume change rate of permeable cavity is less than 0.10%.
8. The bridge resistance of each sensor is 350Ω.

Type	Dimension	Appliation	Measure range(Ton)
Cone-01	10cm^2	Ps	0-1.5T/2T/3T/4T
	15cm^2		0-2T/3T/4T/5T
Cone-02/A	10cm^2	Qc, Fs	0-2T/3T/4T/5T
	15cm^2		0-3T/4T/5T/6T/10T/12T
Cone-02/B	10cm^2	Ps, U	0-2T/3T/4T/5T
Cone-03	10cm^2	Qc,Fs, U	0-2T/3T/4T/5T

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 of TPC-15W/20W/25W

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
	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

Drag type CPT Machine is developed on the basis of the current domestic commonly used bulk hydraulic two-cylinder static penetration testing machine, it absorbs the advantages of the structure of the bulk hydraulic static testing machine, light and flexible, easy to operate. With the advantage of large-scale static probe vehicles that can be easily transported over long distances, a trailer-mounted chassis is set up, and the dispersed components are arranged in an orderly manner, thereby reducing labor intensity and improving work efficiency.
In addition to the conventional static penetrating test, it can also be subjected to tests such as flat scoop swell test, field cross-plate shear test, wave velocity test, hole pressure multi-function static probe and so on. test.

Model TPC-15 T/TPC-20T

Max force:	150kN, 200kN
Drive:	Diesel Engine, Electric starting
Dimension(mm):	2800×1560×1500mm
Weight:	2000Kg

HYDRAULIC STATIC CONE PENETROMETERS

Bulk series Specification

Model	Rated penetration force (KN)	Pull out 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

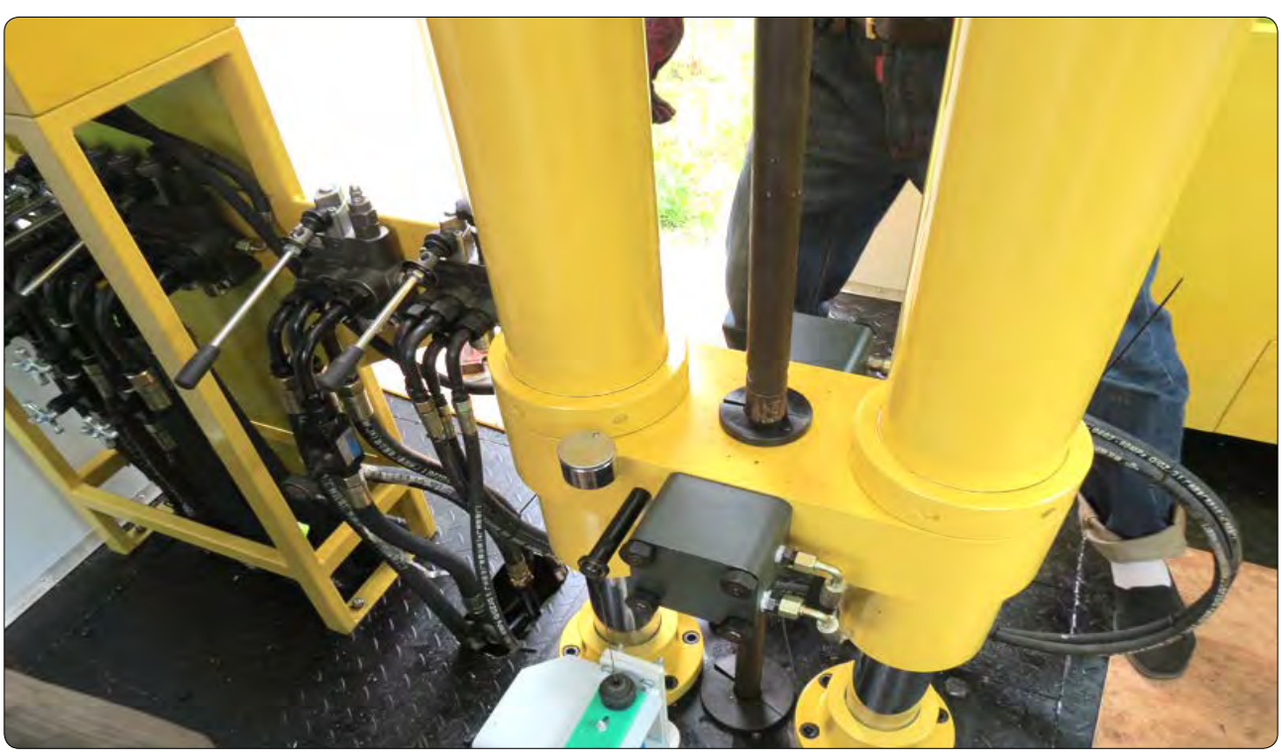
TPC-25X CPT Truck

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.



COLOUR CHARTS

STANDARD: ASTM C40

16-D1860/D Color standard glass scale

Used for determining the organic impurities in fine aggregates by the colorimetric method together with the organic impurities test bottles. 5 colored glass mounted in plastic holder.

Weight: 150g (approx.)

16-D1860/B Soil Colour charts

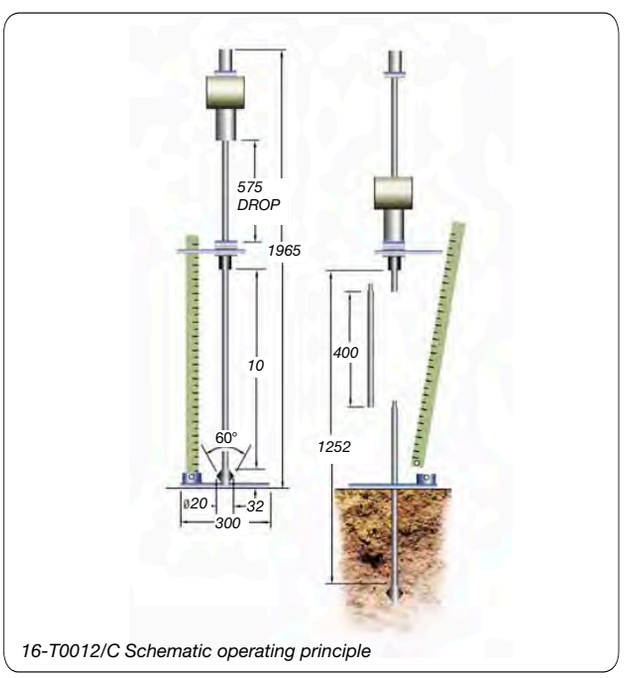
Using Munsell Soil Colour Charts is an affordable way of evaluating and classifying soil colour in the field and in the laboratory.The soil classification method that has been developed around the Munsell colour system is an established and accepted way of building accurate soil descriptions.

Dimensions:200x120x60mm
Weight: 500g (approx.)

DYNAMIC CONE PENETROMETER

STANDARD: ASTM D 6951-03

16-T0012/C Dynamic Cone Penetrometer



16-T0012/C Schematic operating principle

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.

COMPRISES:	
16-T0012/C1	Sliding hammer (steel made) weighing 8 kg
16-T0012/C2	Impact anvil driving rod and clip, falling 575 mm
16-T0012/C3	Steel rod, diameter 16 mm, up to a depth of 800 mm below the surface
16-T0012/C4	N° 3 threaded end cones in tempered steel,20 mm diameter, 60° cone angle
16-T0012/C5	Bearing plate and measuring rod with adjustable scale (graduated in mm)
16-T0012/C6	Aluminum alloy carrying case
Dimensions:	1080x310x150mm
Weight:	22kgs
ACCESSORIES AND SPARE PARTS: (need to be ordered seperately)	
16-T0012/C7	Extension rods: 400 mm, dia. 16mm

DYNAMIC CONE PENETROMETER

STANDARD: BS1377

MPA-1

Mackintosh probe test is most widely used in situ test to measure the soil bearing capacity of different layers in terms of N value. This test is very useful to find out the bearing capacity of soil upto 18 meter. One set of Mackintosh Probe equipment was used to investigate the bearing capacity of the untreated peat soil. Mackintosh Probe equipment (Plate 1 a) consists of a series of 15 mm diameter steel rods. The length of each rod is 1.20 m. A 25 mm diameter and 60 degree cone screwed onto the lower rod driven into ground by a 4.5 kg hammer faling freely through a height of 300 mm onto an anvil. The number of blows require for every 300 mm penetration is recorded.

Packing List:	
penetration rod(47¼ inch each)	13 nos;
coupling	13 nos;
pipe wrenches	2 nos;
penetratio cone	2 nos;
hammer nut	2 nos;
hammer	1 nos;
lifting handle	1 nos;
heavy duty carrying case	1 nos;

DYNAMIC CONE PENETROMETER

MANUAL DYNAMIC PENETROMETER

16-T0012/E 9 kg hammer, 51cm/60cm. fall

Standard: AS1289.6.3.2&AS 1289.6.3.3

Model 16-T0012/E FEATURES:

- It is tough and robust having been well proven in the field over many years.
- It is supplied with a reversible 'Top Nut', enabling it to be used in the standard configuration (as it is supplied) or easily changed over to the Perth Sand Penetrometer configuration.
- 'DCP Kit' comprises all the equipment and tools required to carry out a DCP test and all parts are designed to be replaceable on an individual basis (see parts list).
- One year warrantee against any manufacturing defects.

COMPRISES:	
16-T0012/E1	Reversible top nut
16-T0012/E2	Sliding rod
16-T0012/E3	Hammer, 9kg
16-T0012/E4	Anvil
16-T0012/E5	Bolt
16-T0012/E6	Helmet
16-T0012/E7	Upper attachment for scale
16-T0012/E8	Adjustable scale (graduated in mm)
16-T0012/E9	1m extension rod
16-T0012/E10	Bearing plate
16-T0012/E11	Standard DCP cone
16-T0012/E16	Spanners to suit Rods and Helmet
16-T0012/E17	Portable carrying case
16-T0012/E13	Rod extraction
ACCESSORIES AND SPARE PARTS: (need to be ordered seperately)	
16-T0012/E12	Perth penetrometer tip
16-T0012/E14	1m extraction rod
16-T0012/E15	1.5m extraction rod

DYNAMIC CONE PENETROMETER

DYNAMIC CONE PENETROMETER (DCP)

K-100 8 kg hammer, 57.5 cm. fall

Standard: ASTM D 6951-03

K-100 Dynamic Cone Penetrometer

Model K-100 FEATURES:

- This application describes measurement of the penetration rate of the model K-100 DCP(dynamic cone penetrometer)with a single mass or dual-mass.
- The K-100 Standard Kit measures the shear strength of soil with a CBR between 0.5-100. Affordably priced, this kit is for local engineers and geotech firms. With it the user can produce CBR value profiles in the field. It comes with a 30" drive rod (actual penetration depth 28 1/4"), 25 disposable cones and a cone adapter for fast and easy extraction of the instrument from hard soil.
- Additional disposable cones, cone adapters, and hardened points are available.
- One year warrantee against any manufacturing defects.

COMPRISES:			
K100	Upper assembly (Stainless Steel) includes:	K012	DCP User's Manual
K103	Quick-Connect Upper Rod	K450	Pins with Clips, 2 per package
K102	Handle	K500	Vertical Scale, 40"
K200	Dual Mass Hammer	K510	Foot for Vertical Scale
K1330	Drive Rod 30" Stainless Steel with end cap	K530	Upper Attachment for Vertical Scale
K420	Hex Key, 1/4", "Allen" Wrench Type	K700	Reusable Hardened Point
K430	3-in-ONE Oil	K800	Adapter for Disposable Cones
K445	Wrenches 9/16", open end, black	K900	Disposable Cones, Pkg of 25
K011	CD of DCP User's Manual & Excel® Template	P-1720	Alloy Aluminum Carrying Case
ACCESSORIES AND SPARE PARTS: (need to be ordered seperately)			
K133775	37.75" Drive Rod (Penetration to 35.75") (Stainless Steel) with end cap	K1348	Stainless Steel 48" Drive Rod
K1312	12" Drive Rod for use with 24" Extension Rods	K1348S	Extra Strong 48" Drive Rod
K1724	Extension Rod 24" for use with 12" Drive Rod in weak soil	K133775S	Extra Strong 37.75" Drive Rod

DYNAMIC CONE PENETROMETER

MANUAL DYNAMIC PENETROMETER

16-T0012/B 10 kg hammer, 50cm. fall

Standard: DIN 4094 LRS10 uni env 1997-3

Model 16-T0012/B FEATURES:

- Portable, hand-operated equipment.
- To obtain a direct evaluation of the “in-situ” strength properties of road pavement layers: the DCP has been correlated with CBR (California Bearing Ratio - Kleyn 1975).
- Field calibration of a portable dynamic cone penetrometer was made to determine a penetration resistance relationship with the standard penetration resistance.
- The penetrometer has been found useful in the inspection of footing foundations and for light field exploration where the standard penetration range of limits is generally known
- One year warrantee against any manufacturing defects.

