

CALIFORNIA BEARING RATIO (C.B.R)

Standard: CBR MOULD BS 1377:4, 1924:2, CBR MOULD
ASTM D1883, D3668 - AASHTO T193

CBR Equipment

Provide wide range selection of concrete cast mould in sizes and materials.

CBR MOULD BS Standard 1377:4, 1924:2

CBR (Threaded Type)		
Model Number	Parts Description	Approx. Weight
NL 5001 X / 001 – A 002	CBR Mould c/w Body, Collar & Perforated Base Plate	7.2 kg
NL 5001 X / 001 – A 024	CBR Mould c/w Body, Collar & Solid Base Plate	7.2 kg
NL 5001 X / 001 – A 021	CBR Mould, Body	4.0 kg
NL 5001 X / 001 – A 010	CBR Mould, Collar	1.0 kg
NL 5001 X / 001 – A 004	CBR Mould, Solid Base Plate	1.3 kg
NL 5001 X / 001 – A 016	CBR Mould, Cutting Collar	1.5 kg
NL 5001 X / 001 – A 005	CBR Mould, 'C' Spanner (1 pair)	3.0 kg
NL 5001 X / 001 – A 006	CBR Mould, Base Tools	1.5 kg
NL 5001 X / 001 – A 022	CBR Mould, Perforated Base Plate	1.3 kg

CBR MOULD BS Standard 1377:4, 1924:2

CBR (Standard Type)		
Model Number	Parts Description	Approx. Weight
NL 5001 X / 001 – A 001	CBR Mould c/w Body, Collar & Perforated Base Plate	7.5 kg
NL 5001 X / 001 – A 012	CBR Mould c/w Body, Collar & Solid Base Plate	7.5 kg
NL 5001 X / 001 – A 017	CBR Mould, Body	3.4 kg
NL 5001 X / 001 – A 018	CBR Mould, Collar	1.0 kg
NL 5001 X / 001 – A 015	CBR Mould, Cutting Collar	1.0 kg
NL 5001 X / 001 – A 003	CBR Mould, Solid Base Plate c/w Stem	2.9 kg
NL 5001 X / 001 – A 019	CBR Mould, Perforated Base Plate c/w Stem	2.9 kg
NL 5001 X / 001 – A 007	CBR Mould, Stainless Steel Filter Screen (Ø149 mm, 0.150 mm Mesh)	0.1 kg
NL 5001 X / 001 – A 008	CBR Mould, Spacer Disc c/w 'T' Handle	7.0 kg
NL 5001 X / 001 – A 009	CBR Mould, Perforated Swell Plate	0.5 kg
NL 5001 X / 001 – A 011	CBR Mould, Tripod Gauge Holder	0.3 kg
NL 7020 X / 006	Dial Indicator (30 mm x 0.01 div)	0.2 kg
NL 5001 X / 001 – A 013	Annular Surcharges	2.0 kg
NL 5001 X / 001 – A 014	Split Surcharges	2.0 kg
NL 5011 X / 001 – A 003	Modify Proctor Rammer (Ø50 mm, Fall Height 450 mm, 4.5 kg)	3.6 kg
NL 5011 X / 001 – A 002	Standard Proctor Rammer (Ø50 mm, Fall Height 300 mm, 2.5 kg)	7.3 kg
NL 5001 X / 001 – A 023	Straight Edge (300 x 30 x 3 mm)	0.2 kg
NL 7021 X / 002	Filter Paper (Ø 150 mm, 100 pcs / pack)	0.1 kg
NL 5001 X / 001 – A 020	Plastic Soaking Tank c/w Specimen Support Grid Piece (4 Specimens)	7.0 kg
NL 5001 X / 001 – A 025	Plastic Soaking Tank c/w Specimen Support Grid Piece (20 Specimens)	18 kg
NL 5001 X / 001 – A 026	Slotted Surcharges	2.0 kg
NL 5001 X / 001 – A 027	Plastic Soaking Tank c/w Specimen Support Grid Piece (6 Specimens)	13 kg



CBR MOULD ASTM Standard D1883, D3668-AASHTO T193

CBR (Split Type)		
Model Number	Parts Description	Approx. Weight
NL 5001 X / 002 – A 002	CBR Mould c/w Body, Collar & Perforated Base Plate	9.0 kg
NL 5001 X / 002 – A 013	CBR Mould c/w Body, Collar & Solid Base Plate	9.0 kg
NL 5001 X / 002 – A 014	CBR Mould, Body	4.9 kg

CBR MOULD ASTM Standard D1883, D3668-AASHTO T193

CBR (Standard Type)		
Model Number	Parts Description	Approx. Weight
NL 5001 X / 002 – A 001	CBR Mould c/w Body, Collar & Perforated Base Plate	9.0 kg
NL 5001 X / 002 – A 004	CBR Mould c/w Body, Collar & Solid Base Plate	9.0 kg
NL 5001 X / 002 – A 007	CBR Mould, Body	4.9 kg
NL 5001 X / 002 – A 008	CBR Mould, Collar	0.9 kg
NL 5001 X / 002 – A 011	CBR Mould, Cutting Collar	0.9 kg
NL 5001 X / 002 – A 003	CBR Mould, Solid Base c/w Stem	3.2 kg
NL 5001 X / 002 – A 012	CBR Mould, Perforated Base c/w Stem	3.2 kg
NL 5001 X / 001 – A 007	CBR Mould, Filter Screen (Ø 149 mm, 0.150 mm Mesh)	0.1 kg
NL 5001 X / 002 – A 005	CBR Mould, Spacer Disc c/w 'T' Handle	8.8 kg
NL 5001 X / 001 – A 009	CBR Mould, Perforated Swell Plate	0.5 kg
NL 5001 X / 001 – A 011	CBR Mould, Tripod (Gauge Holder)	0.3 kg
NL 7020 X / 004	Dial Indicator (10 mm x 0.01 div.)	0.2 kg
NL 5001 X / 002 – A 009	Annular Surcharge	2.27 kg
NL 5001 X / 002 – A 010	Slotted Surcharge Ø 50.8 mm	2.27 kg
NL 5011 X / 002 – A 006	Modify Proctor Rammer (Ø 50 mm, Fall Height 457.2 mm, 4.5 kg)	6.5 kg
NL 5001 X / 001 – A 023	Straight Edge (300 x 30 x 3 mm)	0.2 kg
NL 7021 X / 002	Filter Paper (Ø 150 mm, 100 pcs / pack)	0.1 kg
NL 5001 X / 001 – A 020	Plastic Soaking Tank c/w Specimen Support Grid Piece (4 Specimens)	7.0 kg
NL 5001 X / 001 – A 027	Plastic Soaking Tank c/w Specimen Support Grid Piece (6 Specimens)	13.0 kg




CBR Accessories

MARSHALL Accessories
Optional Accessories (CBR Test) :

Model Number	Accessories Description
NL 5002 X / 006 – P 001	Penetration Piston
NL 5002 X / 006 – P 002	Extension Rod for BS Penetration Piston
NL 5002 X / 005 – A 001	Platen Disc
NL 5002 X / 001 – P 003	Dial Gauge Holder
NL 7023 X / 009	Proving Ring 50 kN
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm

Optional Accessories (Mashall Test) :

Model Number	Accessories Description
NL 5002 X / 005 – A 002	4" Mashall Stability Mould
NL 5002 X / 005 – A 003	Flow Meter
NL 5002 X / 005 – A 004	Proving Ring 30 kN c/w Extended Load Piston
NL 7020 X / 004	Dial Indicator 10 x 0.01 mm

AUTO CBR TESTER 50kN

Standard: BS 1377-4, EN 13286-47, ASTM D 1883, AASHTO T 193

Immediate Bearing Index

New Touch Screen controller with rigid and compact design. By using server Drive System to achieve more reliable and high accurate testing results.

Feature :

- Large touchscreen display for viewing real-time graph and test data
- Emergency stop button
- Compact, bench mounting design
- Energy saving with Servo Motor
- Less vibration & noise during operation
- Rapid platen adjustment



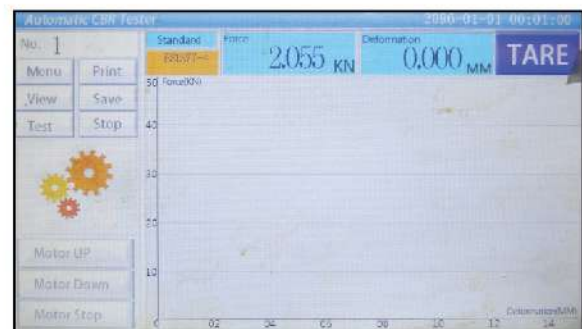
Technical Specifications :

Model Number	NL 5002 X / 007A
Capacity	50 kN
Testing Speed	1.27 mm / min (ASTM), 1 mm/min (BS)
Vertical Clearance	690 mm max
Horizontal Clearance	270 mm
Product Dimension (mm)	565 (L) x 505 (W) x 1110 (H)
Approx. Product Weight	93 kg
Power Supplied	220 V, 50/60 Hz, 0.5hp, 370 W, 0.45A

*1 Copy of Manual Instructions

Unit Consists Of :

Model Number	Description	Qty
NL 5002 X / 006 - P 001	Penetration Piston	1no.
NL 5002 X / 006 - P 002	Extension Rod for BS Penetration Piston	1no.
NL 2010 X / 004 - P 001	50 kN 'S' Type Load Cell	1no.
NL 2010 X / 004 - P 002	Displacement Transducer Probe	1no.
NL 5002 X / 006 - P 003	Transducer Holder	1no.
NL 5002 X / 007 - P001	Mini Printer	1no.



ECO-SMARTZ ADVANCE CBR LOADING TESTER 50 kN

Standard: EN 13286-47, BS 1377:4,
ASTM D1883, AASTHO T 193

Immediate Bearing Index

Newly invented bench mounting type machine, with rigid & compact design compare with previous model. By using DC motorised drive system to achieve more reliable & high accurate testing result.

FEATURES:-

- *Compact, bench-mounting design
- *Energy saving with DC power motor
- *Less vibration & noise during operation
- *Rapid platen adjustment

Technical Specifications :

Model Number	NL 5002 X / 010
Capacity	50 kN
BS CBR Testing Speed	1 mm / min
ASTM CBR Testing Speed	1.27mm / min
Vertical Clearance	730 mm
Horizontal Clearance	270 mm
Product Dimension (mm)	800 (L) x 410 (W) x 1200 (H)
Packing Dimension (mm)	900 (L) x 545 (W) x 1400 (H)
Approx. Product Weight	85 kg
Approx. Packing Weight	112 kg
Power	115-230 V, 50/60 Hz, 1hp, 370 W

Unit Consists Of :

NL 5002 X / 010 – P 001	Penetration Piston	1no.
NL 5002 X / 010 – P 002	Extension Rod for BS Penetration Piston	1no.
NL 5002 X / 001 – P 003	Dial Gauge Holder	1no.
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm	1no.
NL 7023 X / 009	Proving Ring 50kN	1no.

*1 Copy of Manual Instruction



ECO-SMARTZ ADVANCE CBR / MARSHALL LOADING FRAME 50 kN

Standard: CBR-EN 13286-47, BS 1377:4,
ASTM D1883, AASTHO T 193/
MARSHALL-EN 12697-34, 13108,
ASTM D1559, D6927-06, AASTHO T245,
BS598:107

Immediate Bearing Index

Newly invented bench mounting type machine, with rigid and compact design compare with previous model. By using DC motorised drive system to achieve more reliable and high accurate testing result.

*Supplied without accessories which have to be ordered separately.