COMPRISES:	
16-T0012/B1	Hammer, 10 kg
16-T0012/B2	Anvil with rod and full travel impact plug, 6 kg
16-T0012/B3	11 threaded sounding rods dia. 22 mm x 1000 mm long
16-T0012/B4	Drive conical point, 500 mm^2 area, 25.2 mm dia, 90° angle
16-T0012/B5	Drive conical point, 1000 mm^2 area, 35.6 mm dia, 90° angle
16-T0012/B6	Base plate with seating for scale
16-T0012/B7	Rule graduated in mm, 1 m long
16-T0012/B8	Lever device for rod extraction
16-T0012/B9	Steel carrying case
Dimensions:	1080x310x150mm
Gross Weight:	85kgs
ACCESSORIES AND SPARE PARTS: (need to be ordered seperately)	
16-T0012/C7	Extension rods: 400 mm, dia. 16mm
16-T0012/B10	Spare expendable conical point, 1000 mm^2 area, 35.6 mm dia, 90° angle

DYNAMIC CONE PENETROMETER

MOTOR OPERATED DYNAMIC PENETROMETER
16-T0012/D 20/30 kg hammer, 20cm. fall

Standard: DIN 4094 LRS10 uni env 1997-3

Model 16-T0012/D FEATURES:

- The apparatus comprises a 4 stroke engine which drives, through a flexible shaft, the lifting mechanism, a 20 kg weight, a 10 kg supplementary weight, 10 rods, 5 cones each of 500 and 1000 mm2 size, and rod lifting device.
- Accessory 16-T0012/D7 Tripod to make easier the use of the apparatus.
- 1.9 kW 4 stroke engine
- Driving rate: up to 45 blows/min
- One year warrantee against any manufacturing defects.

COMPRISES:	
16-T0012/D1	Hammer, 20 kg
16-T0012/D2	10 kg supplementary weight
16-T0012/D3	Drive conical point, 500 mm^2 area, 25.2 mm dia, 90° angle
16-T0012/D4	Sounding rod 22mm dia.
16-T0012/D5	4 stroke engine
16-T0012/D6	Lever device for rod extraction
16-T0012/D7	Tripod for hanging the lifting mechanism. including 16-T0012/D6,16-T0012/D7 and 16-T0012/D8 Max. height 2300mm; Weight approx: 18 kg
16-T0012/D8	Hand winch
16-T0012/D9	Hook
16-T0012/D10	Height adjustment lever
Weight:	70 kg approx. (without sounding rods and accessories)

DYNAMIC CONE PENETROMETER

PNEUMATIC DRIVEN DYNAMIC PENETROMETER

16-T0012/P 10/30 kg hammer, 50cm. fall

Standard: ISO 22476-2, DIN 4094-3

16-T0012/P1

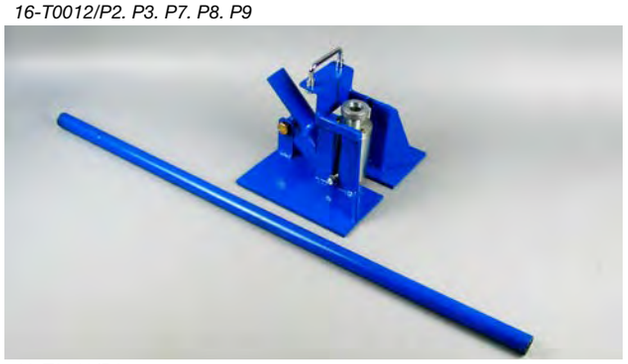
Model 16-T0012/P FEATURES:

Pneumatic DPL and DPM testing set is suitable for doing light (10 kg) and medium-heavy (30 kg) dynamic penetration tests according to ISO 22476-2 (replaces DIN 4094-3).

This pneumatic DPL and DPM testing set is a cost effective, simple and reliable tool suitable for light dynamic penetration testing up to approx. 10 - 12 m depth. It comprises of a pneumatic power-pack with a four stroke gasoline engine and maintenance-free air-compressor all integrated in a sturdy framework with carrying handle and a solid hammering unit with integrated air-cylinder. The unit holds a 10 kg (and an additional 20 kg) drop-weight, falling height 50cm and a fully automated pressure release valve, approx. 20 blows per minute. The air is led through the tubes of the framework where it can loose most of its warmth. It is provided with a holder for the connection piece that goes on to the upper sounding tube.

Total net weight is 130 kg approx. (with sounding rods and accessories).

16-T0012/P2. P3. P7. P8. P9



16-T0012/P6

COMPRISES:

16-T0012/P1	Portable compressor set with Briggs & Stratton gasoline engine and integrated air cooling.
16-T0012/P2	Sounding tube (dia.22 x 1000 mm) with depth indication every 100 mm 12pcs
16-T0012/P3	Threaded nipple M16 for sounding rod (22mm)12pcs
16-T0012/P4	Open ended spanner 19 mm – Heavy duty design for 22 mm sounding tubes
16-T0012/P5	Allen key M8 for threaded nipples M16
16-T0012/P6	Manual rod puller with football and lever
16-T0012/P7	Conical sounding tip of tempered steel - 5 cm^2, M16 connection 2pcs
16-T0012/P8	Conical sounding tip of tempered steel - 10 cm^2, M16 connection 2pcs
16-T0012/P9	Conical sounding tip -10cm^2 -single use type 20pcs
optional parts:	
16-T0012/P1	20kg drop weight 1pc
16-T0012/P2	Sounding tube (dia.32 x 1000 mm) with depth indication every 100 mm 12pcs
16-T0012/P3	Conical sounding tip of tempered steel - **15**cm^2, M16 connection 1pcs

LOAD RING PENETROMETER

Model 33-T0166

Used for measuring the bearing strength and compaction degree of soils. The apparatus consists of a “T” shaped handle connected to a load ring 1 kN (100 kgf) cap., with max load pointer, and of an extension rod with five 100 mm graduations. The 30° end cone has an area of 645 mm^2 (I sq. in). Supplied complete with calibration chart.

Weight approx.: 4 kg

Carry box size:Length 920 width 240 height 140(mm)

Model 33-T0166

PROCTOR PENETROMETER

Model 33-T0165

Used for establishing the moisture content-penetration resistance relationship of fine-grained soils.
It consists of a special spring dynamometer with pressure indicating scale on the stem of the handle. A sliding ring on the stem indicate the maximum pressure obtained in the test.
Supplied in a wooden carrying case.
Technical specifications:

- Load scale: 0 to 55 kg, 1 kg subdivisions with max load indicator
- Diameter of interchangeable needles: 28.55, 24.79, 20.22, 16.54, 12.83, 9.07, 6.40, 5.23 and 4.52 mm
- Weight approx.: 3.5 kg

Model 33-T0165

POCKET PENETROMETERS

Designed for making field classification of cohesive soils in terms of consistency, shear strength and approximate unconfined compressive strength.

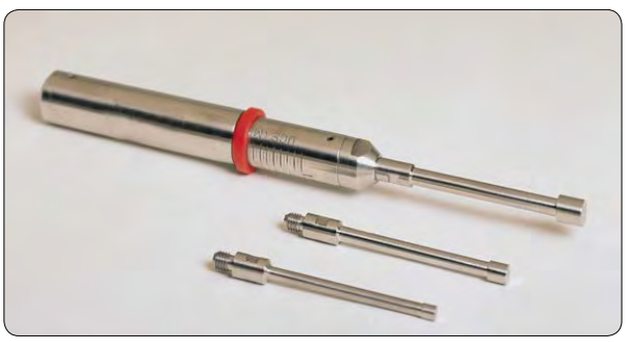
Two models available:

16-T0171 Standard model, measuring range 0 to 4.5 kgf/cm^2. A special 1in-diameter adapter foot is available as an option for use in very sensitive soils.
It is constructed from anodized aluminum and measures 6-1/4"Lx 7/8" dia. Use an Allen wrench to loosen the stainless steel pin for cleaning.

Model 16-T0171

16-T0163 Heavy duty model, all stainless steel construction, three interchangeable tips: 4.5 mm dia. for very hard soil, 6.35 mm for medium and soft soil, 8.98 mm for soft soil. Supplied complete with plastic case. Measuring range: 0 to 10 kgf/cm^2
Dimensions (assembled): 210 mm length x 20 mm dia. approx.

Weight approx.: 0.5 kg



Model 16-T0163

POCKET DIAL PENETROMETERS

Three versions available:
16-T0160 and **16-T0162** respectivety for soft soil and medium/hard soil;
16-T0161 complete with 5 different plungers used to evaluate the angle of internal friction “j” of sandy soil and the cohesion “c” in clay soils.
They all include a peak hold feature with 0 setting by push button.
Technical specifications:

Models	Scale [kgf/cm2]	Plunger (Tip) dia. [mm]
16-T0160	0-6	6.35
16-T0162	0-14	6.35
16-T0161	0-6	6.35, 10, 15, 20, 25

Dial diameter: 60 mm
Weight approx.: 300 g

Model 16T0160/16-T0161/16-T0162

WATER LEVEL INDICATOR

The measurement of the water level by the following two parts:
Underground part: composed by water level pipe and bottom cover (not include in the system, it is need purchased separately).
Ground receiver:composed by detect head, ruler cable, receiver system and cable reel.
Battery operated: 9 V DC

Model	Depth of the measurement	Weight	Package dimensions
WLM-50	50m	4.5kg	38x28x50cm
WLM-100	100m	6.5kg	38x28x50cm
WLM-200	200m	11kg	38x28x50cm

Model WLM-50/WLM-100/WLM-200

VIBRATION COMPACTION HAMMER

BS 1377:4 | BS 1924:2 | EN 13286-4
Used for the compaction of Proctor and CBR soil specimens. Using the appropriate tamping foot it can also be used for compacting asphalt in the “Percentage refusal density test”.
Power: 950 W
Full load impact rate 2800 bpm
Overall dimensions (wxdxh): 130x530x380 mm
230 V, 50-60 Hz, 1 ph
Weight approx.: 6.4 kg

STANDARD DELIVERY:	
33-T8701	Vibration compaction hammer complete
33-T8702	Vibrating hammer.230 V,50-60 Hz,1 ph
33-T0087/B	Supporting frame for vibrating hammer
33-T0087/6	Small tamping foot, 102 mm dia., head
33-T0087/7	Large tamping foot, 146 mm dia., head
33-T0087/8A	Shank, 300 mm long

Model 33-T8701

STANDARD PENETRATION TEST

FEATURES:

The Auto matic Trip Hammer is manufactured for complying with the Standard Penetration Test (SPT) to BS1377:Part9:1990. SPT Drive Rods and a Split Tube Sampler are connected to base of the anvil, and driven into the ground by the falling weight. The Automatic Trip Hammer comprises a weight of 63.5kg complete with pick-up and selftripping mechanism that ensures that the weighthas a free-fall of exactly 760mm. 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. 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 2.6m extended and 1.8m when unextended.The total weight of the hammer is 107kg.

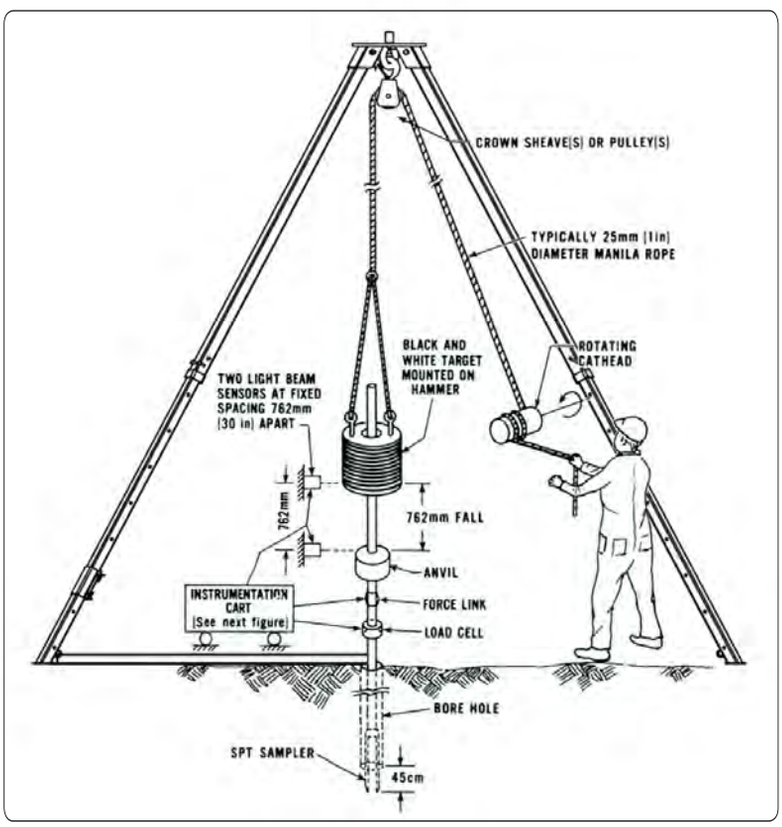
There are three models for selection as follows:

SPT-E: Motor hoisting machine driven

SPT-P: Petro engine driven

SPT-M: Manual driven

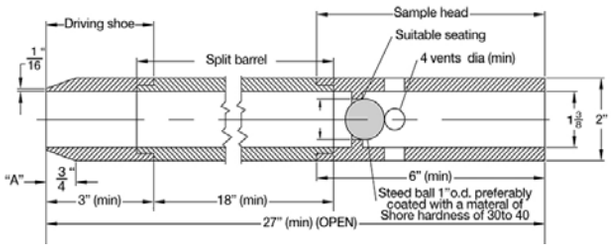
SPT- E



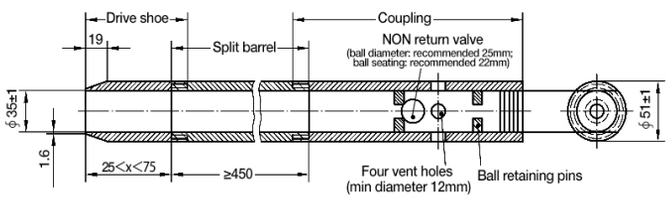
SPT- P

STANDARD PENETRATION TEST

ASTM D1586-84 SPLIT-BARREL SAMPLER (RE-APPROVED 1992)



BS1377:Part9:199 SPLIT-BARREL SAMPLER (RE-APPROVED 1992)



Sampler Assembly

Steel and plastic catcher

Cutting shoe and nose cone

Adapter

Hammer

COMPRISES:

SAMPLER ASSEMBLY - CONSIST OF:

SPT-S1	Split-Barrel Sampler, Hardened machined steel, 1 3/8'' id., 18'' length (ASTM) Split-Barrel Sampler, Hardened machined steel, Φ35±1 mm id., 18'' length (BS)	
SPT-S2	SPT Adapter	SPT-S5 SPT Cutting Shoe
SPT-S3	SPT Steel Catcher	SPT-S6 SPT Nose Cone
SPT-S4	STP Plastic Catcher	SPT-S7 Sampling Rod, set of 6 Steel pipe, 1.0 meter length

DRIVE WEIGHT ASSEMBLY - CONSIST OF:

SPT-D1	Hammer, steel, 63.5 kg weight	SPT-D3 Guide Rod, Steel, 76.2 cm drop height
SPT-D2	Anvil, Machined steel	

ACCESSORIES AND SPARE PARTS: SPT Tripod Assembly-consist of:

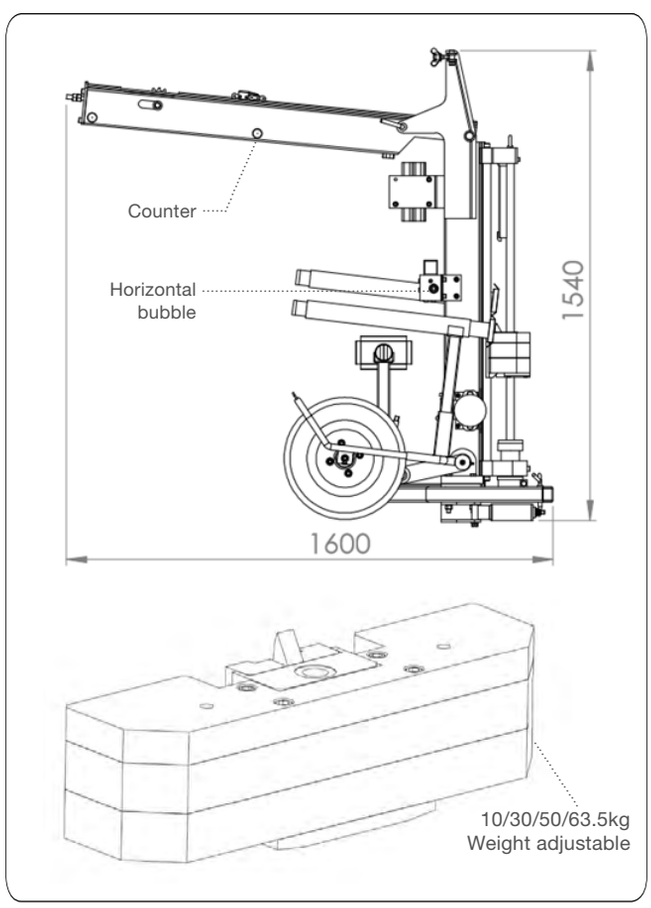
SPT-T1	Tripod stand, steel pipe	SPT-T4 Vertical Guide, Machined steel
SPT-T2	Rope, 3/4'' x 15 metre	SPT-T5 Pipe Wrench, set of two 24'' length
SPT-T3	Pulley	

SPT-H160 WITH HYDRAULIC STATION

Manually transported dynamic probing rig on wheels with hydraulic motor and folding mast, suitable for super-heavy dynamic probing and SPT too.
The dynamic probing rig SPT-H160 can be used for soil-bearing capacity tests, compaction tests and for soil sampling. Dynamic probing standards DPL (10kg), DPM (30kg), DPH (50kg), DPSH (63.5kg) as well as SPT can be carried out. Drop height can be varied between 500 and 750 mm by means of an adaptor bracket.
The integrated three-legged foot with crank legs allows for soil sampling at ease. The dynamic probing rig SPT-H160 is driven by a hydraulic motor fed by a separate hydraulic power pack. Furthermore the SPT-H version offers the vital advantage that the hydraulic power unit can serve a rod extraction unit as well.

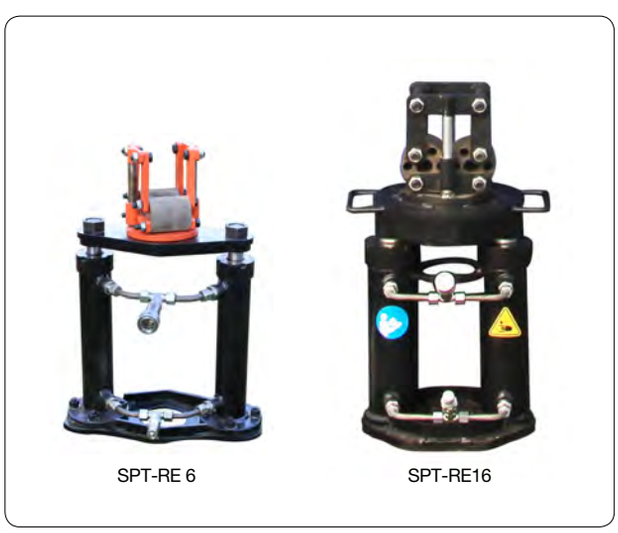
Features

- The dynamic probing rig SPT-H160 is a highly functional soil investigation machine, easy to transport due to the folding mast feature.
- It is versatilely suitable for working in confined spaces and is displaced in outdoor terrains by hand.
- It features a three-legged foot with crank legs for solid erection on site. Suitable for perpendicular working in all positions.
- Dynamic Probing DPL, DPM, DPH and SPT.
- Rod extraction function.



Extractor

The extractor is composed of a lifting cylinder and a probe rod collet. The oil cylinder is driven by hydraulic pressure, and the automatic lifting is controlled by an automatic reciprocating valve, thus driving the collet to pull the probe rod out of the ground.Model 6 ton/16 ton extractor is optional.



SPT-RE 6 SPT-RE16

FULLY HYDRAULIC SPT-C ON CRAWLER CHASSIS

Multi-functional dynamic probing rig on crawler movement system with hydraulic motor and folding mast, suitable for super-heavy dynamic probing and SPT too.
The dynamic probing rig SPT-C390 can be used for soil-bearing capacity tests, compaction tests and for soil sampling. Dynamic probing standards DPL (10kg), DPM (30kg), DPH (50kg), DPSH (63.5kg) as well as SPT can be carried out.
Drop height can be varied between 500 and 750 mm by means of an adaptor bracket.
The crawler movement system is easy for transport. The dynamic probing rig SPT-C390 is driven by a hydraulic motor fed by a separate hydraulic power pack.
Furthermore the SPT-C version offers the vital advantage that the hydraulic power unit can serve a rod extraction unit as well.

Features

- The dynamic probing rig SPT-C390 is a highly functional soil investigation machine, easy to transport due to the folding mast feature.
- It is versatilely suitable for working in confined spaces and is displaced in outdoor terrains.
- The folding mast is used for easy transportation. It can control the lifting of the mast by the oil cylinder, adjust the lateral rotation, adjust the front and back, and fold the upper part of the mast.
- Dynamic Probing DPL, DPM, DPH and SPT.
- Worktable with vice and large capacity storage boxes on both sides.
- Rod extraction function.
- Mechanical shock counter.

Standard Configuration

Item / Mode	SPT-H160	SPT-C390
Hydraulic station unit	Power: 5.5hp, 4-stroke Honda motor Flow: 15L/min Rated pressure: 16MPa	Honda engine GX390:Maximum power 8.7kw, electric start, with hour meter and voltmeter;
Hammer mass	DPL 10kg, DPM 30kg, DPH 50kg, DPSH & SPT 63.5kg	
Number of blows	15-30 blows per minute	
Dropping height	500 / 750mm adjustable	
Window sampling	With 51mm outer diameter, 1m length split sampler（Optional）	
Extraction unit	16 ton pulling force	
Weight / Size	230kgs / 1600x940x1540mm	845kgs / 820x1500x2400 mm (Crawler/ Full size)
Max speed		2.5km/hour
Rod	Dia. 22mm x 1m, 2 pcs; Dia. 32mm x 1m, 10 pcs	
Brass cap	One is suitable for dia. 22mm rod, the other is for dia. 32mm rod	
Cone	90° cones, nominal base areas are 10cm2, 15cm2, 16cm2, and 20cm2 respectively	
Window sampler	Outer dia. 51mm x 1m length	
Rod clamp	Suitable for dia. 22mm and dia. 32mm rod and dia. 51mm window sampler	
Rod extraction unit	Including oil cylinder and clamp (suitable for 20~65mm)	
Tools	~	

DILATOMETER MARCHETTI TEST

DMT can supply the investigator with many important parameters as follows: lateral pressure coefficient Ko , pore water pressure U, untrained shear strength Cu , effective angle of internal friction Î¦ , coefficient of subgrade reaction Kn, over-consolidation ratio OCR , compression modulus, modulus of elasticity, shear modulus, layer classification, compaction control, unit weight, determination of liquefaction of saturated soil and so on. Generally the flat dilatometer can be pressed into earth by CPT machine, and can also by the hammer of SCPT machine.

COMPRISES:

DMT-W3	Dilatometer Marchetti Test Kit complete set includes below items		
DMT-W3/01	Control unit	DMT-W3/02	Control Recorder
DMT-W3/03	Pressure regulation valve	DMT-W3/04	Air supply tube
DMT-W3/05	Solid probe head	DMT-W3/06	Flat blade
DMT-W3/07	Membrane	DMT-W3/08	Membrane gasket
DMT-W3/09	Standard pneumatic-electric cable	DMT-W3/10	Calibration cable
DMT-W3/11	Air pressure gauge	DMT-W3/12	Probe upper connector
DMT-W3/13	Calibration unit	DMT-W3/14	English operation manual
DMT-W3/15	Tool parts includes below items		
DMT-W3/1501	Monkey spanner 6 inch	DMT-W3/1502	0.5mm Thickness gauge
DMT-W3/1503	9—11 Hard wrench	DMT-W3/1504	150mm Ruler
DMT-W3/1505	10 inch Large spanner	DMT-W3/1506	Ring screw
DMT-W3/1507	4 inch Instrument driver	DMT-W3/1508	Wire-cutter
DMT-W3/1509	Stainless steel tweezer	DMT-W3/1510	Pulling tool
DMT-W3/1511	BrushSealing parts	DMT-W3/1512	Sealing parts

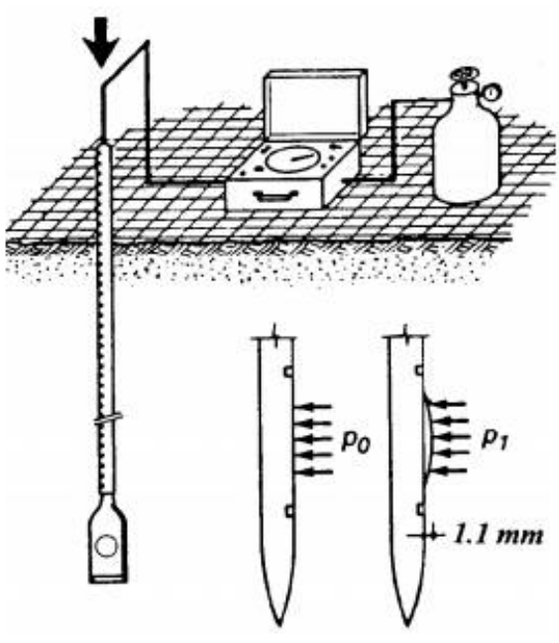
DILATOMETER MARCHETTI TEST

The main part of the flat dilatometer consists of a flat stainless thin steel blade with a circular expandable steel membrane of 60 mm diameter on one side. The test involves driving this steel blade into the ground, inflate the steel membrane and measure the corresponding pressure and deformation. Penetration of the steel blade is usually done using common in-situ penetration equipment as for instance those used for Standard Penetration Test. The membrane of the blade is connected to a gas pressure unit on the surface which provide the pressure to inflate the steel membrane.