FEATURES:-

- *Compact, bench-mounting design
- *Energy saving with DC power motor
- *Less vibration & noise during operation

Technical Specifications :

Model Number	NL 5002 X / 011
Capacity	50 kN
CBR Testing Speed	1.2 mm / min
MARSHALL Testing Speed	50.8 mm / min
Plunger Travel	100 mm
Vertical Clearance	680 mm
Horizontal Clearance	270 mm
Product Dimension	840 (L) x 455 (W) x 1310 (H) mm
Packing Dimension	1000 (L) x 560 (W) x 1500 (H) mm
Approx. Product Weight	185 kg
Approx. Packing Weight	205 kg
Power	220 V, 2.5 Amp, 50 / 60 Hz, 1 ph, 370 W

*1 Copy of Manual Instructions

Optional Accessories (CBR Test) :

Model Number	Accessories Description
NL 5002 X / 006 - P 001	Penetration Piston
NL 5002 X / 006 - P 002	Extension Rod for BS Penetration Piston
NL 5002 X / 005 - A 001	Platen Disc
NL 5002 X / 001 - P 003	Dial Gauge Holder
NL 7023 X / 009	Proving Ring 50 kN
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm



Marshall Set Up



CBR Set Up



CBR Accessories



MARSHALL Accessories

Optional Accessories (Mashall Test) :

Model Number	Accessories Description
NL 5002 X / 005 - A 002	4" Mashall Stability Mould
NL 5002 X / 005 - A 003	Flow Meter
NL 5002 X / 005 - A 004	Proving Ring 30 kN c/w Extended Load Piston
NL 7020 X / 004	Dial Indicator 10 x 0.01 mm

ADVANCE AUTOMATIC DIGITAL CONE PENETROMETER

Standard: BS 1377:2

Liquid Limit : Cone Method

Newly up graded design come with fully automated system for easy operation and high accuracy result.Used to determine the moisture content of clay soil pass from plastic to a liquid status.

FEATURES:-

- *Solid & compact design
- *With find height adjustable system
- *Selectable penetration timer
- *Immediate print result (Optional)



Technical Specifications :

Model Number	NL 5003 X / 005
Accuracy	0.01 mm
Penetration Range	Up to 50 mm
Display Unit	Digimatic Display
Product Dimension (mm)	310 (L) x 210 (W) x 500 (H)
Packing Dimension (mm)	340 (L) x 240 (W) x 470 (H)
Approx. Product Weight	5.5 kg
Approx. Packing Weight	6.5 kg
Power	220 V, 50 / 60 Hz, 1 ph

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5003 X / 005 – P 001	Penetration Test Cone 30° Angle	1no.
NL 5003 X / 002 – P 002	Test Gauge Disk	1no.
NL 5003 X / 005 – P 003	Sample Container Ø 55 x 40 mm	1no.

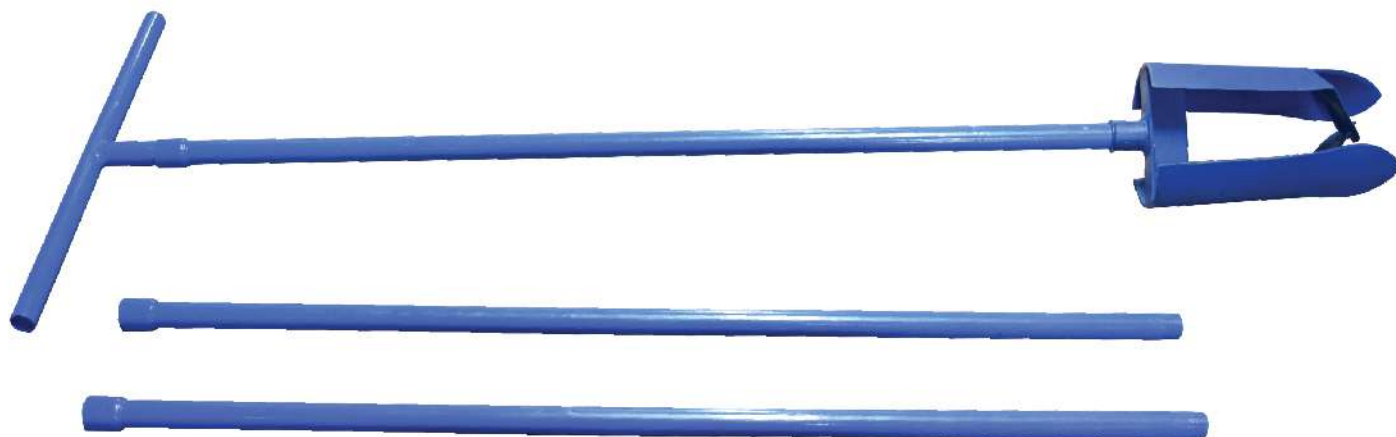
*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL MP – 100	Mini Printer c/w Cable
NL 5003 X / 005 – A 001	Straightedge (100 mm)



Mini Printer



HAND AUGER APPARATUS

Standard: ASTM D420/D1452, AASHTO T86/T202

Soil Sampling

The 80mm, 100mm & 150mm diameter hand auger apparatus used to obtain cohesive soil or sand. The auger head are constructed of heavy duty steel plates forming an open tube partly interlock at the cutting edge.

Technical Specifications :

Model Number	Part Description	A. Weight
NL 5005 X / 001	Ø 80 mm Hand Auger Set	6 kg
	Set Consists Of :	
	Auger Head Ø 80 mm x 1 no.	
	Auger Extension Rod x 3 nos.	
	Auger 'T' Handle x 1 no.	

Technical Specifications :

Model Number	Part Description	A. Weight
NL 5005 X / 002	Ø 100 mm Hand Auger Set	6.5 kg
	Set Consists Of :	
	Auger Head Ø 100 mm x 1 no.	
	Auger Extension Rod x 3 nos.	
	Auger 'T' Handle x 1 no.	

Technical Specifications :

Model Number	Part Description	A. Weight
NL 5005 X / 003	Ø 150 mm Hand Auger Set	8 kg
	Set Consists Of :	
	Auger Head Ø 150 mm x 1 no.	
	Auger Extension Rod x 3 nos.	
	Auger 'T' Handle x 1 no.	

Optional Accessories :

Model Number	Parts Description	A. Weight
NL 5005 X / 001 – A 001	Auger Head, Ø 80 mm	0.7 kg
NL 5005 X / 002 – A 002	Auger Head, Ø 100 mm	1 kg
NL 5005 X / 003 – A 003	Auger Head, Ø 150 mm	2.7 kg
NL 5005 X / 001 – A 004	Auger Extension Rod - 1 meter lg. (1pc)	2 kg
NL 5005 X / 001 – A 005	Auger 'T' Handle	1 kg

IN-SITU CBR APPARATUS

Standard: BS 1377, ASTM D1883, AASHTO T193

Field CBR Test Sets

Used on road construction to enable the bearing of soil to be determined quickly and efficiently.

Technical Specifications :

Model Number	NL 5006 X / 002
Dimension (mm)	1220 (L) x 410 (W) x 175 (H)
Approx. Weight	65 kg

Set Consists Of :

Model Number	Parts Description	Qty	A. Weight
NL 5006 X / 002 – P 002	50 kN Mechanical Jack (Single Speed) c/w Spherical Ball Attachment	1no.	13 kg
NL 5006 X / 002 – P 004	Extension Rod Set (Gauge Adaptor x 2, 102 mm x 2, 305 mm x 1, 610 mm x 1 & 915 mm x 1)	1set	13 kg
NL 5002 X / 006 – P 001	Penetration Piston (BS)	1set	3.5 kg
NL 5002 X / 006 – P 005	Penetration Piston (ASTM)	1set	3.5 kg
NL 5002 X / 001 – P 003	Dial Gauge Holder	1no.	0.5 kg
NL 5006 X / 002 – P 007	Surcharge Set (Slotted 9 kg, 4.5 kg & Annular 4.5 kg)	1set	18 kg
NL 5006 X / 002 – P 008	Datum Bar Set (1400 mm Lg, Datum Bar, Tripod Set & Holder Set)	1set	4 kg
NL 5006 X / 002 – P 009	Steel Carrying Case	1no.	23 kg
NL 5006 X / 002 – P 010	Tool Kits (Spanner No.17 & Allen Key 5 mm)	1set	0.2 kg
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm	1no.	0.2 kg
NL 7023 X / 009	50 kN Proving Ring	1no.	2.5 kg

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5006 X / 002 – A 001	Laboratory Conversion Frame
NL 5006 X / 002 – A 002	Plunger Guide Bar
NL 5006 X / 002 – A 003	50 kN Mechanical Jack (Double Speed) c/w Spherical Ball Attachment



NL 5006 X / 002 – A 001



NL 5006 X / 002 – A 002



NL 5006 X / 002 – A 003



LIQUID LIMIT APPARATUS

Standard: BS 1377, ASTM D4318

Casagrande Method

Particular design to determine the moisture content at which clay soil pass from plastic to liquid state.

Available in 2 models:

1. Hand operated through crank.
2. Electrical operated at 120 blows per minute based on standard.

Technical Specifications :

Model Number	NL 5008 X / 001
Type	Hand – Operated
Product Dimension (mm)	220 (L) x 168 (W) x 134 (H)
Case Dimension (mm)	215 (L) x 215 (W) x 134 (H)
Approx. Weight	2.5 kg (with case 4.7 kg)

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5008 X / 002 – P 001	Grooving Tool (BS)	1no.
NL 5008 X / 002 – P 003	Grooving Tool (ASTM)	1no.
NL 5008 X / 002 – P 004	Grooving Tool (AASHTO)	1no.
NL 5008 X / 002 – P 002	Calibration Block	1no.

*1 Copy of Manual Instruction



MOTORIZED LIQUID LIMIT APPARATUS

Standard: BS 1377, ASTM D4318

Casagrande Method

Particular design to determine the moisture content at which clay soil pass from plastic to liquid state.

Available in 2 models:

1. Hand operated through crank.
2. Electrical operated at 120 blows per minute based on standard.

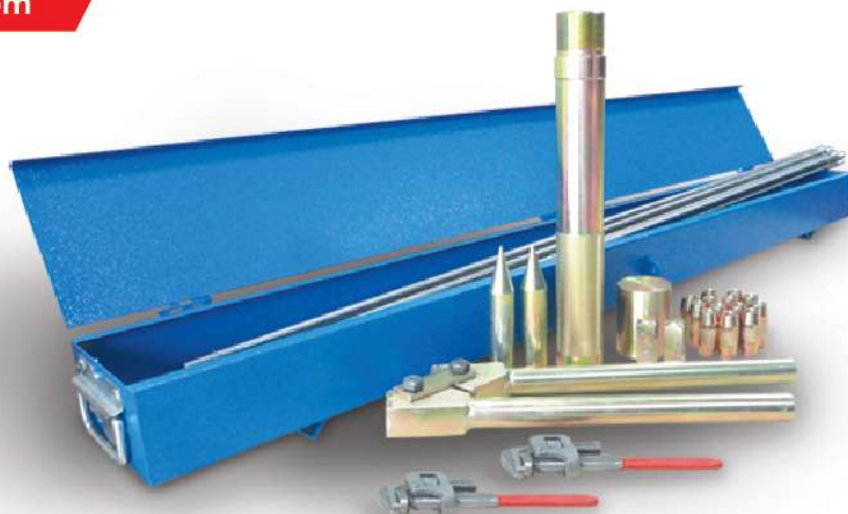
Technical Specifications :

Model Number	NL 5008 X / 002
Type	Motorized – Operated
Dimension (mm)	230 (L) x 135 (W) x 185 (H)
Approx. Weight	6.3 kg
Power	240 V, 1 ph, 50 / 60 Hz, 6 A, 0.075 W

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5008 X / 002 – P 001	Grooving Tool (BS)	1no.
NL 5008 X / 002 – P 003	Grooving Tool (ASTM)	1no.
NL 5008 X / 002 – P 004	Grooving Tool (AASHTO)	1no.
NL 5008 X / 002 – P 002	Calibration Block	1no.

*1 Copy of Manual Instruction



MACKINTOSH PROBE APPARATUS

Casagrande Method

This equipment is particularly useful for initial site investigation work in remote area. Use in conjunction with control boreholes considerable area can be investigated quickly and cost effectively. The set capable probing up to 13 meters depth depending on ground condition.

Technical Specifications :

Model Number	NL 5009 X / 001
Dimension (mm)	1230 (L) x 155 (W) x 125 (H)
Approx. Weight	27 kg

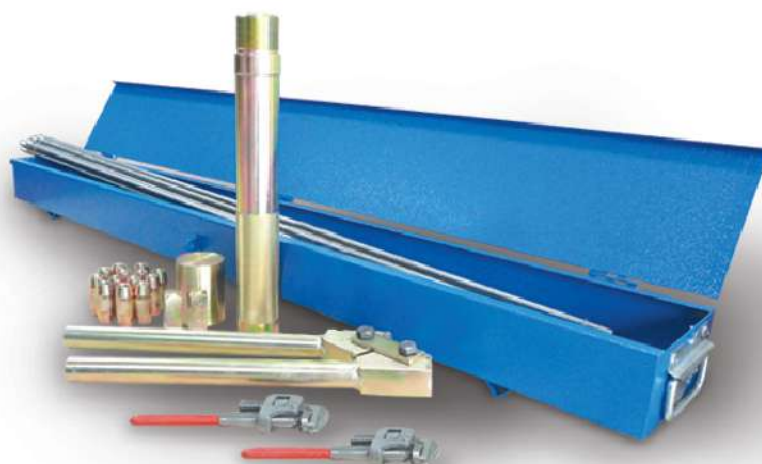
Set Consists Of :

Model Number	Parts Description	Qty
NL 5009 X / 001 – P 001	Penetration Rod (47¼ inch each)	13nos.
NL 5009 X / 001 – P 002	Coupling	13nos.
NL 5009 X / 001 – P 003	Pipe Wrenches (200 mm)	2nos.
NL 5009 X / 001 – P 004	Penetration Cone (MAC)	2nos.
NL 5009 X / 001 – P 005	Hammer Nut (MAC)	2nos.
NL 5009 X / 001 – P 006	Hammer (4.5 kg)	1no.
NL 5009 X / 001 – P 007	Lifting Handle	1no.
NL 5009 X / 001 – P 008	Heavy Duty Steel Carrying Case	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5009 X / 001 – A 009	Hand Jack Lifting Tool



JKR PROBE APPARATUS

In-Situ Sampling & Preparation

This equipment is particularly useful for initial site investigation work in remote area. Use in conjunction with control boreholes considerable area can be investigated quickly and cost effectively. The set capable probing up to 13 meters depth depending on ground condition.

Technical Specifications :

Model Number	NL 5009 X / 002
Dimension (mm)	1230 (L) x 155 (W) x 125 (H)
Approx. Weight	28 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5009 X / 001 – P 001	Penetration Rod (47¼ inch each)	13nos.
NL 5009 X / 001 – P 002	Coupling	13nos.
NL 5009 X / 001 – P 003	Pipe Wrenches	2nos.
NL 5009 X / 002 – P 004	Penetration Cone (JKR)	2nos.
NL 5009 X / 002 – P 005	Hammer Nut (JKR)	2nos.
NL 5009 X / 002 – P 006	Hammer (JKR)	1no.
NL 5009 X / 001 – P 007	Lifting Handle	1no.
NL 5009 X / 001 – P 008	Heavy Duty Steel Carrying Case	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5009 X / 001 – A 009	Hand Jack Lifting Tool



MACKINTOSH PROSPECTING KIT

In-Situ Sampling & Preparation

Used for initial site investigation work in remove area. Used in conjunction with control boreholes considerable areas can be investigated quickly and cost effectively.

Technical Specifications :

Model Number	NL 5009 X / 004
Dimension (mm)	1270 (L) x 250 (W) x 140 (H)
Approx. Weight	44 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5009 X / 004 – P 001	Penetration Rod 1 m (L)	10nos.
NL 5009 X / 004 – P 002	Coupling	10nos.
NL 5009 X / 001 – P 003	Pipe Wrench	2nos.
NL 5009 X / 004 – P 003	Standard Core Tube	1set
NL 5009 X / 004 – P 004	Clay Core Tube	1no.
NL 5009 X / 004 – P 005	Auger Tool	1no.
NL 5009 X / 004 – P 006	Short Driving Point	1no.
NL 5009 X / 004 – P 007	Long Driving Point	1no.
NL 5009 X / 004 – P 008	Tapping Tool Set	1set
NL 5009 X / 004 – P 009	Core Tube Adaptor	1no.
NL 5009 X / 004 – P 010	Driving Head	1no.
NL 5009 X / 004 – P 011	Clearing Rod	1no.
NL 5009 X / 004 – P 012	Hammer 4.5 kg	1no.
NL 5009 X / 001 – P 007	Lifting Handle	1no.
NL 5009 X / 004 – P 014	Rod Cleaning Set	1set
NL 5009 X / 004 – P 015	Steel Carrying Case	1no.

*1 Copy of Manual Instruction

MOTORIZED MACKINTOSH /JKR PROBE

In-Situ Sampling & Preparation

The equipment is particularly used for initial site investigation. Use in conjunction with control boreholes considerable are can be investigated quickly and cost effectively. Supplied complete with DC rechargeable power unit. The set capable probing to 13 meters depth, depend on ground condition. The unit comes with hoist lifting mechanism to pull out the extension rod after probing.



Technical Specifications :

Model Number	NL 5009 X / 005
Dimension (mm)	970 (L) x 770 (W) x 2300 (H)
Hammer Height	300 mm (MAC Probe), 280 mm (JKR Probe)
Hammer Weight	4.5 kg (MAC Probe), 5 kg (JKR Probe)
Approx. Weight	128 kg
Power	12 V DC, Rechargeable & 220 V, 1 ph, 8 A

Set Consists Of :

Model Number	Parts Description	Qty
NL 5009 X / 005 – P 010	Rod Adaptor	1no.
NL 5009 X / 001 – P 001	Penetration Rod 47¼ inch (L)	13nos.
NL 5009 X / 001 – P 002	Coupling	13nos.
NL 5009 X / 001 – P 003	Pipe Wrench 200 mm (L)	2nos.
NL 5009 X / 001 – P 004	Penetration Cone MAC	2nos.
NL 5009 X / 002 – P 004	Penetration Cone JKR	2nos.
NL 5009 X / 005 – P 001	Portable Control Unit	1no.
NL 5009 X / 001 – P 007	Lifting Handle	1no.
NL 5009 X / 001 – P 008	Heavy Duty Steel Carrying Case	1no.
NL 5009 X / 005 – P 002	JKR Counter Weight Piece, 0.5 kg	1no.
NL 5009 X / 003 – P 003	Tools Kit	1set

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5009 X / 001 – A 009	Hand Jack Lifting Tool

(Manual Operation) Accessories :

Model Number	Accessories Description
NL 5009 X / 001 – P005	Hammer Nut (MAC)
NL 5009 X / 001 – P006	Hammer (4.5 kg)
NL 5009 X / 002 – P005	Hammer Nut (JKR)
NL 5009 X / 002 – P006	Hammer (JKR)

PLATE BEARING EQUIPMENT

Standard: BS 1377:9, ASTM D1194,D1195, D1196

Bearing Capacity

Plate Bearing Equipment is used to estimate the bearing capacity of a soil under field loading condition.

Set Consists Of :

Model Number	Parts Description	Qty
NL 5010 X / 002 – P 001	500kN (50 Tons) Single Acting Hydraulic Cylinder with Spherical Seat	1no.
NL 5010 X / 002 – P 002	Hand Operated 2 Speed Pump c/w 4 m Hydraulic Hose	1set
NL DLG 100	Digital Load Gauge	1no.
NL 5010 X / 002 – P 004	Loading Plate Ø 305 mm x 32 mm	1no.
NL 5010 X / 002 – P 005	Carrying Case	1no.
NL 5010 X / 002 – P 007	Datum Bar 2.4 m (L) with Steel Feet	1set
NL 5010 X / 002 – P 008	Articulated Dial Gauge Support with Adjustment Device	4nos.
NL 5010 X / 002 – P 009	Tool Kit Set	1pck.
NL 7020 X / 001	Dial Gauge 25 mm x 0.01 mm	4nos.

*1 Copy of Manual Instruction

Technical Specifications :

Model Number	NL 5010 X / 002
Capacity	500 kN (50 Tons)
Approx. Weight	105 kg

Optional Accessories :

Model Number	Accessories Description
NL 5010 X / 002 – A 001	Loading Plate Ø 457 mm x 32 mm
NL 5010 X / 002 – A 002	Loading Plate Ø 610 mm x 32 mm
NL 5010 X / 002 – A 003	Loading Plate Ø 762 mm x 32 mm



Loading Plate



PROCTOR TEST APPARATUS

Standard: BS 1377/1924, ASTM D558/698/,
AASHTO T99/T134, EN 13286-2

Proctor Rammers & Moulds

All compaction equipment manufacture from platen heavy duty steel to protect against corrosion and rusty.

BS Standard :

NL 5011 X / 001 – A 001	Standard Proctor Mould
Body Diameter (Id x H)	Ø 105 mm with Body Height 115.5 mm
Volume	1000 ml
Approx. Weight	6 kg
NL 5011 X / 001 – A 002	Standard Proctor Rammer
Specification	2.5 kg - 300 mm Fall. Ø 50 mm
Dimension	Ø 60 mm x 565 mm
Approx. Weight	4 kg
NL 5011 X / 001 – A 003	Modified Proctor Rammer
Specification	4.5 kg - 450 mm Fall. Ø 50 mm
Dimension	Ø 60 mm x 820 mm
Approx. Weight	7 kg

EN Standard :

NL 5011 X / 003 – A 001	Proctor Mould (Type A)
Body Diameter (Id x H)	Ø 100 x 120 mm with Collar and Base Plate
Volume	924 ml
Approx. Weight	8 kg
NL 5011 X / 003 – A 002	Split Standard Proctor Mould (Type A)
	Similar to NL 5011 / X 003 – A 001
	But with Split Mould Body
NL 5011 X / 003 – A 003	Proctor Mould (Type B)
Body Diameter (Id x H)	150 x 120 mm with Collar and Base Plate
Volume	Ø 250 mm x 181 mm
Approx. Weight	13 kg
NL 5011 X / 003 – A 004	Split Modified Proctor Mould (Type B)
	Similar to NL 5011 / X 003 – A 003
	But with Split Mould Body
NL 5011 X / 003 – A 005	Proctor Rammer (Type A)
Specification	2.5 kg Fall Height 305 mm
Diameter	Ø 50 mm
Dimension	60 mm x 565 mm
Approx. Weight	6 kg
NL 5011 X / 003 – A 006	Proctor Rammer (Type B)
Specification	4.5 kg Fall Height 457 mm
Diameter	Ø 50 mm
Dimension	60 mm x 835 mm
Approx. Weight	8 kg



ASTM / AASHTO Standard

NL 5011 X / 002 – A 001	Standard Proctor Mould 4"
Body Diameter (Id x H)	Ø 4" x 4, 584"
Volume	944 ml
Approx. Weight	8 kg
NL 5011 X / 002 – A 002	Split Standard Proctor Mould Similar to
	NL 5011 X / 002 – A 001 But with Split Mould Body
Approx. Weight	8.2 kg
NL 5011 X / 002 – A 003	Modified Proctor Mould
Body Diameter (Id x H)	Ø 6" x 4, 584"
Volume	2124 ml
Approx. Weight	7.3 kg
NL 5011 X / 002 – A 004	Split Modified Proctor Mould Similar to
	NL 5011 X / 002 – A 003 But with Split Mould Body
Approx. Weight	7.5 kg
NL 5011 X / 002 – A 005	Standard Proctor Rammer
Specification	5.5 lb (2,495 kg) Ø 12" (304, 8 mm) Fall. Ø 2"
Dimension	Ø 60 mm x 565 mm
Approx. Weight	4 kg
NL 5011 X / 002 – A 006	Modified Proctor Rammer
Specification	10 lb (4,535 kg) Ø 18" (457, 2 mm) Fall. Ø 2"
Dimension	Ø 60 mm x 835 mm
Approx. Weight	7 kg



PROCTOR RING PENETROMETER

Standard: ASTM D1558

Proctor Penetrometers

The apparatus used to determine the bearing strength, compaction degree of sub grades and determining the penetration resistance of soil.