Specifications

- Flat blade Length: 230-240mm Width: 95mm Thickness:15mm
- Steel Membrane 60mm
- Rated air pressure 6MPa
- Test Depth 0-50m Special strata can be deepened
- Indicating error ±0.1%F.S
- Test result hole storage quantity can reach 9999 No.
- Uses the rechargeable Lithium batteries, standby time up to 24 hours

DMT Layout in the Field



Flat DilatometerTest ResultsT able

Flat Dilatometer Test Results Table

Page 1

Project Name: Test
Project No.: 1
Date of Test:2016-06-18
Hole No.: ZK1
Prepared:

	Before test	After test		average value
ΔA (kPa)	10	10	ΔA;avg (kPa)	10.0
ΔB (kPa)	92	92	ΔB;avg (kPa)	92.0

Checked:

Groundwater depth(m): 0.5 unit weight of soil γ(kN/m³): 18

Reviewed:

Z_m: 0

No.	Depth d (m)	A (kPa)	B (kPa)	C (kPa)	p_0 (kPa)	p_1 (kPa)	p_2 (kPa)	$p_1 - p_0$ (kPa)	Pore Water Pressure U_0 (kPa)	Effective Vertical Stress σ'_{vo} (kPa)	Dilatometer Material Index I_D (-)	Horizontal Stress Index K_D (-)	Dilatometer Modulus E_D (MPa)	Coef. Earth Pressure at rest K_0 (-)	Overcon-Solidation Ratio OCR (-)	Vertical drained Constrained Modulus M (MPa)	Undrained Shear Strength C_u (kPa)	Friction Angle φ (°)	Remarks
1	2.2	199	323		207.9	231.0		23.1	16.677	22.6	0.121	8.461	0.802	1.65	9.49	1.87	30.2		
2	2.4	185	315		193.6	223.0		29.4	18.639	24.2	0.168	7.230	1.020	1.49	7.42	2.21	26.5		
3	2.6	133	265		141.5	173.0		31.5	20.601	25.8	0.261	4.686	1.093	1.11	3.77	1.88	16.5		
4	2.8	137	288		144.6	196.0		51.5	22.563	27.4	0.422	4.452	1.785	1.07	3.48	2.98	16.4		
5	3	142	265	52	151.0	173.0	62.0	22.1	24.525	29.0	0.174	4.359	0.765	1.05	3.37	1.26	16.9		
6	3.2	144	251		153.8	159.0		5.2	26.487	30.6	0.041	4.159	0.182	1.01	3.13	0.29	16.8		
7	3.4	150	265		159.4	173.0		13.7	28.449	32.2	0.104	4.065	0.474	1.00	3.02	0.75	17.2		
8	3.6	152	265		161.5	173.0		11.6	30.411	33.8	0.088	3.877	0.401	0.96	2.81	0.61	17.0		
9	3.8	158	301		166.0	209.0		43.1	32.373	35.4	0.322	3.773	1.494	0.94	2.69	2.24	17.2		
10	4	164	299	63	172.4	207.0	73.0	34.7	34.335	37.0	0.251	3.730	1.202	0.93	2.64	1.79	17.7		
11	4.2	166	288		175.0	196.0		21.0	36.297	38.6	0.151	3.593	0.729	0.91	2.49	1.06	17.7		
12	4.4	197	378		203.1	286.0		83.0	38.259	40.2	0.503	4.099	2.878	1.00	3.06	4.57	21.7		
13	4.6	199	356		206.3	264.0		57.8	40.221	41.8	0.348	3.972	2.004	0.98	2.92	3.11	21.7		
14	4.8	183	316		191.5	224.0		32.6	42.183	43.4	0.218	3.439	1.129	0.88	2.33	1.59	18.8		
15	5	167	299	57	175.5	207.0	67.0	31.5	44.145	45.0	0.240	2.919	1.093	0.77	1.80	1.35	15.9		
16	5.2	188	324		196.3	232.0		35.7	46.107	46.6	0.238	3.223	1.239	0.83	2.11	1.66	18.6		
17	5.4	190	306		199.3	214.0		14.7	48.069	48.2	0.097	3.138	0.510	0.81	2.02	0.67	18.6		
18	5.6	180	305		188.9	213.0		24.2	50.031	49.8	0.174	2.788	0.838	0.74	1.68	1.00	16.6		
19	5.8	190	314		198.9	222.0		23.1	51.993	51.4	0.157	2.858	0.802	0.75	1.75	0.97	17.7		
20	6	184	300	94	193.3	208.0	104.0	14.7	53.955	53.0	0.105	2.629	0.510	0.70	1.53	0.58	16.4		
21	6.2	182	307		190.9	215.0		24.2	55.917	54.6	0.179	2.471	0.838	0.66	1.39	0.89	15.6		
22	6.4	189	305		198.3	213.0		14.7	57.879	56.2	0.105	2.499	0.510	0.67	1.42	0.55	16.3		
23	6.6	199	322		208.0	230.0		22.1	59.841	57.8	0.149	2.562	0.765	0.69	1.47	0.85	17.3		
24	6.8	204	331		212.8	239.0		26.3	61.803	59.4	0.174	2.541	0.911	0.68	1.45	1.00	17.6		
25	7	209	333	101	217.9	241.0	111.0	23.1	63.765	61.0	0.150	2.527	0.802	0.68	1.44	0.87	18.0		
26	7.2	209	338		217.7	246.0		28.4	65.727	62.6	0.187	2.427	0.984	0.65	1.35	1.03	17.5		
27	7.4	212	332		221.1	240.0		18.9	67.689	64.2	0.123	2.390	0.656	0.64	1.32	0.68	17.6		
28	7.6	216	342		224.8	250.0		25.2	69.651	65.8	0.162	2.358	0.874	0.64	1.29	0.89	17.8		

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

Weights for Consolidation Test or Directly Shear Test

Weights for Consolidation Test or Directly Shear Test soil test

Model	Weight (Kg)
NS-15-5.1	5.1
NS-15-2.55	2.55
NS-15-1.275	1.275
NS-15-0.637	0.637
NS-15-0.319	0.319

Mode WG-1C

Frame:	Steel structure
Sample area:	30 cm² or 50 cm²
Sample's quantity:	Three
Lever ratio:	12: 1; 10:1
Consolidation container:	One beam, two beams, three beams
Pressure range:	12.5 kpa/30cm² to 800 kpa/30cm², 12.5 kpa/50cm² to 400 kpa/50cm²
Grade:	8, 7 grade

Model WG-1B

Sample area:	30 cm² or 50 cm²
Lever ratio:	12:1; 10:1
Sample's quantity:	Three
Pressure range:	12.5~1600kpa, 12.5~800kpa
Grade:	9, 8 grade

Model GDG-4S

Sample area:	30 cm² or 50 cm²
Lever ratio:	24:1; 20:1
Sample's quantity:	Three
Pressure range:	12.5~4000kpa, 12.5~2000kpa
Grade:	10, 9 grade

CONSOLIDATION TEST UNIT(CONTINUED)

Single Consolidation Apparatus

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

WG-4 Single Consolidation Apparatus

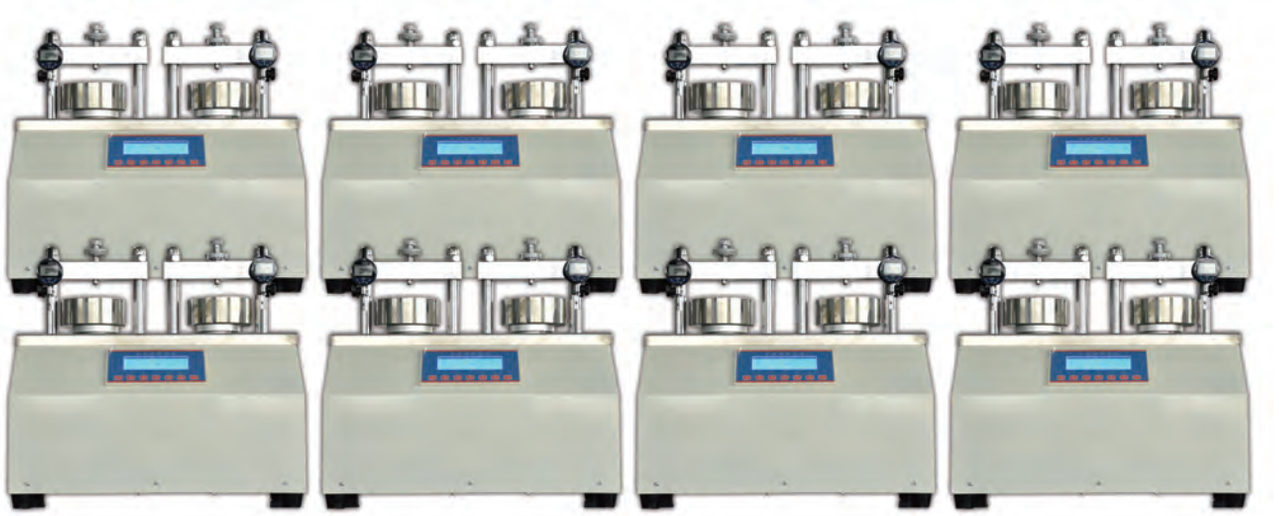
Model WG-4 Single Consolidation Apparatus	
Pressure range:	12.5, 25, 50,100,200,300,400kPa
Lever ratio:	1:12, 1:10
Soil sample:	30cm2 x 2cm height, 50cm2 x 2cm height
Overall dimension:	550mm*220mm*370mm
Net weight:	20kg (weight not included in)

Full Automatic Consolidometer

GZQ series automatic consolidometer adopts mechanical, electronic, automatic control technology, sensor automatic detection technology and computer technology into one, which can carry out various consolidation tests, automatically complete loading and unloading and data acquisition functions, and can completely replace the traditional lever consolidometer.

GZQ-1 Full Automatic Consolidometer

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



K0 Consolidation Apparatus(include pull rod)

GJY K0 Consolidation Apparatus

Model 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%

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

Model 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

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.

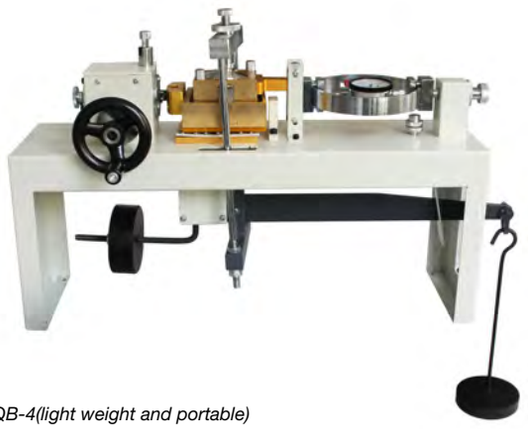
Strain controlled direct shear machine consists of shear box, soil container, loading unit, proving ring, dial gauge to measure shear deformation and volume changes. A two piece square shear box is one type of soil container used.

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

EDJ-1

Model EDJ-1	
Max vertical load	400KPa
Vertical load:	50KPa,100KPa,200KPa, 300KPa, 400KPa
Corresponding weight:	1.275,2.55,5.1,7.65,10.2kgs
Lever ratio:	1:12
Level shear force:	Max. 1.2KN
Sample area(cm^2):	30, height 2 CM
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

DIRECT SHEAR TEST MACHINE(CONTINUED)



ZQB-4(light weight and portable)

Model ZQB-4 (light weight and portable)

Soil sample area:	30cm^{2}x 2cm(H)
Vertical load:	50KPa,100KPa, 200KPa, 300KPa, 400KPa(hanger is first grade)
Lever ratio:	1:12
Level shear force:	Max. 1.2KN
Sample area(cm^2):	30
Power source:	manual
Corresponding weights' weight (kg):	1.275, 2.55, 5.1, 7.65, 10.2

AS-1

Model 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

DSJ-3(quadruplet)

DSJ-3(quadruplet) Electric shear test machine

Vertical load:	50Kpa, 100KPa, 200KPa, 300KPa, 400KPa
Lever ratio:	1:12
Shear box quatity:	4
Level shear force:	Max. 1.2KN
Sample area:	30cm^2, 2cm height
Shear rate(mm/min):	Stepless speed regulation, with digital display controller.
Power:	<100W
Power source:	220V±10%, 50Hz
Dimension(mm):	680 x 740 x 1050(LxWxH)
Weight:	200 Kg

ZYY-3

Model ZYY-3 (Duodenary) shear test machine

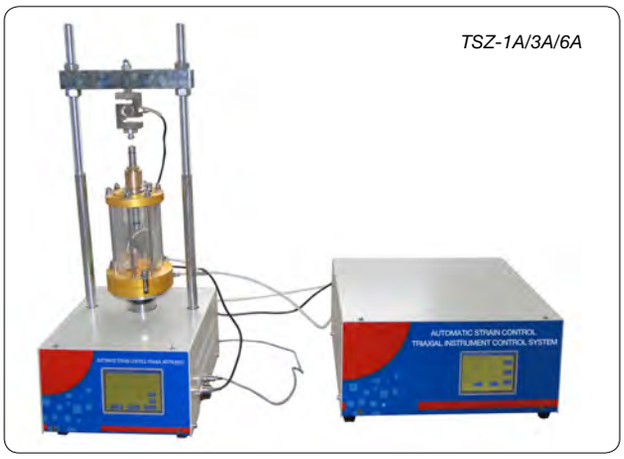
Vertical load:	400KPa,300KPa,200KPa, 100KPa, 50KPa
Lever ratio:	1:12
Max load:	1.2KN
Load method:	Weight
Sample area(cm^2):	30
Soil sample container quantity:	12, sample 36 at the same time
Dimension(mm):	760 x 880 x 1100(LxWxH)
Weight:	220 Kg(include weigths)

TRIAXIAL TEST APPARATUS

Strain Controlled Triaxial Test Apparatus

TSZ-1/3/6

Full-automatic Strain Controlled Triaxial Test Apparatus



TSZ-1A/3A/6A

The triaxial apparatus is suitable for measuring the strength, deformation and pore water pressure of soil samples. According to the different drainage conditions, it can test UU, CU and CD.