Technical Specifications :

Model Number	NL 5012 X / 001
Capacity	1 kN
Case Dimension (mm)	870 (L) x 250 (W) x 115 (H)
Approx. Weight	6.7 kg

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5012 X / 001- P 001	Proving Ring 1 kN with Conversion Chart	1no.
NL 5012 X / 001- P 002	Penetration Rod	1no.
NL 5012 X / 001- P 003	Extension Rod	1no.
NL 5012 X / 001- P 004	Penetration Cone 30° Angle	1no.
NL 5012 X / 001- P 005	Steel Handle	1no.

*1 Copy of Manual Instruction

AUGER POWER HEAD

Drilling Apparatus

Designed to drill small holes in every sector mounts an Emak 2-stroke engine with chrome cylinder and forged-steel drive shaft and connecting rod. The engine controls are grouped together on just one hand making them the ideal solution for single man. Auger Head **NEED TO ORDER SEPARATELY**

Technical Specifications :

Model Number	NL 5013 X / 001
Piston Displacement	52 CC
Engine	Yamaha 2.5kW Two Stroke
Fuel	Fuel Mixture
Operation	One Operator
Fuel Capacity	900 ml
Max. Drill Diameter	200 mm
Approx. Weight	12 kg (Excluding Auger)
Dimension (LWH)	550 x 400 x 280 mm (Excluding Auger)

Set Consists Of :

Model Number	Description	Qty
NL 5013 X / 001-P001	Set of Operation & Maintenance Tools	1 set

Optional Accessories :

Model Number	Parts Description
NL 5013 X / 001-A001	60mm Dia. x 800 mm lg. Auger Head
NL 5013 X / 001-A002	100mm Dia. x 800 mm lg. Auger Head
NL 5013 X / 001-A003	150mm Dia. x 800 mm lg. Auger Head
NL 5013 X / 001-A004	200mm Dia. x 800 mm lg. Auger Head


**NEW
2018**


A001

A002

A003

A004



POCKET PENETROMETER (SOIL)

Standard: D 2573-94

Proctor Penetrometers

For used to obtain quickly and easily an approximate measure of the shear strength of cohesive and semicohesive soils. Direct-reading scale in kgf/cm² - corresponds to equivalent unconfined compressive strength. Indicator sleeve retains reading after piston is release.

Technical Specifications :

Model Number	NL 5014 X / 001
Range	0 - 5 kgf/cm ²
Dimension (mm)	20 mm Dia. x 173 mm lgth
Approx. Weight	0.5 kg



SAND DENSITY CONE APPARATUS (6" DIAMETER)

Standard: ASTM D1556, AASHTO T191,
CNR No.22, NF P94-061-3

Sand Replacement Method

The Sand Density Cone and accessories are used for determination of the in-situ (in-place) density of soils. The apparatus is restricted to tests in soils containing particles not larger than 2" (50.8 mm) in diameter.

Technical Specifications :

Model Number	NL 5015 X / 001
Dimension	355 (L) x 355 (W) x 550 (H) mm
Approx. Weight	3.8 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5015 X / 001 – P 001	Flow Cone with Valve	1no.
NL 5015 X / 001 – P 002	Tray with Center Hole	1no.
NL 7046 P / 001	5 L Plastic Measuring Cylinder	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5015 X / 001 – A 001	Calibration Container
NL 7015 X / 001	600 / 300 Density Sand 50 kg / pck



BUDGET SAND DENSITY CONE APPARATUS (6½" DIAMETER)

Standard: ASTM D1556, AASHTO T191, CNR No.22, NF P94-061-3

Sand Replacement Method

This apparatus used to determine the in-situ of fine grained compacted soil.

Technical Specifications :

Model Number	NL 5015 X / 002
Dimension	Ø 300 mm x 450 mm
Approx. Weight	1.3 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5015 X / 002 – P 001	Cone Assembly c/w Valve	1no.
NL 5015 X / 002 – P 002	ABS Plastic Tray with Center Hole	1no.
NL 5015 X / 002 – P 003	Plastic Bottle 4.5 L	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5015 X / 002 – A 001	Calibration Container
NL 7015 X / 001	600 / 300 Density Sand 50 kg / pck



POCKET SHEAR VANE DEVICE

Standard: BS 1337: Part 7 :1990, BS 1337: Part 9 :1990

Determine Shear Strength of Soil

A scientifically designed soil testing instrument for the rapid determination of shear strength of cohesive soils, either in the field or in the laboratory. It permits the determination of a large number of strength values with different orientation of failure planes. The tester is simple to use and sample trimming is eliminated. All that is required is a reasonably flat surface 25 mm in diameter.

Technical Specifications :

Model Number	NL 5016 X / 001
Dimension (mm)	345 (L) x 275 (W) x 80 (H)
Approx. Weight	1 kg

Unit Consists Of :

Model Number	Specifications	Qty
NL 5016 X / 001 – P 001	Vane (Measuring Range 0 - 0.2 kg/cm ²)	1no.
NL 5016 X / 002 – P 002	Vane (Measuring Range 0 - 1 kg/cm ²)	1no.
NL 5016 X / 003 – P 003	Vane (Measuring Range 0 - 2.5 kg/cm ²)	1no.

*1 copy of manual instruction

SAND POURING CYLINDER SET

Standard: BS 1377-9/1924-2

Sand Replacement Method

Used to determine the in-situ density of fine grained compacted soil. The tests consists in digging a hole into the ground and then collect, dry and weigh the sampled soil.

Technical Specifications :

Model Number	Parts Description	Weight
NL 5017 X / 001	100 mm Diameter Sand Pouring Cylinder Set	9 kg
NL 5017 X / 002	150 mm Diameter Sand Pouring Cylinder Set	14 kg
NL 5017 X / 003	200 mm Diameter Sand Pouring Cylinder Set	19 kg

Sand Pouring Cylinder Set Parts :

Diameter	100 mm	150 mm	200 mm
Complete Set	NL 5017 X / 001	NL 5017 X / 002	NL 5017 X / 003
Top Cover	NL 5017 X / 001 – P001	NL 5017 X / 002 – P001	NL 5017 X / 003 – P001
Cylinder	NL 5017 X / 001 – P002	NL 5017 X / 002 – P002	NL 5017 X / 003 – P002
Density Tray	NL 5017 X / 001 – P003	NL 5017 X / 002 – P003	NL 5017 X / 003 – P003
Calibration Container	NL 5017 X / 001 – P004	NL 5017 X / 002 – P004	NL 5017 X / 003 – P004

Optional Accessories :

Model Number	Accessories Description
NL 7015 X / 001	600 / 300 Density Sand 50 kg / pck
NL 7014 X	Field Density Tools (Refer To Miscellaneous Page)



Field Density Tools



CORE CUTTER SET

Standard: BS 1377-9

Surface Soil Samplers

The core cutter is driven into the soil using the driving rammer. Then the core cutter is dug out, trimmed, weighed, and dried and the density and moisture content calculated.

Technical Specifications :

Model Number	NL 5018 X / 001
Dimension (mm)	150 (L) x 150 (W) x 1200 (H)
Approx. Weight	9.5 kg

Set Consist Of :

Model Number	Parts Description	Qty
NL 5018 X / 001 – P 001	Driving Rammer	1no.
NL 5018 X / 001 – P 002	Driving Dolly	1no.
NL 5018 X / 001 – P 003	Core Cutter - Ø 100 mm x 130 mm (L)	1no.



UNIVERSAL LOADING FRAME

Loading Frames : Accessories for Uniaxial And Unconfined Compression Tests

Special design for low capacity to carry compression test such as triaxial, unconfined and etc.

FEATURES:-

- *Large LED display board.
- *Accurate stepper motor speed control.
- *With microprocessor base.
- *Simple key pad control system.

Technical Specifications :

Model Number	NL 5019 X / 001
Capacity	10 kN
Speed Range	0.0001 mm / min - 4.8 mm / min
Platen Travel	100 mm
Dimension (mm)	310 (L) x 380 (W) x 1100 (H)
Approx. Weight	85 kg
Power	220 - 240 V, 50 / 60 Hz, 1 ph

AUTOMATIC TRIAXIAL SYSTEM

Standard : BS1377-7,1924-2,ASTM D2850,D4767,AASHTO T296,T297

Triaxial Test

Fully automated triaxial system specifically designed for soil testing laboratories for conducting UU,CU, and CD Triaxial and also unconfined test. During building constructions,-excavating,tunneling and similar applications have several effects on the subsoil structures and these effects are successfully simulated with Triaxial. Our triaxial system are fully automated tests on cylindrical undisturbed and remoulded soil sample.