Model	TSZ-1	TSZ-3	TSZ-6
Sample dimension(mm)	Φ39.1×80	Φ39.1×80 /Φ61.8×125	Φ39.1×80 /Φ61.8×125 /Φ101×200
Axial load	0-10KN, relative error : ±1%	0-30KN, relative error : ±1%	0-60KN, relative error : ±1%
Strain rate	0.0024-4.5mm/min(step less speed regulating)		
Table stroke	0-40mm	0-90mm	0-90mm
Confining pressure	Digital Control , relative error:±0.5%FS	0-2mpa, Digital Control , relative error:±0.5%FS	0-2mpa, Digital Control , relative error:±0.5%FS
Back pressure	0-1 Mpa,Digital Control , relative error:±1%FS	0-2 Mpa,Digital Control , relative error:±1%FS	0-2 Mpa,Digital Control , relative error:±1%FS
Hole pressure	0-1 Mpa,Digital Control , relative error:±1%FS	0-2 Mpa,Digital Control , relative error:±1%FS	0-2 Mpa,Digital Control , relative error:±1%FS
Volume Change	0-50ml	0-50ml	0-50ml
Graduation	0.1ml	0.1ml	0.1ml
Power	220±22V，50HZ		

Model	TSZ-1A	TSZ-3A	TSZ-6A
Sample dimension(mm)	Φ39.1×80	Φ39.1×80 /Φ61.8×125	Φ39.1×80 /Φ61.8×125 /Φ101×200
Axial load	0-10KN, relative error : ±1%	0-30KN, relative error : ±1%	60KN, relative error : ±1%
Strain rate	0.0024-4.5mm/min(step less speed regulating)		
Table stroke	0-40mm	0-90mm	0-90mm
Confining pressure	0-0.99Mpa, Digital Control , relative error:±1%FS	0-2mpa, Digital Control , relative error:±0.5%FS	0-2mpa, Digital Control , relative error:±0.5%FS
Back pressure	0-0.99Mpa,Digital Control , relative error:±1%FS	0-2Mpa, Digital Control , relative error :±1%FS	0-2Mpa, Digital Control , relative error :±1%FS
Hole pressure	0-.099Mpa,Digital Control , relative error:±1%FS	0-2Mpa, Digital Control , relative error:±1%FS	0-2Mpa, Digital Control , relative error:±1%FS
Volume Change	0-50ml	0-50ml	0-50ml
Graduation	0.1ml	0.1ml	0.1ml
Power	220±22V，50HZ		

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
Battery	2000mAh Ni-MH , 12V
Battery Life	approx. 12 hrs. of runtime
Battery Charger	110-240 V 50/60Hz
Dimensions	600×460×370mm
GPS	± 3m (Optional)
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.

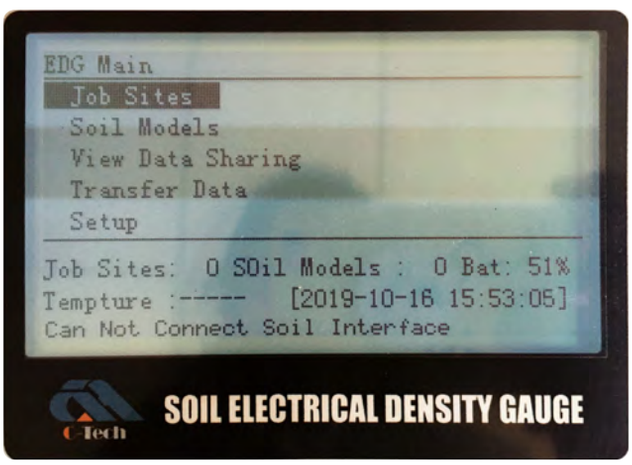
The Proctor numbers would be input into the gauge during the development of the soil model. When determined, this value is entered into the EDG to enable the computation of percent compaction.

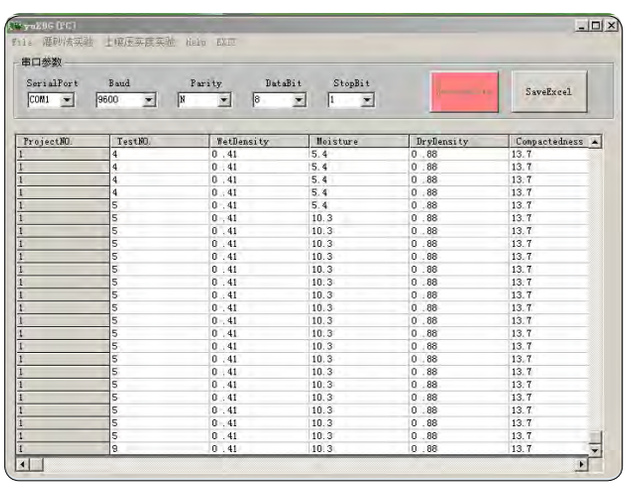
EDG Software

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





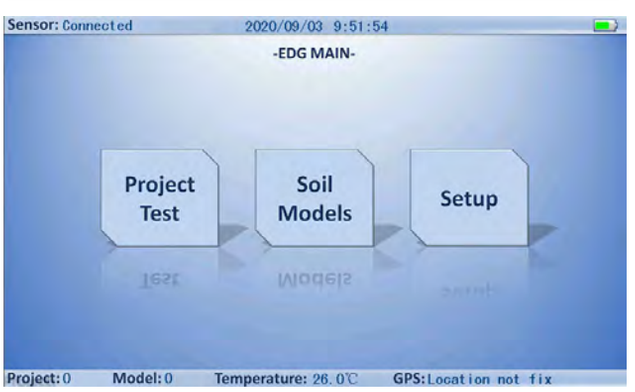
ELECTRICAL DENSITY GAUGE

EDG-1S

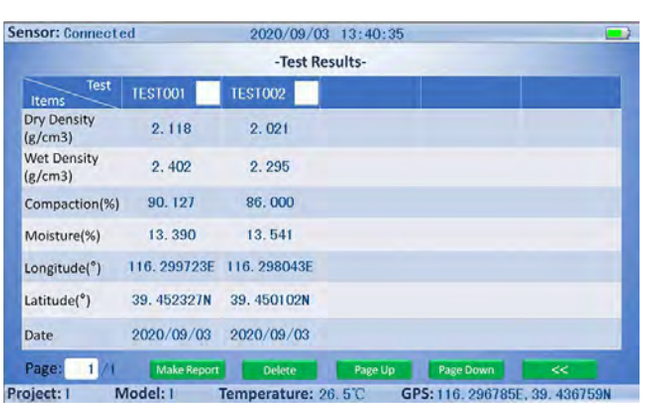
Features

- Color touch screen
- More accurate data
- New GPS function (Optional)
- USB connection, more convenient for data transmission and software upgrading later

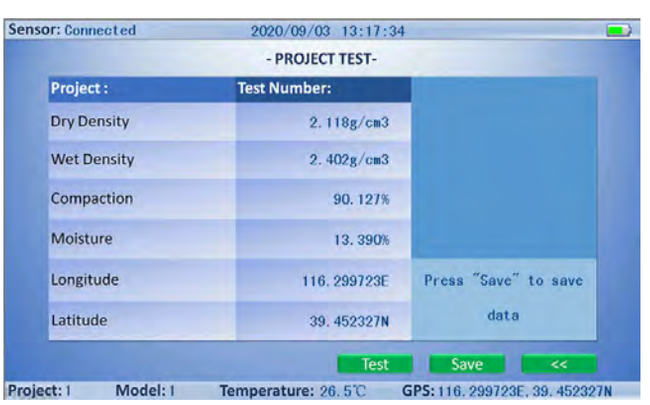
Working Interface



Main Menu



Data View



Engineering measuring point test completed

Producing a Soil Model To develop an accurate soil model, it is suggested that you either use an area of the Job Site where the material to be tested has already been placed and compacted or a similar site, which has identical compacted material in place.

To quantify readings made with the EDG while developing the soil model, it is necessary to run a conventional method test (Nuclear Gauge, Sand Cone, Voluvessel or Drive Tube and Moisture Tests) at the same time. If you are going to use a nuclear gauge for this, it is recommended you still do an alternate test for moisture, such as oven-dry, speedy or field burn off. This correlates actual compaction and moisture numbers to the readings obtained with the EDG, which provides the information the EDG needs to make accurate determinations by itself. This regimen only needs to be done to develop a Soil Model.

Select areas on the Job Site where the type of soil is consistent from place to place, and where there are differences in water content and compaction. Special preparation of spots of different densities or water contents should be done the day before, so as to allow stabilization of the soil water content.

A matrix of six (6) spots should be used during the soil model calibration procedure, which consists of two different soil density conditions and three (3) water content conditions that cover the range that is expected to be measured. The three calibration tests that evaluate high density soil will use test locations that ideally will have soil conditions that are close to the maximum density as determined by Test Methods D1557 or an equivalent method. The range in water content should include low water content, middle range water content, and high water content that is near the optimum water content as determined by Test Methods D1557 and D2216 or equivalent test methods. Once the Soil Model is developed, the EDG is ready to use by itself anytime this specific tested material is used. Additional readings (points) can always be added to the initial Soil Model. This allows you to provide more points from which your curve is developed, refining it and making it more accurate.

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.

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).

TP-6022 PH meter

TP-601A pH meter

TP-6658 Ph meter

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 MOISTURE METER

Soil moisture meter PMS710 is used for measuring moisture content ,especially for soil moisture testing. It applicable of agriculture plating, building, industry production ,science experience and other relevantindustry.

Model PMS 710

Display:	4 digital LCD
Measuring range:	0-50%
Operation condition:	Temperature:0-60℃ Hunidity:＜85%RH
Resolusion:	0.1
Accuracy:	±(0.5%n+2) (Non-saturation condition)
Power supply:	4x1.5AAAsize(UM-4) battery
Dimensions:	140x60x22mm
Needle:	280mm
Weight:	210g (notincluding batteries)

PMS 710

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 XU225

Model XU032

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

Drying Samples

ELECTRIC THERMOSTATIC OVEN

Provided for desiccation, torrefaction, wax-melting and sterilization in mining enterprises, laboratories and scientific research institutes.

Features:

1. Polished stainless-steel chamber.
2. Outside shell is made of cold-rolled plate, Anti-static spray surface.
3. Latest PID controller.
4. Uniform distribution of air temperature.
5. Forced-air convection.
6. Double layer glass door, lager viewing window.
7. Independent temperature-limit alarm system ensures experiments run safely.

Stainless steel shelves

Germany-made fan motor

Technical data

Ovens(DHG Series, A: 250°C B:300°C)	9030	9070	9140	9240	9420	9620	9920
Performance							
Temperature range	ambient + 10°C to 250/300°C						
Temperature Accuracy ±°C	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Temperature fluctuation ±°C	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Dimensions							
Work chamber volume L	30	70	140	240	420	620	920
Internal width mm	340	400	450	500	600	800	1000
Internal depth mm	325	375	557	615	550	600	600
Internal height mm	290	470	520	720	1300	1300	1600
External width mm	490	540	600	650	750	950	1140
External depth mm	520	550	740	800	730	780	800
External height mm	690	870	920	1130	1700	1720	2150
Package width mm	620	670	730	780	870	1080	910
Package depth mm	630	660	860	920	860	910	1260
Package heightmm	830	1040	1080	1270	1830	1880	2200
No. of Standard S/S Shelves	2	2	2	2	3	4	4
Net weight kg	40	55	70	85	120	145	195
Gross weight Kg	55	75	85	110	145	170	230
Voltage/Current V/HZ	220/50	220/50	220/50	220/50	380/50	380/50	380/50
Power W(A/B)	550/600	1050/1250	1500/1700	2100/2500	4000/4500	4500/5000	6000/6500

Noted: A-max temperature is 250°C ; B: max temperature is 300°C.

VACUUM OVEN

General description

- Outside shell : laser operation
- Inside material : high quality brushed stainless steel
- Heating tube: high quality stainless steel heating tube
- Partition: stainless steel laser molding baffle
- Insulation: high quality aluminum silicate silk cotton six-sided insulation
- Electrical appliances: leakage protector, solenoid valve
- Temperature control: with PID, timing, self-tuning, thyristor, LCD

Technical data

Ovens	DZF6020	DZF6050	DZF6052	DZF6090
Performance				
Temperature range	ambient + 10°C to 200°C			
Maximal final vacuum pa	100	100	100	100
Temperature fluctuation ±°C	< 0.1	< 0.1	< 0.1	< 0.1
Dimensions				
Working volume dm^3	20	50	50	90
Internal width mm	300	415	415	450
Internal depth mm	300	370	370	450
Internal height mm	275	345	345	450
External width mm	500	610	610	660
External depth mm	450	510	510	600
External height mm	790	850	850	1500
Shelves in stainless steel				
Number standard	1	2	2	2
Weight (empty) Kg	45	70	65	175
Electrical supply 50 Hz 230 Volts (1) above 4000 watts: 400 V tri + T + N				
Maximum power Watts	500	1400	/	2800

Factory options (must be specified at the time of ordering the main unit)			
DZF001	Multi-stage programmable LCD temperature controller	DZF002	Independent temperature limit controller
DZF003	RS485 interface and communication software	DZF004	embedded printer
DZF005	U disk	DZF006	vacuum pump filter

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 othergases, 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-1200/2	MF-1200/7	MF-1200/12	MF-1200/18
Max. temp.(℃)	1200℃			
Volume	2L	7L	12L	18L
Internal size(mm)	200x120x80	300x200x120	300x200x200	300x250x250
Voltage	220V/1.5KW	220V/3KW	220V/4KW	380V/5KW
temp.(℃) control accuracy	±1℃			
Overall dimension (mm)	460x380x635	560x460x675	570x480x775	600x530x855
Weight	60kg	85kg	90kg	93kg

MF-1000 Muffle furnaces

MF-1000 Muffle furnaces

Model	MF-1000/2	MF-1000/7	MF-1000/16	MF-1000/30
Max. temp.(℃)	1000℃			
Volume	2L	7L	16L	30L
Internal size(mm)	200x120x80	300x200x120	400x250x160	500x300x200
Voltage	220V/1.5KW	220V/3KW	220V/6KW	380V/7.5KW
temp.(℃) control accuracy	±1℃			
Overall dimension (mm)	490x375x596	590x455x636	690x540x698	790x555x738
Weight	50kg	70kg	90kg	115kg

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

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, 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 fourteen 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 ten dia. 200 test sives and one set of lid and cover. Mesh size is shown as below:
0.075mm, 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 – 60s 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-3 sieve shaker

Model TPZ-3

Pounding frequency:	147 times/min.
Swaying requency:	221 times/min
Shaking amplitude:	8 mm
Time setting:	0 – 15 min. selectable
Diameter of gyration:	12.5mm
Sieve size:	Ø200 or Ø300
Power supply:	380 V 50 Hz
Dimension:	670×440×970mm
Weight:	130 kg

TPZ-2 sieve shaker

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
TP0509	0-50	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	250	41 x 290
PP-MC06	500	49 x 340
PP-MC07	1000	61 x 420
PP-MC08	2000	95 x 490

PP-WB WASH BOTTLE

PP-WB wash bottle

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

DIGITAL THERMOMETER

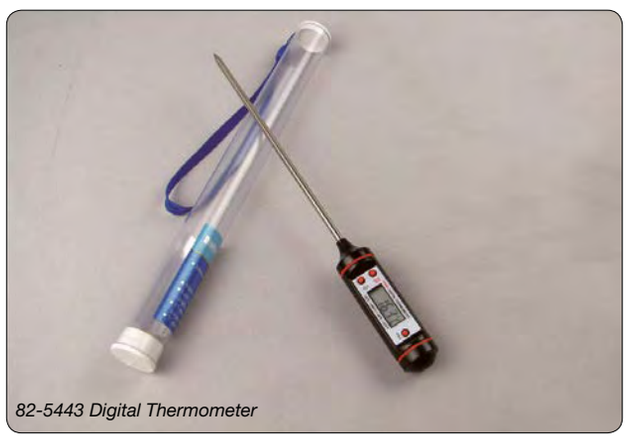
STANDARD: EN 12697-13

Digital Thermometer

82-5442 Digital Thermometer

Model 82-5442

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



82-5443 Digital Thermometer

Model 82-5443

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

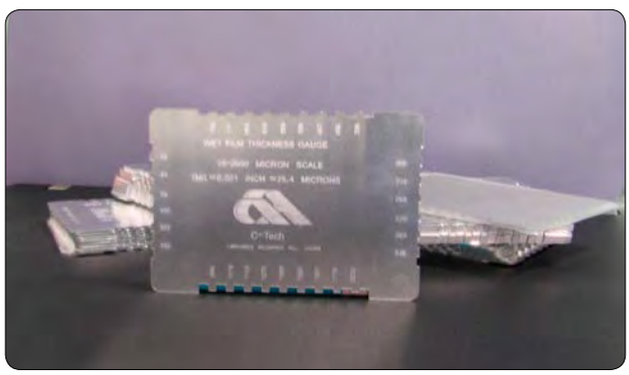
Model:	WFW-S150
Material:	Stainless steel (WFW-S150)
Measuring ranges:	0 to 150 Micro
Accuracy:	15 Micro

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

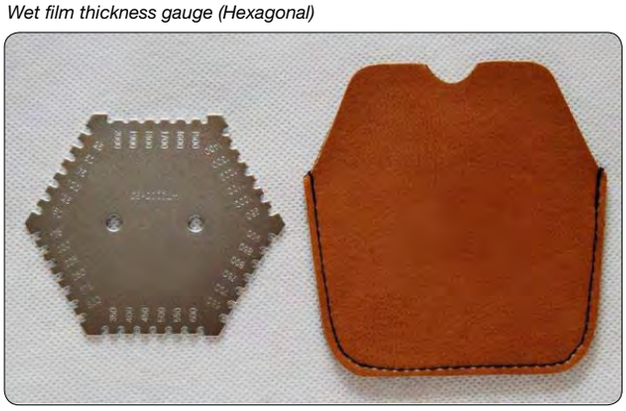
Test Method - How to use a Wet Film Comb

- 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

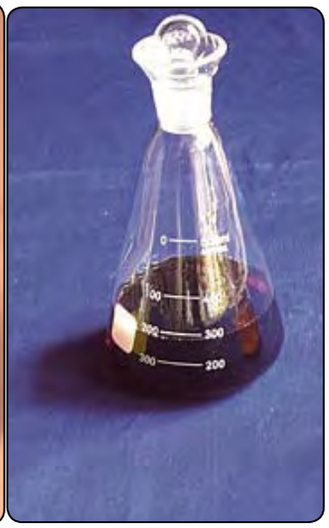
201 Beaker, low Form, Graduated

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

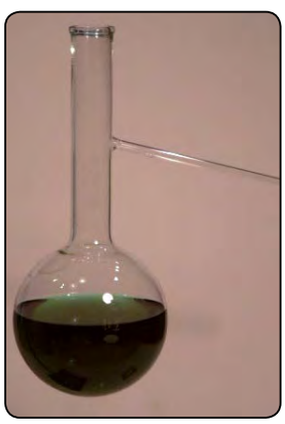
407 FLASKS,round bottom

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



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

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

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

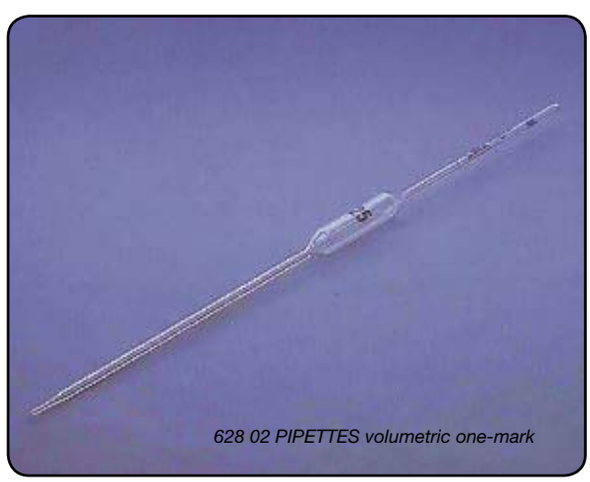
305 03 Reagent bottles

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

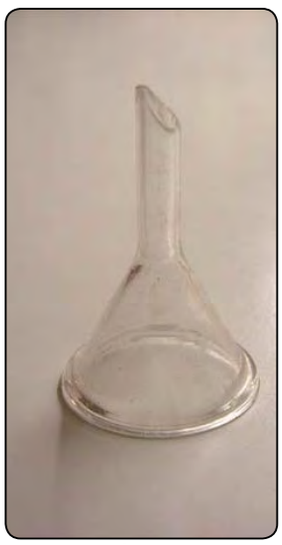
618 Measure cone shape conical

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

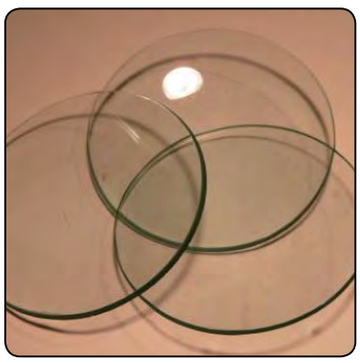
Cat.No	Top.O.D mm	Stem mm	
		Length	O.D
803-55	55	150	6
803-70	70	150	6
803-80	80	150	6

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

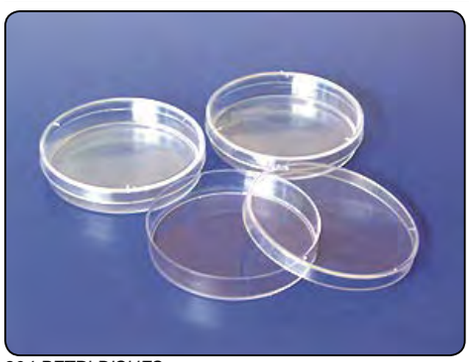
Watch glass dishes



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

208 01 WATCH GLASS DISHES

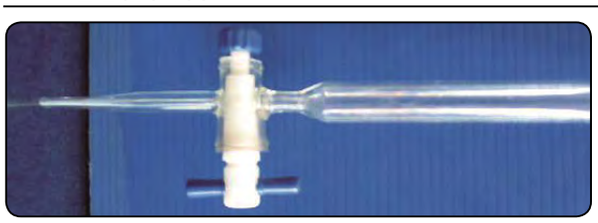
Petri dishes



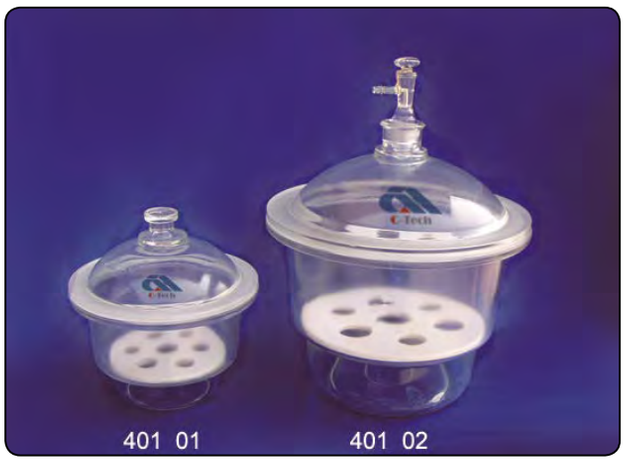
304 PETRI DISHES

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

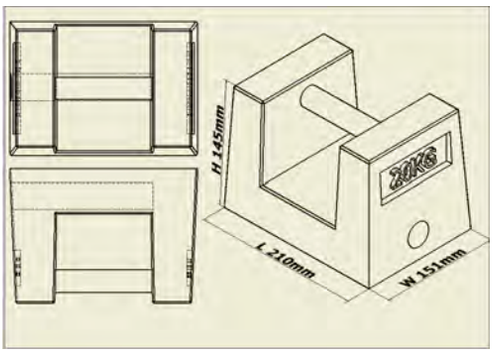
Cat. NO.	Size mm	Max. I.D mm	Porcelain plain diameter mm	Overall height mm
401 02-120	120	29/32	108	227
401 02-160	160	34/35	148	285
401 02-180	180	34/35	160	305
401 02-210	210	40/38	188	347
401 02-240	240	50/42	220	381
401 02-300	300	60/46	280	467
401 02-350	350	71/51	330	544

601 03 Test Tubes

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

601 03 TEST TUBES

CAST IRON TEST WEIGHTS



Grip Handle Weights

Technical Specifications

Tolerance	OIML class M1 M2 M3 (acc. to OIML R111-1:2004)
Material weight	Cast iron
Density ρ	7100 kg/m3 ± 600 kg/m3
Surface	Painted (Two-component coating) Color: as per client's require
Adjusting cavity	According OIML

Cast iron Grip Handle Weights OIML class M1

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11110005	5	± 250	155	86	95
11110010	10	± 500	163	115	115
11110020	20	±1000	210	151	145
11110050	50	± 2500	273	205	210
11110100	100	± 5000	385	213	245
11110200	200	±10000	760	550	200
11110500	500	±25000	760	550	200
11111000	1000	±50000	760	550	200
11110101	1	± 50	82	50	54
11110102	2	± 100	107	67	60