Triaxial Loading Frame :

Model Number	NL 5019 X / 002
Capacity	10kN
Speedrange	0.00001 - 9.9999 mm/min
Platen Travel	80 mm
Max. Vertical Clearance	1100 mm
Approx. Dimension (LxWxH)	450x450x1350mm
Power	220V,1ph,375W,50/60 Hz
Approx. Weight	95 kg

Unconsolidated Undrained "UU" Test Consist of

Model Number	Description	Qty
NL 5019 X / 002 - P001	LOAD CELL (10kN) Including load ram,load button & electrical connction to data interface	1no
NL 5019 X / 002 - P002	3-CHANNEL,16 BIT DATA INTERFACE 1 off built-in 3-channel,16 bit data interface with RS323 interface for axial transducer (LVDT or digital gauge) pore water transducer and load cell.	1no
NL 5019 X / 002 - P003	CONFINING PRESSURE/VOLUME CONTROLLER (PVC) Technical Specifications :- Model Number : NL 5019 X / 001 - P003 Capacity : 2 mpa/100cc Approx. Dimension (LxWxH) : 850x400x150mm Power : 220V,1ph,120W,50/60 Hz Approx.Weight : 35 kg	1no
NL 5019 X / 002 - P004	DIGITAL AXIAL DIAL GAUGE Rang 25.4 mm with electrical connection for TKA data interface.Accuracy 0.003 mm & displayed to 0.001 mm	1no
NL 5019 X / 002 - P005	NL Modular Software in Windows Acquisition Only Standard Saturation and Consolidation Module B Check Standard Triaxial Testing Module Unconsolidated-undrained	1set
NL 5019 X / 002 - P006	Test Specimen Preparation Kit Consisting of top cap,base pedestal,3 part split former,2 part split mould, membrane stretcher,rubber membrane pack of 10,porous discs (2 units), O-Ring pack of 10 38 mm test specimen preparation kit	1set 1no
NL 5019 X / 002 - P007	Nylon Opaque Tubing-3500kPa (10 metres) The nylon-opaque tubing have an outer diameter of 6.0 mm and inner diameter of 4.0 mm. This tubing should be able to apply a pressure of 3500 kPa	1pack
NL 5019 X / 002 - P008	Water Tank : Made of Acrylic	1no
NL 5019 X / 002 - P009	TRIAxIAL CELL 50 MM Maximum cell pressure 2000kpa. Including top caps & base pedestals for 38 mm samples, plus all tubing & hydraulic connections	1no

*1 Copy of Manual Instruction

Optional Accessories for Consolidated Undrained "CU" & Consolidated Drained "CD" Test :

Model Number	Description	Qty
NL 5019 X / 002 - A001	Pore Pressure Transducer Maximum pressure 2000 kPa, accuracy 0.15 % of Full Range Output including: electrical connections for data interface.	1no
NL 5019 X / 002 - A002	De-airing block and valve for pore pressure transducer	1no
NL 5019 X / 002 - A003	2Mpa/100cc back pressure/volume controller Connections via RS232 port, Built-in 16 keys, 192*64 LCD, Back Pressure: 2Mpa, regulated and displayed to 1kPa, Maximum volume change: 100cc, measured to 1cu.mm (0.001ml), Automatic protection to prevent over pressure and volume.	1no
NL 5019 X / 002 - A004	Software Consolidated-undrained with pre pressure measurement-CU	1no
NL 5019 X / 002 - A005	Software Consolidated-drained with pre pressure measurement-CD	1no

SOIL SAMPLER APPARATUS

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

Soil Sampling

Used to obtain samples that adequately represent each surface material that is significant to the project design and construction. The apparatus complete with T – Handle with extension rod.

Technical Specifications :

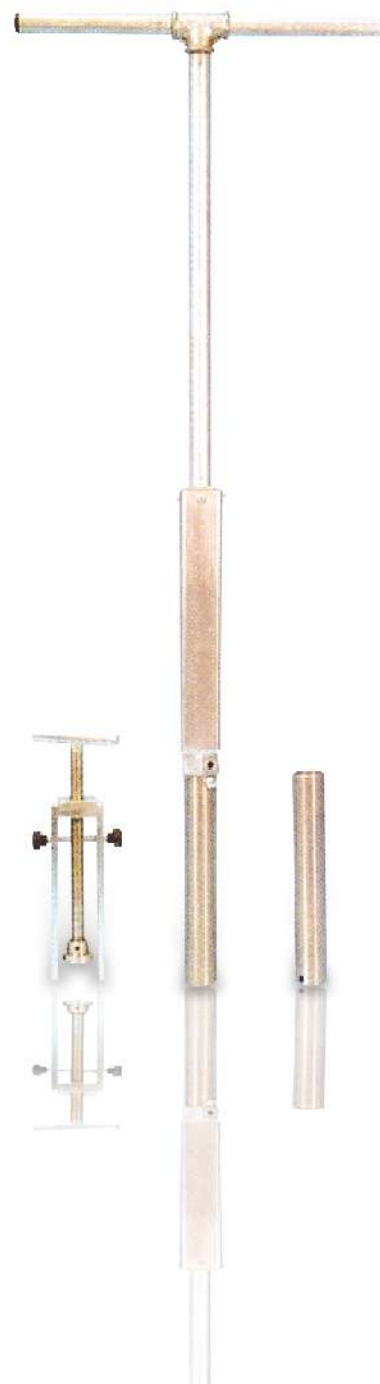
Model Number	NL 5020 X / 001
Approx. Weight	7 kg

Set Consist Of :

Model Number	Parts Description	Qty
NL 5042 X / 001 – P 008	'T' Handle	1no.
NL 5042 X / 001 – P 005	Extension Rod 1 meter (L)	1no.
NL 5042 X / 001 – P 011	Jarring Link 38 mm	1no.
NL 5020 X / 001 – P 001	Stainless Steel Sample Tube Ø 38 x 230 mm (L)	1no.

Optional Accessories :

Model Number	Accessories Description
NL 5020 X / 001 – A 001	Hand Operated Sample Extruder
NL 5042 X / 001 – P 010	Galvanized Steel Sample Tube Ø 38 x 230 mm (L)



VIBRATING COMPACTION HAMMER

Standard: EN 13286-4 (Annex A), BS 1377:4/BS 1924:2

Vibration Compaction Hammer

The hammer is used for compacting of Proctor and CBR Soil specimen. By changing appropriate tamping foot, it also can be used for compacting concrete cube or beam specimens and compacting asphalt in the percentage refusal density test (PRD Test). **Supplied without accessories** which have to be order separately.

Technical Specifications :

Model Number	NL 5021 X / 001
Alternate Code	DH 0810
Impact Rate	2900 / min
Dimension (mm)	440 (L) x 95 (W) x 240 (H)
Approx. Weight	6.3 kg
Power	240 V, 1 ph, 50 / 60 Hz, 1200 W

Optional Accessories :

Model Number	Accessories Description	Weight
NL 5021 X / 001 – A 001N	Supporting Frame	63 kg
NL 5021 X / 001 – A 002	Proctor Tamping Foot (Ø 100 mm)	1.2 kg
NL 5021 X / 001 – A 003	Proctor, CBR & PRD Tamping Foot Ø 145 mm	2.3 kg
NL 5021 X / 001 – A 004	100 mm Concrete Cube Tamping Foot 90 x 90 mm	1.7 kg
NL 5021 X / 001 – A 005	150 mm Concrete Cube Tamping Foot 140 x 140 mm	3.5 kg
NL 5021 X / 001 – A 006	Steel Shank 250 mm (L)	0.6 kg



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2018**



NL 5021 X / 001 - A004
& A005



NL 5021 X / 001 - A002,
A003 & A006



SURFACE SOIL SAMPLE APPARATUS

Standard: ASTM D2937, BS 1377:9

Surface Soil Samplers

Used to take samples of compacted fill or undisturbed soils and to evaluate density of compaction samples as the ground surface.

Technical Specifications :

Model Number	NL 5022 X / 001	NL 5022 X / 002
Dimension (mm)	Ø 73 x 66 (L)	Ø 100 x 130 (L)
Approx. Weight	10 kg	16 kg
Drop Hammer	5 kg	10 kg

Set Consist Of :

Model Number	Parts Description	Qty
NL 5022 X / 001 – P 001	'T' Handle	1no.
NL 5022 X / 001 – P 002	Hammer Guide Rod	1no.
NL 5022 X / 002 – P 003	Guiding Disc for Cutter	1no.
NL 5022 X / 002 – P 004	Hammer	1no.
NL 5022 X / 002 – P 005	Sampling Cutter	1no.

MOTORIZED UNCONFINED COMPRESSION APPARATUS

Standard: BS 1377:7, ASTM D2166, AASHTO T208

Loading Frames : Accessories for Uniaxial And Unconfined Compression Tests

Operate by moving platen through a mechanical gear. The apparatus come with rapid approach speed ensures rapid platen movement per hand wheel revolution designed to suit small specimen loading. Supplied complete with upper platen, proving ring with calibration certificate, penetration dial gauge 25 mm travel x 0.01 mm per division with gauge mounting bracket.

Technical Specifications :

Model Number	NL 5023 X / 001	NL 5023 X / 003	NL 5023 X / 004
Capacity	5 kN	0.6 kN	50 kN
Max. V. Clearance	300 mm		590 mm
Max. H. Clearance	140 mm		220 mm
Speed Rate (50 / 60 Hz)	1.0 / 1.25 mm / min	2.4 / 3.0 mm / min	1.0 / 1.25 mm / min
Dimension (mm)	310 (L) x 190 (W) x 540 (H)		470 (L) x 290 (W) x 815 (H)
Approx. Weight	16 kg		53 kg
Power	220 V, 50 / 60 Hz, 1 ph, 0.25 Hp		

NL 5023 X / 001 Consists Of :

Model Number	Parts Description	Qty
NL 5023 X / 001 – P 001	Proving Ring 5 kN	1no.
NL 5023 X / 001 – P 002	Specimen Plunger with Gauge Holder	1set
NL 7020 X / 001	Dial Indicator 25 mm x 0.01 mm	1no.

*1 Copy of Manual Instruction

NL 5023 X / 003 Consists Of :

Model Number	Parts Description	Qty
NL 5023 X / 003 – P 001	Proving Ring 0.6 kN	1no.
NL 5023 X / 003 – P 002	Specimen Plunger with Gauge Holder	1set
NL 7020 X / 001	Dial Indicator 25 mm x 0.01 mm	1no.

*1 Copy of Manual Instruction

NL 5023 X / 004 Consists Of :

Model Number	Parts Description	Qty
NL 7023 X / 005	Proving Ring 10 kN	1no.
NL 5023 X / 004 – P 002	Specimen Plunger with Gauge Holder	1set
NL 7020 X / 001	Dial Indicator 25 mm x 0.01 mm	1no.

*1 Copy of Manual Instruction

NL 5023 X / 004 Optional Accessories :

Model Number	Accessories Description
NL 7023 X / 009	Proving Ring 50 kN



NL 5023 X / 004



NL 5023 X / 001
NL 5023 X / 003

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PARTICLE SIZE ANALYSIS OF SOIL APPARATUS

Standard: ASTM D422, AASHTO T88 / UNE 103.102

Particle Size Analysis

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.

Technical Specifications :

Model Number	NL 5024 X / 001
Approx. Weight	19 kg (Total Set)

Set Consists Of :

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

Optional Accessories :

Model Number	Accessories Description
NL 7029 CM / 002	Sodium Carbonate (1000 g)



ECO-SMARTZ AUTOMATIC PROCTOR / CBR SOIL COMPACTOR

Standard: EN 13286-47 / BS 1377:4 / ASTM D698, D1557, D1183 / AASTHO T99, T108, T193

Automatic Proctor / CBR Compactors

Newly upgraded model by using ECO-SMARTZ system for energy saving and consistency operation. Solid and compact design allow uniform and correct compaction of Proctor and CBR sample.

FEATURES:-

- *Powered by ECO-SMARTZ system for energy saving & consistence operation
- *Single version mechanism for most international standard
- *Pre-set blow system ensure even compaction
- *Solid state controls reliability & ease of maintenance
- *Separated control box unit protect again vibration damage

Technical Specifications :

Model Number	NL 5025 X / 005
Blow Rate	30 blows / min
Adjustable Rammer Weight	2.5 kg / 4.5 kg
Adjustable Drop Height	2.5 kg (300 mm / 12", 450 mm / 18")
Product Dimension (mm)	490 (L) x 360 (W) x 1370 (H)
Packing Dimension (mm)	590 (L) x 460 (W) x 1570 (H)
Approx. Product Weight	150 kg
Approx. Packing Weight	180 kg
Power	220 V, 4.8 Amp, 50 / 60 Hz, 1 ph, 370 W

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5025 X / 005 – P 001	Digimatic Control Unit	1no.
NL 5025 X / 005 – P 002	50 mm Rammer Plunger	1no.
NL 5025 X / 005 – P 003	2" Rammer Plunger	1no.
NL 5025 X / 005 – P 004	Lifting Rammer 2.5 kg	1no.
NL 5025 X / 005 – P 005	Counter Weight Rod 2 kg	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5025 X / 005 – A 001	Soundproof Security Cabinet
NL 5001 X Series	All Types of NL CBR Moulds
NL 5011 X Series	All Types of NL Proctor Moulds





NL 5026 B / 001



NL 5026 B / 002

LINEAR SHRINKAGE MOULDS

Standard: BS 1377-2

Linear Shrinkage

This test covers the determination of linear shrinkage of soils and indicates the plastic properties of soils with low clay content.

Technical Specifications :

Model Number	NL 5026 B / 001	NL 5026 B / 002
Specimen Size	140 (L) x 12.5 (R) mm	254 (L) x 12.5 (R) mm
Dimension	160 (L)x32(W)x 20(H) mm	274(L)x32(W)x 20(H) mm
Material	Brass	Brass
Approx. Weight	0.25 kg	0.40 kg

DYNAMIC CONE PENETROMETER

Standard: TRL, ASTM D 6951/ D 6951M

Dynamic Penetrometers

Designed for the rapid in-situ measurement of the structure properties of existing road pavement 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.

Technical Specifications :

Model Number	NL 5027 X / 001
Dimension (mm)	1060 (L) x 170 (W) x 140 (H)
Approx. Weight	26 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5027 X / 001 – P 001	Guide Rod Handle	1no.
NL 5027 X / 001 – P 002	Sliding Hammer – 8kg	1no.
NL 5027 X / 001 – P 003	Guide Rod	1no.
NL 5027 X / 001 – P 004	Coupling Guide	1no.
NL 5027 X / 001 – P 005	Hand Guard Plate	1no.
NL 5027 X / 001 – P 006	Coupling Clamping Ring	1no.
NL 5027 X / 001 – P 007	Penetration Rod	1no.
NL 5027 X / 001 – P 008	Penetration Cone 60° x Ø 20 mm	2nos.
NL 5027 X / 001 – P 009	Base Guiding Piece	1no.
NL 5027 X / 001 – P 010	Tools Kit Set	1no.
NL 5027 X / 001 – P 011	Steel Carrying Case	1no.
NL 7055 X / 004	Steel Ruler 1 m (L)	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Description
NL 5009 X / 001 - P007	Lifting Handle
NL 5027 X / 001 - A012	Hand Jack Lifting Tool



NL 5009 X / 001 - P007



NL 5027 X / 001 - A012



MOTORISED DYNAMIC CONE PENETROMETER

Standard: TRL, UK

Dynamic Penetrometers

By using DC rechargeable power supplied for whole site operation for the rapid in-situ measurement of the structure properties of existing road pavement 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.

Technical Specifications :

Model Number	NL 5027 X / 002
Dimension (mm)	950 (L) x 750 (W) x 1310 (H)
Sliding Hammer	8 kg
Hammer Falling Height	575 mm
Approx. Weight	125 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5027 X / 002 – P 001	DC Rechargeable Power Unit	1no.
NL 5027 X / 002 – P 002	Rod Extractor	1no.
NL 5027 X / 001 – P 006	Coupling Clamping Ring	1no.
NL 5027 X / 001 – P 007	Penetration Rod	1no.
NL 5027 X / 001 – P 008	Penetration Cone	2nos.
	60° x Ø 20 mm	
NL 5027 X / 001 – P 010	Tools Kit Set	1no.
NL 5027 X / 001 – P 011	Steel Carrying Case for Accessories	1no.

*1 Copy of Manual Instruction





PROCTOR PENETROMETER APPARATUS

Standard: ASTM D1558

Dynamic Penetrometers

Used to determine the setting time of the mortar fraction in concrete mixes with slump greater than zero, by testing mortar sieved from mix.

Technical Specifications :

Model Number	NL 5028 X / 001
Dimension (mm)	580 (L) x 250 (W) x 55 (H)
Approx. Weight	5 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5028 X / 001 – P 001	Needle Point Set (Set of 9 pcs.)	1set
NL 5028 X / 001 – P 002	Spring Loading Device (1 - 100 kN)	1no.
NL 5028 X / 001 – P 003	Penetration Needle with Tool	1set
NL 5028 X / 001 – P 004	Carrying Case	1no.

*1 Copy of Manual Instruction



SHRINKAGE LIMIT SET

Standard: ASTM D427, AASHTO T92,
UNE 103-108, UNI 10014,
NF XP94-060-1

Shrinkage Limit

The Shrinkage Limit Set consists of a selection of items needed to perform shrinkage limit testing, per ASTM and AASHTO testing standards.

Technical Specifications :

Model Number	NL 5030 X / 001
Approx. Weight	1.05 kg
Case Dimension	340 (L) x 280 (W) x 80 (H) mm

Set Consists Of :

Model Number	Parts Description	Qty
NL 5030 X / 001 – P 001	Shrinkage Dish Ø 44mm x 12mm (H)	2nos.
NL 5030 X / 001 – P 002	Crystallising Dish Ø 57mm x 31mm Deep	1no.
NL 5030 X / 001 – P 003	Shrinkage Prong Plate, Manufactured from Transparent Acrylic & Fitted with 3 Metal Prongs	1no.
NL 5031 X / 001 – P 002	Mixing Porcelain Disc	1no.
NL 7000 G / 002	Glass Measuring Cylinder 25 ml	1no.
NL 7011 SS / 001	Flexible Spatula 100 mm (L)	1no.
NL 5030 X / 001 – P 007	Carrying Case	1no.



PLASTIC LIMIT SET

Standard: ASTM D4318, AASHTO T90, BS 1377-2, UNE 103-104, UNI 10014

Shrinkage Limit

The Plastic Limit Set consists of a selection of equipment required to perform the plastic limit test in accordance with ASTM and AASHTO specifications.

Technical Specifications :

Model Number	NL 5031 X / 001
Approx. Weight	2 kg
Case Dimension	340 (L) x 280 (W) x 80 (H) mm

Set Consists Of :

Model Number	Parts Description	Qty
NL 7030 G / 005	Glass Plate 300 x 200 x 6 mm	1no.
NL 5031 X / 001 – P 001	Rod Caliper Ø 3mm	1no.
NL 5031 X / 001 – P 002	Mixing Porcelain Dish	1no.
NL 7011 SS / 001	Flexible Spatula 100 mm (L)	1no.
NL 5031 X / 001 – P 003	Aluminium Moisture Tin Ø 55 x 35 mm	6nos.
NL 5031 X / 001 – P 004	Carrying Case	1no.

ELECTRICAL DENSITY GAUGE (EDG)

ASTM D7698, ASTM D1556, ASTM D2167, ASTM 2937, ASTM 4564, ASTM 6938, ASTM D 2216, ASTM D 4643, ASTM D 4744, ASTM D 4959

Soil Moisture & Density

Technical Specifications :

Model	NL 5032 X / 001
Alternate Code	EDG - IS
Soil Compaction Range	Standard field compaction range
Test Range Depth	30 cm
Control Device	Compact steel case with touch screen
Soil Sensor Probe	Internal Built-In
Data Transfer	USB Port or Bluetooth (Optional)
GPS Accuracy	3 meters (optional)
Wet Density Range	Typical Compacted Earth Sites Range
Dry Density Range	Within 3% of standard tests
Moisture Content Range	Typical Compacted Earth Sites Range
Moisture Content Accuracy	Within 2 % of standard tests
Operating Temperature	0 - 50 °C
Ambient Operating Humidity	5 - 90 %, non-condensing
Power	Li Ion Battery (AAA Battery Optional)
Battery Life	Approx. 20 Hours
Battery Charger	240 V 50/60Hz
Case Dimensions	420(L) x 330(W) x 220(H) mm
Weight	5.5 kg

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.

Unit Consists Of :

Model Number	Description	Qty
NL 5032 X / 001 - P001	Touch Screen Control Device	1 unit
NL 5032 X / 001 - P002	Dart Template	1 pc.
NL 5032 X / 001 - P003	Darts (4 pcs/set)	1 set.
NL 5032 X / 001 - P004	Temperature Probe	1 set.
NL 5032 X / 001 - P005	Hammer	1 no.
NL 5032 X / 001 - P006	Charger & Transmission Cable	1 set.
NL 5032 X / 001 - P007	Solid Water Prove Carry Case	1 unit

*1 copy of manual instruction

Optional Accessories :

Model Number	Description
NL 5032 X / 001 - A001	GPS Device
NL 5032 X / 001 - A002	Bluetooth Device



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RELATIVE DENSITY APPARATUS

Standard: ASTM D4253/D4254,
pr EN 13286-5

Relative Density of Cohesionless Soil

This method covers the determination of the maximum dry density and water content of cohesionless materials when compacted using a vibrating table.

Technical Specifications :

Model Number	NL 5033 X / 001
Approx. Weight	330 kg
Power	220 V, 1 ph, 50 / 60 Hz

Set Consists Of :

Model Number	Parts Description	Qty
NL EITC – 100	Eco-Smartz Timer Controller	1 no.
NL 5033 X / 001 – P 001	Vibrating Table	1 no.
NL 5033 X / 001 – P 002	Relative Density Mould 0.5 cu. ft	1 set
NL 5033 X / 001 – P 003	Relative Density Mould 0.1 cu. ft	1 set
NL 5033 X / 001 – P 004	Surcharge Weight & Base with Handle, ASTM 0.5 cu. ft Mould	1 no.
NL 5033 X / 001 – P 005	Surcharge Weight & Base with Handle, ASTM 0.1 cu. ft Mould	1 no.
NL 5033 X / 001 – P 006	Measuring Device	1 set

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5033 X / 001 – A 001	Surcharge Weight & Base with Handle, EN 0.5 cu. ft Mould
NL 5033 X / 001 – A 002	Sound Proofing Cabinet

CONSTANT HEAD PERMEAMETERS

Standard: ASTM D2434, AASHTO T215, BS 1377-5

Constant Head Apparatus

It is used for testing permeability of granular soil which are sands & gravels. It consists of a transparent permeability cell mounted on a detachable aluminium top & base plate. The cylinder has pressure points at different levels & connected to the manometer & to the constant level tank. Two different cell available (75 mm & 114 mm diameter).

Technical Specifications :

Item Description	Permeability Cell
Model Number	NL 5034 X / 001
Nominal Cell Internal Diameter	75 mm
Take-Off Point	3
Cell Wall	Transparent Arcylic
Top & End Plate	Alloy Aluminium Plate

Complete Set :

Model Number	Parts Description	Dimension	Approx. Weight	Qty
NL 5034 X / 001- P 001	Constant Head Permeability Cell Ø 75 mm	190 x 125 x 410 mm	2.8 kg	1no.
NL 5034 X / 001- P 002	Manometer Tubes & Stand	65 x 190 x 1170 mm	3.9 kg	1no.
NL 5035 X / 001- P 004	De-Airing Tank c/w Bracket	200 x 200 x 480 mm	7.0 kg	1no.
NL 5034 X / 001- P 005	Rubber Hose	4 meters Length	0.5 kg	1set
NL 7031 X / 001	Digital Stop Watch	-	-	1no.

Optional Accessories :

Model Number	Accessories Description
NL 5034 X / 001 - A 001	Portable Panel Stand c/w Roller Wheel
NL 5034 X / 001 - P 004	Constant Head Permeability Cell Ø 114 mm
NL 5034 X / 001 - P 002	Manometer Tubes & Stand (Additional for Cell Ø114)



NL 5035 X / 001 - P004



NL 5034 X / 001 - A001

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FALLING HEAD PERMEAMETERS

Standard: ASTM D2434, AASHTO T215, BS 1377-5

Falling Head Apparatus

Used to determine the permeability of fine-grained soil such as clay-like or silty soil. Flow of water through the specimen is observed by monitoring the rate of fall water in tube.