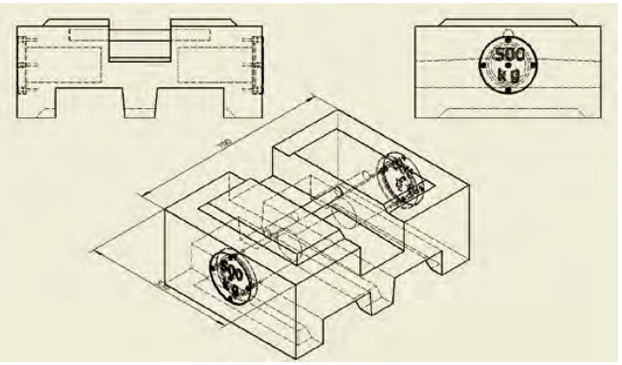
Cast iron Grip Handle Weights OIML class M2

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11210005	5	±800	155	86	95
11210010	10	±1600	163	115	115
11210020	20	±3000	210	151	145
11210050	50	±8000	273	205	210
11210100	100	±16000	385	213	245
11210200	200	±30000	385	213	245
11210500	500	±80000	385	213	245
112101000	1000	±160000	385	213	245
11210101	1	±160	82	50	54
11210102	2	±300	107	67	60

Cast iron Grip Handle Weights OIML class M3

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11310005	5	±2500	155	86	95
11310010	10	±5000	163	115	115
11310020	20	±10000	210	151	145
11310050/1000	50	±25000	273	205	210
11310100	100	±50000	385	213	245
11310200	200	±100000	530	420	455
11310500	500	±250000	530	420	455
113101000	1000	±500000	660	550	525
11310101	1	±500	82	50	54
11310102	2	±1000	107	67	60

CAST IRON TEST WEIGHTS



Large Cast Iron Masses

Technical Specifications

Tolerance	OIML class M1 M2 M3 (acc. to OIML R111-1:2004)
Material weight	Cast iron
Density ρ	7100 kg/m3 ± 600 kg/m3
Surface	Painted (Two-component coating) Color: as per client's require
Adjusting cavity	According OIML

Large Cast iron Masses OIML class M1

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11120250	250	10000	530	350	245
11120500	500	25000	700	530	280
11121000	1000	50000	700	530	482
11122000	2000	100000	700	530	860

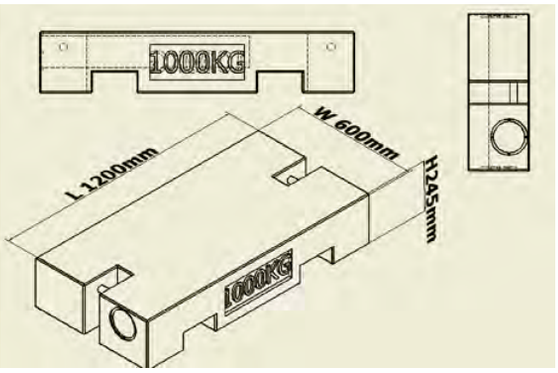
Large Cast iron Masses OIML class M2

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11220250	250	30000	530	350	245
11220500	500	80000	700	530	280
11221000	1000	160000	700	530	482
11222000	2000	300000	700	530	860

Large Cast iron Masses OIML class M3

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11320250	250	100000	530	350	245
11320500	500	250000	700	530	280
11321000	1000	500000	700	530	482
11322000	2000	1000000	700	530	860

CAST IRON TEST WEIGHTS



Rectangular Test Weights

Technical Specifications

Tolerance	OIML class M1 M2 M3 (acc. to OIML R111-1:2004)
Material weight	Cast iron, Iron steel
Density ρ	7100 kg/m3 ± 600 kg/m3
Surface	Painted (Two-component coating) Color: as per client's require
Adjusting cavity	According OIML

Rectangular Test Weights OIML class M1

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11131000	1000	50000	1200	600	245
11132000	2000	100000	1200	600	489
11125000	5000	250000	1300	1000	640

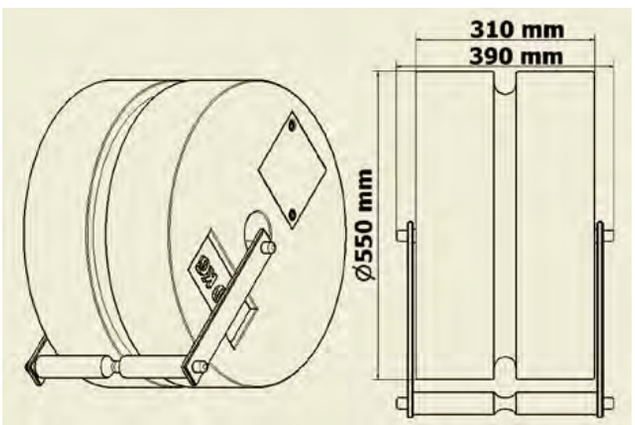
Rectangular Test Weights OIML class M2

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11231000	1000	160000	1200	600	245
11232000	2000	300000	1200	600	489
11225000	5000	800000	1300	1000	640

Rectangualr Test Weights OIML class M3

Order Number*	Nominal Value (kg)	MPE (± δm in mg)	Length (mm)	Width (mm)	Height (mm)
11331000	1000	500000	1200	600	245
11332000	2000	1000000	1200	600	489
11325000	5000	2500000	1300	1000	640

CAST IRON TEST WEIGHTS



Technical Specifications

Tolerance	OIML class M1 M2 (acc. to OIML R111-1:2004)
Material weight	Cast iron
Density ρ	7100 kg/m3 ± 600 kg/m3
Surface	Painted (Two-component coating) Color: as per client's require
Adjusting cavity	According OIML

Roller Test Weights OIML class M1

Order Number*	Nominal Value (kg)	MPE (± δm in mg)
11140200	200	10000
11140250	250	10000
11140500	500	25000
11141000	1000	50000

Roller Test Weights

Roller Test Weights OIML class M2

Order Number*	Nominal Value (kg)	MPE (± δm in mg)
11240200	200	30000
11240250	250	30000
11240500	500	80000
11241000	1000	160000

Cylinder Test Weights

Technical Specifi cations

Tolerance	OIML class M1 M2 (acc. to OIML R111-1:2004)
Material weight	Cast iron
Density ρ	7100 kg/m3 ± 600 kg/m3
Surface	Painted (Two-component coating) Color: as per client's require
Adjusting cavity	According OIML

Cylinder Test Weights OIML class M1

Order Number*	Nominal Value (kg)	MPE (± δm in mg)
11170500	500	25000
11171000	1000	50000

Cylinder Test Weights OIML class M2

Order Number*	Nominal Value (kg)	MPE (± δm in mg)
11270500	500	80000
11271000	1000	160000

CAST IRON TEST WEIGHTS

Special and Custom Weights

Meeting your special weight needs is a Tianpeng specialty. We can custom make precisely the weight you need for your unique applications.

• Any Size – from 1kg to 2000 kgs.
• Any Denomination – metric, avoirdupois, troy ounce, grain, pennyweight, carat, other standards or even custom units.
• Any Tolerance – including all ASTM, NIST, OIML classes or special tolerances such as Troemner UltraClass or a customer-designated tolerance.
• Any Material – including stainless steel, brass, aluminum, cast iron, nichrome, steel, gold, silver, titanium, and more.
• Any Shape – slotted, hook, bar, cylindrical, flat, dish, cube, etc. We can create drawings and prints based on customer input or can work from customer supplied prints.
• Engineering Services – Tianpeng can provide assistance and guidance in helping you design a weight for your specifi c application or we can design a weight and provide drawings from scratch based on your design inputs.
• Contact us for a no obligation quotation, or submit a special and custom weight request for quotation form so we can help you with your special and/or custom weight needs.

25kg and 15kg, Slotted Weights

Examples of Special and Custom Weights include: 25kg and 15kg, Dish shape

1000kgs, Cylinder Shape

300kg cast iron test weight

500kgs, 1000kgs, Cube Shape

STAINLESS STEEL TEST WEIGHTS

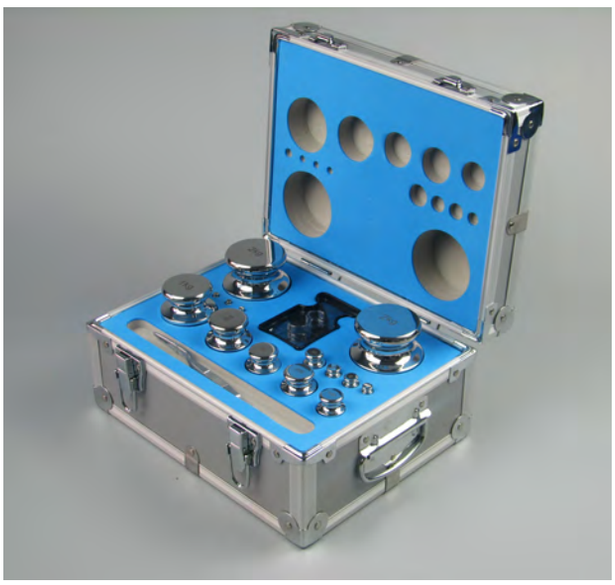
Technical Specifications

Tolerance	OIML Class E2, F1
Material weight	Non-Magnetism Stainless Steel
Density ρ	7.96 g/cm^3
Magnetic Susceptibility	<0.005
Form	1mg-500mg: Flake Weight 1g-20kg: Cylindrical Weight
Package	ABS Box, Aluminum Box

Individual	E2	F1
Nominal Value	**Order Number***	**Order Number***
1mg	21410001	21510001
2mg	21410002	21510002
5mg	21410005	21510005
10mg	21410010	21510010
20mg	21410020	21510020
50mg	21410050	21510050
100mg	21410100	21510100
200mg	21410200	21510200
500mg	21410500	21510500
1g	21420001	21520001
2g	21420002	21520002
5g	21420005	21520005
10g	21420010	21520010
20g	21420020	21520020
50g	21420050	21520050
100g	21420100	21520100
200g	21420200	21520200
500g	21420500	21520500
1kg	214201000	215201000
2kg	214202000	215202000
5kg	214205000	215205000
10kg	214210000	215210000
20kg	214220000	215220000

Nominal Value	1mg-100g	1mg-200g	1mg-500g	1mg-1kg	1mg-2kg	1kg-5kg	1mg-10kg
1mg	•	•	•	•	•		•
2mg	••	••	••	••	••		••
5mg	•	•	•	•	•		•
10mg	•	•	•	•	•		•
20mg	••	••	••	••	••		••
50mg	•	•	•	•	•		•
100mg	•	•	•	•	•		•
200mg	••	••	••	••	••		••
500mg	•	•	•	•	•		•
1g	•	•	•	•	•		•
2g	••	••	••	••	••		••
5g	•	•	•	•	•		•
10g	•	•	•	•	•		•
20g	••	••	••	••	••		••
50g	•	•	•	•	•		•
100g	•	•	•	•	•		•
200g		••	••	••	••		••
500g			•	•	•		•
1kg				•	•	•	•
2kg					••	••	••
5kg						•	•
10kg							•
Total	21	23	24	25	27	4	29

STAINLESS STEEL TEST WEIGHTS



Technical Specifications

Tolerance	OIML Class F1,F2,M1
Material weight	Stainless Steel
Density ρ	7.9g/cm^3
Magnetic Susceptibility	F1, F2: <0.05 M1: <0.5
Form	1mg-500mg: Flake Weight 1g-20kg: cylindrical Weight
Package	ABS Box, Aluminum Box

Nominal Value	1mg-500mg	1mg-100g	1mg-200g	1mg-500g	1mg-1kg	1mg-2kg	1kg-5kg	1mg-10kg
1mg	•	•	•	•	•	•		•
2mg	••	••	••	••	••	••		••
5mg	•	•	•	•	•	•		•
10mg	•	•	•	•	•	•		•
20mg	••	••	••	••	••	••		••
50mg	•	•	•	•	•	•		•
100mg	•	•	•	•	•	•		•
200mg	••	••	••	••	••	••		••
500mg	•	•	•	•	•	•		•
1g		•	•	•	•	•		•
2g		••	••	••	••	••		••
5g		•	•	•	•	•		•
10g		•	•	•	•	•		•
20g		••	••	••	••	••		••
50g		•	•	•	•	•		•
100g		•	•	•	•	•		•
200g			••	••	••	••		••
500g				•	•	•		•
1kg					•	•	•	•
2kg						••	••	••
5kg							•	•
10kg								•
Total	12	21	23	24	25	27	4	29

Individual	F1	F2	M1
Nominal Value	Order Number*	Order Number*	Order Number*
1mg	31510001	31610001	31110001
2mg	31510002	31610002	31110002
5mg	31510005	31610005	31110005
10mg	31510010	31610010	31110010
20mg	31510020	31610020	31110020
50mg	31510050	31610050	31110050
100mg	31510100	31610100	31110100
200mg	31510200	31610200	31110200
500mg	31510500	31610500	31110500
1g	31520001	31620001	31120001
2g	31520002	31620002	31120002
5g	31520005	31620005	31120005
10g	31520010	31620010	31120010
20g	31520020	31620020	31120020
50g	31520050	31620050	31120050
100g	31520100	31620100	31120100
200g	31520200	31620200	31120200
500g	31520500	31620500	31120500
1kg	315201000	316201000	311201000
2kg	315202000	316202000	311202000
5kg	315205000	316205000	311205000
10kg	315210000	316210000	311210000
20kg	315220000	316220000	311220000