Technical Specifications :

Model Number	NL 5035 X / 001
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Technical Specifications :

Model Number	Parts Description	Dimension	Approx.Weight	Qty
NL 5035 X / 001 – P 002	Permeability Cell Ø 4"	Ø 130 x 220 mm	7.8 kg	1no.
NL 5035 X / 001 – P 001	Soaking Reservoir with Cock Permeability Cell	Ø 265 x 230 mm	3.1 kg	1no.
NL 5035 X / 001 – P 003	Manometer Tubes & Stand	65 x 190 x 1400 mm	3.9 kg	1no.
NL 5035 X / 001 – P 004	De-Airing Tank c/w Bracket	200 x 200 x 480 mm	7 kg	1no.
NL 5034 X / 005	Rubber Hose	4 meters Length	0.5 kg	1set

Optional Accessories :

Model Number	Accessories Description
NL 5034 X / 001 – A 001	Portable Panel Stand c/w Roller Wheel





UNIVERSAL EXTRUDER

Standard: ASTM D698/D1587/D1883,
BS 598-107/1377-4/1924-2

Extruding Soil Samples

Allow the marshall CBR and proctor sample 4", 6", 100 mm and 150 mm to be easily removed from the mould.

Technical Specifications :

Model Number	NL 5036 X / 004
Dimension (mm)	Ø 280 x 446 (H)
Ram Travel	183 mm - 243 mm
Approx. Weight	28 kg

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5036 X / 004 – P 001	4" Plunger	1no.
NL 5036 X / 004 – P 002	6" Plunger	1no.
NL 5036 X / 004 – P 003	Proctor / Marshall Retaining Disc	1no.
NL 5036 X / 004 – P 009	Bottle Hydraulic Jack - 3T	1no.

*1 copy of manual instruction



AUTOGRAPHIC UNCONFINED COMPRESSION APPARATUS

Standard: BS 1377:7

Soil Strength

Portable type - to determine unconfined compressive strength. The machine design with autographic, the recording chart is raised automatically when the handle is turn to compress the spring.

Technical Specifications :

Model Number	NL 5037 X / 001
Dimension (mm)	350 (L) x 250 (W) x 600 (H)
Approx. Weight	15 kg

Unit Consists Of :

Model Number	Parts Description	Qty
NL 5037 X / 001 – P 001	Calibrated Spring 2N, 4N, 8N & 16N	1set
NL 5037 X / 001 – P 002	Paper Chart Recorded 100 pcs / pack	1pck.

*1 Copy of Manual Instruction

PEAT AUGER SET

Sampling Apparatus

NL Peat Auger Set for sampling peats and soft clays comes complete with accessories allowing sampling down to a depth of 10 meters in suitable conditions. Supplied in a strong transit carry case.



Technical Specifications :

Model Number	NL 5038 X / 001
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Unit Consists Of :

NL 5038 X / 001 - P001	'T' Handle c/w Synthetic Detachable Grip	1no
NL 5038 X / 001 - P002	100 mm Edelman Auger	1no
NL 5038 X / 001 - P003	Peat Sampler Unit	1no
NL 5038 X / 001 - P004	Ø20 mm Breadth Bend Spatula	1no
NL 5038 X / 001 - P005	Extension Rod (Full Length)	9nos
NL 5038 X / 001 - P006	Extension Rod (Half Length)	2nos
NL 5038 X / 001 - P007	Maintenance Kit	1set
NL 5038 X / 001 - P008	Aluminium Transport Case	1no



SAMPLE TUBE EXTRUDER Ø 38 mm

Standard: ASTM D698/D1587/D1883,
BS 598-107/1377-4/1924-2

Soil Sampling

This Sample Tube Extruder comprise a vertically mounted, level action, hydraulic jack with the body extended to form a chamber which accommodate standard 38mm diameter sample.

Technical Specifications :

Model Number	NL 5039 X / 001
Dimension (mm)	Ø 75 x 670 (H)
Ram Travel	320 mm (L)
Approx. Weight	11 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5039 X / 001 – P 001	Extruder Jack with Handle	1set
NL 5039 X / 001 – P 002	Trimming Saw	1no.
NL 5039 X / 001 – P 003	Extruder Plunger	1no.

Optional Accessories :

Model Number	Accessories Description
NL 5039 X / 001 – A 001	Aluminium Split Former Ø 38 x 76 mm (L)
NL 5020 X / 001 – P 001	Stainless Steel Sample Tube Ø 38 x 230 mm (L)
NL 5042 X / 001 – P 009	Plated Steel Sample Tube Ø 38 x 230 mm (L)



COMPACTION FRACTION TESTER

Standard: BS 1337: Part 7 :1990, BS 1337: Part 9 :1990

Water Content Determination

This Compaction Fraction Tester Apparatus consist of steel open ended cylinder and steel rammer striking face, it used to determine the optimum water content (water content at maximum compaction) of a soil. Material to be tested is adjusted to five moisture contents that are individually compacted in a mould by a steel rammer striking face.

Technical Specifications :

Model Number	NL 5040 X / 001	
Mould Size	ID Ø152 x 250 (H) mm c/w Base Plate	
Approx. Mould Weight	9 kg	
Tamper Size	Ø 38 x 320 (L) mm	
Approx. Tamper Weight	1 kg	

Set Consists Of :

Model Number	Specifications	Qty
NL 5040 X / 001 - P001	Steel Open Ended Cylinder ID Ø152 x 250 (L) mm	1no.
NL 5040 X / 001 - P002	Steel Rammer Striking Face Ø40 mm	1no.

HAND OPERATED VERTICAL UNIVERSAL EXTRUDER

Standard: ASTM D698/D1587/D1883,
BS 598-107/1377-4/1924-2

Soil Samples

A free seating unit with hand pump and hydraulic jack. This Vertical Universal Extruder has maximum extruding force of 8 tons and a total ram stroke of 500 mm. The extruder head has external thread and can attached all range of adaptors to enable specimens to be extruded from 38 to 152 mm diameter samples specimens. All the extruder kits have to order separately.



Technical Specifications :

Model Number	NL 5041 X / 002
Dimension (mm)	600 (L) x 390 (W) x 720 (H)
Maximum Force	8 tons
Ram Diameter	30 mm
Max. Ram Stroke	500 mm
Approx. Weight	29 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5041 X / 002 – P 001	Hydraulic Sample Jack	1no.
NL 5041 X / 002 – P 002	*T' Base Set	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5041 X / 002 – A 001	Adaptors Kit Set (38, 50, 100 mm, Core Cutter, Marshall Mould, Proctor & CBR Moulds)
NL 5041 X / 002 – A 002	Adaptor Kit Set for U4 Tube
NL 5041 X / 002 – A 003	Extension Plunger Rod 250 mm Lg.
NL 5041 X / 002 – P 009	Sampling Tube c/w End Cap - Ø 38 mm x 230 mm (L)
NL 5041 X / 002 – P 011	Sampling Tube c/w End Cap - Ø 50 mm x 230 mm (L)



With Extrusion Kit



Sample Tube & Moulds



Adaptor Kit Set

SOIL SAMPLING APPARATUS

Standard: ASTM D420/D1452,
AASHTO T86/T202, CNR A. VI N. 25

In-Situ Sampling & Preparation

The Kit contains a range of selected item for boring and sampling up to 150 mm diameter.



NL 5039 X / 001

Technical Specifications :

Model Number	NL 5042 X / 001
Dimension (mm)	1060 (L) x 300 (W) x 200 (H)

Set Consists Of :

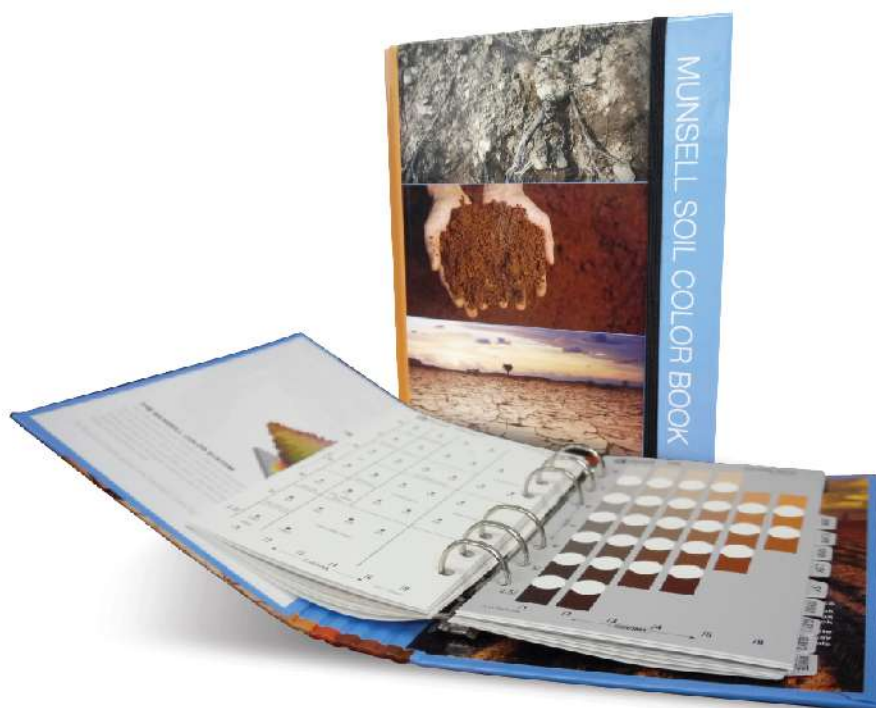
Model Number	Parts Description	Qty
NL 5005 X / 002 – A 002	Hand Auger Ø 100 mm	1no.
NL 5005 X / 003 – A 003	Hand Auger Ø 150 mm	1no.
NL 5042 X / 001 – P 003	Dutch Auger Head	1no.
NL 5042 X / 001 – P 004	Gravel Auger Head Ø 150 mm	1no.
NL 5042 X / 001 – P 005	Extension Rod 1 m (L)	10nos.
NL 5009 X / 001 – A 003	Pipe Wrenches 200 mm (L)	2nos.
NL 5005 X / 001 – A 005	Auger 'T' Handle	1no.
NL 5042 X / 001 – P 008	Steel Chisel	1no.
NL 5042 X / 001 – P 009	Sample Tubes Ø 38 x 230 mm (L)	10nos.
NL 5042 X / 001 – P 010	Sample Tube Adaptor Ø 38	2nos.
NL 5042 X / 001 – P 011	Jarring Link 38 mm	1no.
NL 5042 X / 001 – P 012	Steel Carrying Case	1no.

*1 Copy of Manual Instructions

Optional Accessories :

Model Number	Accessories Description
NL 5042 X / 001 – P 001	Sample Tube Ø 50 x 230 mm (L)
NL 5042 X / 001 – P 006	Jarring Link 50 mm
NL 5039 X / 001	Sample Tube Extruder Apparatus
NL 5042 X / 001 - P013	Sample Tube Adaptor Ø 50





SOIL COLOUR CHART

Determination of Soil Colour

The set consists of 7 constant hue charts on a neutral grey chart stock. Apertures cut between adjacent colours facilitate viewing so that the soil sample may be evaluated directly against the standard colours. Included in the set is a Gley Colour Chart for submerged soils. This displays 28 matt colour chips, weak cromas & neutrals on value level 4 to 7 for hues, 5GY, 5G, 5BG & 5B. Charts, diagrams & interleaves are fitted into a pocket-sized loose leaf binder.

Technical Specifications :

Model Number	NL 5043 X / 001
Dimension (mm)	170 x 250 mm approx.
Approx. Weight	400 g

CONSOLIDATION APPARATUS

Standard: BS 1377-5, ASTM D2435, AASHTO T216, NF P94 090-1

Continuous Consolidation Apparatus

Designed to provide reliable results from a unit which is compact without sacrificing accuracy and repeatability. It comes with triple beam ratio and compact design ensures space saving.



Technical Specifications :

Model Number	NL 5044 X / 001
Load Capacity	8800 kPa on Ø 50 mm Specimen
Dimension (mm)	711 (L) x 203 (W) x 508 (H)
Frame	Cast Aluminium & Platen Steel

Set Consists Of :

Model Number	Parts Description	Qty
NL 5044 X / 001 – P 001	Basic Consolidation Unit with Hanger	1no.
NL 5044 X / 001 – P 002	Ø 50 mm Consolidation Cell	1no.
NL 5044 X / 001 – P 003	Weight Set Hanger	1no.
NL 7020 X / 004	Dial Indicator 10 mm x 0.01 mm	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5044 X / 001 – A 001	Weight Set 50 kg, 4 x 10 kg, 1 x 5 kg, 2 x 2 kg, 1 x 1 kg
NL 5044 X / 001 – A 002	Weight Set 100 kg, 9 x 10 kg, 1 x 5 kg, 2 x 2 kg, 1 x 1 kg
NL 5044 X / 001 – A 003	Table Top Bench
NL 7020 X / 011	Dial Indicator 12 mm x 0.002 mm





HORIZONTAL UNIVERSAL MOTORISED HYDRAULIC EXTRUDER

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

Extruding Soil Samples

Motorised hydraulic extruder of undisturbed and disturbed sample from thin wall tube, having Ø 38 to Ø 150 mm with maximum length up to 1000 mm.

Technical Specifications :

Model Number	NL 5045 X / 001
Dimension (mm)	3700 (L) x 1300 (W) x 1300 (H)
Max. Stroke	1000 mm (L)
Approx. Weight	280 kg
Power	220 V, 1 ph, 50 / 60 Hz, 750 W

Set Consists Of :

Model Number	Parts Description	Qty
NL 5045 X / 001 – P 001	Sample Extrusion Kit Set Ø 38 mm	1 set
NL 5045 X / 001 – P 002	Sample Extrusion Kit Set Ø 50 mm	1 set
NL 5045 X / 001 – P 003	Sample Extrusion Kit Set Ø 100 mm	1 set
NL 5045 X / 001 – P 004	Sample Extrusion Kit Set Ø 150 mm	1 set

Optional Accessories :

Model Number	Accessories Description
NL 5045 X / 001 – A 001	U4 Tube Sample Extrusion Kit Set
NL 5045 X / 001 – A 002	U3 Tube Sample Extrusion Kit Set
NL 5045 X / 001 – A 003	U2 1/2 Tube Sample Extrusion Kit Set
NL 5045 X / 001 – A 004	U2 Tube Sample Extrusion Kit Set



HORIZONTAL UNIVERSAL MANUAL SCREW EXTRUDER

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

Extruding Soil Samples

The hand operated unit extrudes samples from Ø 38 to Ø 150 mm with maximum stroke of 650 mm.

Technical Specifications :

Model Number	NL 5046 X / 001
Dimension (mm)	1700 (L) x 700 (W) x 1200 (H)
Max. Stroke	680 mm (L)
Approx. Weight	121 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5046 X / 001 – P 001	Sample Extrusion Kit Set Ø 38 mm	1set
NL 5046 X / 001 – P 002	Sample Extrusion Kit Set Ø 50 mm	1set
NL 5046 X / 001 – P 003	Sample Extrusion Kit Set Ø 100 mm (Proctor)	1set
NL 5046 X / 001 – P 004	Sample Extrusion Kit Set Ø 150 mm (CBR)	1set

Optional Accessories :

Model Number	Accessories Description
NL 5046 X / 001 – A 001	U4 Tube Sample Extrusion Kit Set
NL 5046 X / 001 – A 002	U3 Tube Sample Extrusion Kit Set
NL 5046 X / 001 – A 003	U2 1/2 Tube Sample Extrusion Kit Set
NL 5046 X / 001 – A 004	U2 Tube Sample Extrusion Kit Set

FALL CONE APPARATUS

Standard: EN 17892-6

Water in Sand Determination

The fall cone apparatus provides a rapid, simple and accurate method for determining the undrained shear strength and the sensitivity of both undisturbed and remoulded clays. The relationship between the depth of penetration of the fall cone and the undrained shear strength has been determined after many years of research. The equipment is also used for determination of liquid limits (fineness number).

Technical Specifications :

Model Number	NL 5047 X / 001
Caliper Type	Digital Type
Dimension (mm)	183 (L) x 223 (W) x 504 (H)
Weight	13 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5047 X / 001	Fall Cone Apparatus	1no.
NL 5047 X / 001 - P 001	Fall Cone 10 g	1no.
NL 5047 X / 001 - P 002	Fall Cone 60 g	1no.
NL 5047 X / 001 - P 003	Fall Cone 80 g	1no.
NL 5047 X / 001 - P 004	Fall Cone 100 g	1no.
NL 5047 X / 001 - P 005	Fall Cone 400 g	1no.
NL 5047 X / 001 - P 006	Cup Mould	1no.
NL 7025 X / 004	Digital Caliper	1no.

*1 Copy of Manual Instruction

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NL 5047 X / 001 - P001 ~ P002



AUTOMATIC DIRECT/ RESIDUAL SHEAR TESTING MACHINE

Standard : ASTM D3080, BS 1377-7,
AASHTO T236, NF P094 071-1/2

Shear Testing Machines

This machine is used to perform consolidation & shearing phase of a standard direct shear & residual shear test under automatic speed control. The system consists of a micro stepper motor to apply horizontal shear load to the soil specimen, at user-input shearing rate. The shear force readings are obtained from the proving ring at specified intervals of horizontal displacement shown on the touch screen display. Incorporated with limit sensors to prevent shearbox from over-travel at forward or reverse motions.

Control panel come with LCD and keypad for manually setting and control, large liquid crystal display and with 16 keys membrane, reciprocating shear capability and times are settable built-in 16 bit Data acquisition and control.

Technical Specifications :

Model Number	NL 5052 X / 005
Max. Shear Capacity	5 kN
Adjustable Shear Speed	0.00001 to 9.99999 mm/min
Max. Shear Travel	45 mm
V.Load Beam Ratio	11:1, 10:1, 9:1
Approx. Dimension (LWH)	1300 mm x 400 mm x 1250 mm
Power Supply	240V, 1 pH, 50/60 Hz, 0.5 Hp
Approx. Weight	165 kg

Unit Consists Of :

NL 5052 X / 005 - P001	60 X 60 mm Complete Shear Box Assemblies Unit	1 no
NL 5052 X / 005 - P002	5kn Load Sensor Unit	1 no
NL 5052 X / 005 - P003	10 x 0.001 mm Vertical Linear Potentiometric Displacement Transducer	1 no
NL 5052 X / 005 - P004	25 X 0.001 mm Horizontal Linear Potentiometric Displacement Transducer	1 no
NL 5052 X / 005 - P005	Window Modular Software	1 no
NL 5052 X / 005 - P006	Hollow Punch & Tamper for 60x60 mm specimen	1 no
NL 5052 X / 005 - P007	50 kg Set Of Weight	1 set

*1 Copy of Manual Instruction



ORGANIC IMPURITIES TEST APPARATUS

Standard: ASTM C40, AASHTO T21, UNI 8020-14

Organic Impurities

This test method cover procedures for an approximate of the presence of injurious organic impurities in fine aggregate.

Technical Specifications :

Model Number	NL 5054 X / 001
Dimension (mm)	170 x 250 mm approx.
Approx. Weight	400 g

Set Consists Of :

Model Number	Parts Description	Qty
NL 5054 X / 001 – P 001	NL Comparator Disc 290130	1no.
NL 7059 CG / 003	Laboratory Clear Glass Bottle	1no.
NL 7029 CM / 004	Sodium Hydroxide (1000 g)	1btl.

*1 Copy of Manual Instruction

Technical Specifications :

Model Number	Accessories Description
NL 7059 CG / 004	Laboratory Clear Glass Bottle

METHYLENE BLUE VALUE SET

Standard: EN 933/9,
NFP94-068, XPP18-592,
UNE 83180, UNI 8520-15

Methylene Blue Test

Used to determine the clay content in the fine portions of the aggregate, clay & organic material.

Technical Specifications :

Model Number	NL 5060 X / 001
Approx. Weight	11 kg



Unit Consists Of :

Model Number	Parts Description	Qty
NL 5060 X / 002 – P 001	Methylene Blue Stirrer 220V, 50 / 60 Hz (Controller, Support Frame, 1L Glass Beaker, Glass Rod x2)	1no.
NL 5060 X / 001 – P 002	Burrete with Stopcock 50 x 0.1 ml	1no.
NL 5060 X / 001 – P 003	Burrete Support Frame (Retort Stand & Burrete Clamp)	1set
NL 5060 X / 001 – P 004	Kaolinite 500 g / bottle	1btl.
NL 5060 X / 001 – P 005	Stainless Steel Container 205 x 170 x 135 mm	1no.
NL 7029 CM	Methylene Blue Regent 50 g / bottle	1btl.
NL 5060 X / 001 – P 006	Plastic Container 4000 ml	1no.
NL 7021 X / 003	Filter Paper 9 cm Dia. 50 pcs / pack	1pck.
NL 5060 X / 001 - P 007	Glass Pipette 5 ml/2ml c/w Pipette Filler	1 no.

*1 Copy of Manual Instruction



MULTI PURPOSE MOISTURE METER

Moisture Content Determination

Determining moisture content by using the latest single-chip technology, automatic calibration of various errors by the software, large LCD display, high definition. Come with ten kinds of error correction and forty sets of calibration function. Multi purpose measuring of moisture content of soil, organic, inorganic chemical raw material.

Technical Specifications :

Model Number	NL 5062 X / 002
Alternate Code	SK-100
Measurement Range	0 - 99%
Display	Large LCD Display
Size	Display unit (150 x 80 x 35 mm) Probe (450 mm Lg)
Power	9V Battery

Unit Consist Of :

Model Number	Description
NL 5062 X / 002 - P001	Handheld Display Unit
NL 5062 X / 002 - P002	Penetration Probe



SOIL LATHE APPARATUS

Trimming & Reducing Samples

This unit multi size soil lathe able to trim specimen diameter for 35 mm to 101.6 mm.

Technical Specifications :

Model Number	NL 5063 X / 001
Dimension (mm)	160 (L) x 260 (W) x 410 (H)
Approx. Weight	5 kg

Set Consists Of :

Model Number	Parts Description	Qty
NL 5063 X / 001 – P 001	Standard Size Soil Gripping Disc Ø 38, 50, 70 & 100 mm	1set
NL 5063 X / 001 – P 002	Trimming Kniff	1no.

*1 Copy of Manual Instruction

Optional Accessories :

Model Number	Accessories Description
NL 5063 X / 001 – A 001	Soil Gripping Disc Ø 38 mm
NL 5063 X / 001 – A 002	Soil Gripping Disc Ø 50 mm
NL 5063 X / 001 – A 003	Soil Gripping Disc Ø 70 mm
NL 5063 X / 001 – A 004	Soil Gripping Disc Ø 100 mm