STAINLESS STEEL TEST WEIGHTS

Technical Specifications

Tolerance	ASTM Class 0,1,2,3,4
Material weight	Non-Magnetism Stainless Steel
Density ρ	7.94-7.96g/cm^3
Magnetic Susceptibility	<0.01
Form	1mg-500mg: Flake Weight 1g-20kg: cylindrical Weight
Package	ABS Box or Aluminum Box

Individual	Class 0	Class 1	Class 2	Class 3	Class 4
Nominal Value	Order Number*	Order Number*	Order Number*	Order Number*	Order Number*
1mg	22110001	22210001	22310001	22410001	22510001
2mg	22110002	22210002	22310002	22410002	22510002
5mg	22110005	22210005	22310005	22410005	22510005
10mg	22110010	22210010	22310010	22410010	22510010
20mg	22110020	22210020	22310020	22410020	22510020
50mg	22110050	22210050	22310050	22410050	22510050
100mg	22110100	22210100	22310100	22410100	22510100
200mg	22110200	22210200	22310200	22410200	22510200
500mg	22110500	22210500	22310500	22410500	22510500
1g	22120001	22220001	22320001	22420001	22520001
2g	22120002	22220002	22320002	22420002	22520002
5g	22120005	22220005	22320005	22420005	22520005
10g	22120010	22220010	22320010	22420010	22520010
20g	22120020	22220020	22320020	22420020	22520020
50g	22120050	22220050	22320050	22420050	22520050
100g	22120100	22220100	22320100	22420100	22520100
200g	22120200	22220200	22320200	22420200	22520200
500g	22120500	22220500	22320500	22420500	22520500
1kg	221201000	222201000	223201000	224201000	225201000
2kg	221202000	222202000	223202000	224202000	225202000
5kg	221205000	222205000	223205000	224205000	225205000
10kg	221210000	222210000	223210000	224210000	225210000
20kg	221220000	222220000	223220000	224220000	225220000

Nominal Value	1mg-500mg	1mg-100g	1mg-200g	1mg-500g	1mg-1kg	1mg-2kg	1kg-5kg	1mg-5kg
1mg	•	•	•	•	•	•		•
2mg	••	••	••	••	••	••		••
5mg	•	•	•	•	•	•		•
10mg	•	•	•	•	•	•		•
20mg	••	••	••	••	••	••		••
50mg	•	•	•	•	•	•		•
100mg	•	•	•	•	•	•		•
200mg	••	••	••	••	••	••		••
500mg	•	•	•	•	•	•		•
1g		•	•	•	•	•		•
2g		••	••	••	••	••		••
5g		•	•	•	•	•		•
10g		•	•	•	•	•		•
20g		••	••	••	••	••		••
50g		•	•	•	•	•		•
100g		•	•	•	•	•		•
200g			••	••	••	••		••
500g				•	•	•		•
1kg					•	•	•	•
2kg						••	••	••
5kg							•	•
10kg								•
20kg								
Total	12	21	23	24	25	27	4	29

STAINLESS STEEL TEST WEIGHTS

Special and Custom Weights

Meeting your special weight needs is a Tianpeng specialty. We can custom make precisely the weight you need for your unique applications.

• Any Size – from 1mg to 2000 kgs.
• Any Denomination – metric, avoirdupois, troy ounce, grain, pennyweight, carat, other standards or even custom units.
• Any Tolerance – including all ASTM, NIST, OIML classes or special tolerances such as Troemner UltraClass or a customer-designated tolerance.
• Any Material – including stainless steel, brass, aluminum, cast iron, nichrome, steel, gold, silver, titanium, and more.
• Any Shape – slotted, hook, bar, cylindrical, flat, dish, cube, etc. We can create drawings and prints based on customer input or can work from customer supplied prints.
• Engineering Services – Tianpeng can provide assistance and guidance in helping you design a weight for your specifi c application or we can design a weight and provide drawings from scratch based on your design inputs.

Examples of Special and Custom Weights include:

Technical Specifications

Tolerance	ASTM Class 1 to ASTM Class 6
Type	Single Hook Weight Double Hook Weight
Material weight	Stainless Steel
Density ρ	7.94g/cm^3
Applications	Pressure, torque, and tensile strength testing
Package	Aluminum Box

Technical Specifications

Tolerance	ASTM Class 1 to ASTM Class 6
Type	Slotted Weight
Material weight	Stainless Steel
Density ρ	7.94g/cm^3
Applications	Pressure, torque, and tensile strength testing
Package	Aluminum Box

Technical Specifications

Tolerance	ASTM Class 4, 5, 6 NIST Class F
Type	Grip Handle Weights
Material weight	Stainless Steel
Density ρ	7.94g/cm^3
Applications	food, beverage, pharmaceutical, nuclear and fine chemical industries
Package	Aluminum Box

ELECTRONIC BALANCE

Precision Balance

Technical Specifications

Display	LED/LCD(Backlight)
Power supply	AC/DC Power Supply
Battery	6V/1.3Ah Rechargeable
Function	Double Display Design
Interface	RS232
Package	Carton

Order number	Capacity	Readability and tolerance	Pan dimension (mm)	Net Weight approx (kgs)
TPAM-150	150g	0.005g	116	3.5
TPAM-300	300g	0.01g	116	3.5
TPAM-600	600g	0.01g	116	3.5
TPAM-1200	1200g	0.01g	124*144	4
TPAM-3000	3000g	0.01g	124*144	4

Technical Specifications

Display	LCD(Backlight)
Power supply	AC/DC Power Supply
Battery	6V/1.3Ah Rechargeable
Function	Classic Shinko Model And Best Quality
Interface	RS232
Package	Carton

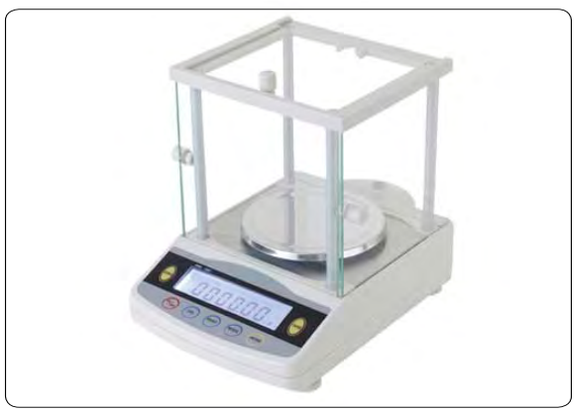
Order number	Capacity	Readability and tolerance	Square Pan dimension(mm)	Weight approx
TPSK-300	300g	0.01g	160*180	3.5
TPSK-600	600g	0.01g	160*180	3.5
TPSK-1000	1000g	0.01g	160*180	3.5
TPSK-3000	3000g	0.1g	160*180	3.5
TPSK-6000	6000g	0.1g	160*180	3.5
TPSK-10000	10000g	0.1g	160*180	3.5

High Precision Balance

Technical Specifications

Display	LCD(Backlight)
Power supply	AC/DC Power Supply
Battery	6V/1.3Ah Rechargeable
Function	Classic Model And Best Quality
Interface	RS232
Package	Carton

Order number	Capacity	Readability and tolerance	Pan diameter (mm)	Net Weight approx (kgs)
TPJA-100	100g	1mg	80	3
TPJA-200	200g	1mg	80	3
TPJA-300	300g	1mg	80	3
TPJA-400	400g	1mg	80	3
TPJA-500	500g	1mg	80	3



Technical Specifications

Display	LCD(Backlight)
Power supply	AC/DC Power Supply
Battery	6V/1.3Ah Rechargeable
Function	Classic Shinko Model And Best Quality
Interface	RS232
Package	Carton

Order number	Capacity	Readability and tolerance	Round Pan diameter(mm)	Net Weight approx (kgs)
TPDJ-300	300g	0.01g	116	3.5
TPDJ-600	600g	0.01g	116	3.5
TPDJ-1000	1000g	0.01g	116	3.5
TPDJ-2000	2000g	0.01g	116	3.5
TPDJ-3000	3000g	0.01g	116	3.5
TPDJ-6000	6000g	0.1g	116	3.5

Weighing instrument

Denomination	ASTM E 617 Tolerance Table ±mg except as noted							
	Class 0	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class7
5000kg					100g	250g	500g	750g
3000kg					60g	150g	300g	450g
2000kg					40g	100g	200g	300g
1000kg					20g	50g	100g	150g
500kg					10g	25g	50g	75g
300kg					6.0g	15g	30g	45g
200kg					4.0g	10g	20g	30g
100kg					2.0g	5g	10g	15g
50kg	63	125	250	500	1.0g	2.5g	5g	7.5g
30kg	38	75	150	300	600	1.5g	3g	4.5g
25kg	31	62	125	250	500	1.2g	2.5g	4.5g
20kg	25	50	100	200	400	1.0g	2g	3.8g
10kg	13	25	50	100	200	500	1g	2.2g
5kg	6	12	25	50	100	250	500	1.4g
3kg	3.8	7.5	15	30	60	150	300	1.0g
2kg	2.5	5	10	20	40	100	200	750
1kg	1.3	2.5	5.0	10	20	50	100	470
500g	0.60	1.2	2.5	5.0	10	30	50	300
300g	0.38	0.75	1.5	3.0	6.0	20	30	210
200g	0.25	0.5	1.0	2.0	4.0	15	20	160
100g	0.13	0.25	0.5	1.0	2.0	9	10	100
50g	0.060	0.12	0.25	0.60	1.2	5.6	7	...
30g	0.037	0.074	0.15	0.45	0.90	4.0	5	44
20g	0.037	0.074	0.10	0.35	0.70	3.0	3	33
10g	0.025	0.05	0.074	0.25	0.50	2.0	2	21
5g	0.017	0.034	0.054	0.18	0.36	1.3	2	13
3g	0.017	0.034	0.054	0.15	0.30	0.95	2	9.4
2g	0.017	0.034	0.054	0.13	0.26	0.75	2	7.0
1g	0.017	0.034	0.054	0.10	0.20	0.50	2	4.5
500mg	0.005	0.010	0.025	0.080	0.16	0.38	1	3.0
300mg	0.005	0.010	0.025	0.070	0.14	0.30	1	2.2
200mg	0.005	0.010	0.025	0.060	0.12	0.26	1	1.8
100mg	0.005	0.010	0.025	0.050	0.10	0.20	1	1.2
50mg	0.005	0.010	0.014	0.042	0.085	0.16	0.50	0.88
30mg	0.005	0.010	0.014	0.038	0.075	0.14	0.50	0.68
20mg	0.005	0.010	0.014	0.035	0.070	0.12	0.50	0.56
10mg	0.005	0.010	0.014	0.030	0.060	0.10	0.50	0.4
5mg	0.005	0.010	0.014	0.028	0.055	0.080	0.20	...
3mg	0.005	0.010	0.014	0.026	0.052	0.070	0.20	...
2mg	0.005	0.010	0.014	0.025	0.050	0.060	0.20	...
1mg	0.005	0.010	0.014	0.025	0.050	0.050	0.10	...

Denomination	OIML R111 Tolerance Table ±mg					
	E1	E2	F1	F2	M1	M2
5000kg			25000	80000	250000	800000
2000kg			10000	30000	100000	300000
1000kg		1600	5000	16000	50000	160000
500kg		800	2500	8000	25000	80000
200kg		300	1000	3000	10000	30000
100kg		160	500	1600	5000	16000
50kg	25	80	250	800	2500	8000
20kg	10	30	100	300	1000	3000
10kg	5	16	50	160	500	1600
5kg	2.5	8.0	25	80	250	800
2kg	1	3.0	10	30	100	300
1kg	0.5	1.6	5.0	16	50	160
500g	0.25	0.8	2.5	8.0	25	80
200g	0.1	0.3	1.0	3.0	10	30
100g	0.05	0.16	0.5	1.6	5.0	16
50g	0.03	0.10	0.3	1.0	3.0	10
20g	0.025	0.08	0.25	0.8	2.5	8.0
10g	0.020	0.06	0.20	0.6	2.0	6.0
5g	0.016	0.05	0.16	0.5	1.6	5.0
2g	0.012	0.04	0.12	0.4	1.2	4.0
1g	0.010	0.03	0.10	0.3	1.0	3.0
500mg	0.008	0.025	0.08	0.25	0.8	2.5
200mg	0.006	0.020	0.06	0.20	0.6	2.0
100mg	0.005	0.016	0.05	0.16	0.5	1.6
50mg	0.004	0.012	0.04	0.12	0.4	
20mg	0.003	0.010	0.03	0.10	0.3	
10mg	0.003	0.008	0.025	0.08	0.25	
5mg	0.003	0.006	0.020	0.06	0.20	
2mg	0.003	0.006	0.020	0.06	0.20	
1mg	0.003	0.006	0.020	0.06	0.20	

C-Tech

C-Tech

Laboratory equipment co.,limited