

## MANUAL MARSHALL COMPACTOR 4" & 100mm Dia.

Standard: BS 598-107, ASTM D1559,  
AASHTO T245

### Manual Compactability

Used for compact Marshall Specimens manually  
for sample preparation.

#### Technical Specifications :

Model Number	NL 2000 X / 003
Dimension (mm)	370 (L) x 300 (W) x 2000 (H)
Height of Hammer Drop	457 mm
Weight of Hammer	4.535 kg
Approx. Weight	66 kg

#### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2000 X / 003 – P 001	Compaction Hammer	1no.
NL 2000 X / 003 – P 002	Compaction Pedestal with Wooden Mounting Base	1set
NL 2000 X / 003 – P 003	Hammer Guide Rod with Plunger & Holder	1no.
NL 2000 X / 003 – P 004	Guide Rod Holder	1no.

\*1 Copy of Manual Instruction

#### Optional Accessories :

Model Number	Accessories Description
NL 2000 X / 003 – A 001	Marshall Compaction Mould
NL 2000 X / 003 – A 002	Marshall Compaction Mould (Collar)
NL 2000 X / 003 – A 003	Marshall Compaction Mould (Body)
NL 2000 X / 003 – A 004	Marshall Compaction Mould (Base Plate)
NL 2000 X / 005 – A 002	Marshall Sample Extruder
NL 7021 X / 001	Filter Paper (11 cm Diameter)



## ECO-SMARTZ AUTOMATIC MARSHALL COMPACTOR 4" & 100mm Dia.

Standard: ASTM D1559/D5581,  
AASHTO T245

### Automatic Compactability

Upgraded version to ECO-SMARTZ system for more stable & better performance. This ruggedly constructed machine has been designed to eliminate the laborious process of hand compaction. It automatically compacts the specimen and stops after the preset number of strokes has been completed on the automatic digital display counter. This machine comes with controller compartment unit.

### Technical Specifications :

Model Number	NL 2000 X / 006
Weight of Hammer	4535 ± 15 g
Free Fall Height	457 ± 5 mm
Blow Rate	55 - 60 Blow / min
Dimension (Main Frame)	520 (L) x 370 (W) x 1680 (H) mm
Dimension of Case (Packing)	670 (L) x 580 (W) x 1800 (H) mm
Total Weight	141 kg
Packing Weight	166 kg

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2000 X / 003 - A 001	Marshall Compaction Mould
NL 2000 X / 003 - A 002	Marshall Compaction Mould (Collar)
NL 2000 X / 003 - A 003	Marshall Compaction Mould (Body)
NL 2000 X / 003 - A 004	Marshall Compaction Mould (Base Plate)
NL 2000 X / 005 - A 002	Marshall Sample Extruder
NL 2000 X / 005 - A 003	Sound Proofing Cabinet
NL 7021 X / 001	Filter Paper (Ø 11 cm)







## ECO-SMARTZ AUTOMATIC MARSHALL COMPACTOR 4" & 100mm Dia. (BS) Standard: BS 598-107

### Automatic Compactability

Upgraded version to ECO-SMARTZ system for more stable & better performance. This ruggedly constructed machine has been designed to eliminate the laborious process of hand compaction. It automatically compacts the specimen and stops after the preset number of strokes has been completed on the automatic digital display counter. This machine comes with a controller compartment unit.

### Technical Specifications :

Model Number	NL 2000 X / 007
Weight of Hammer	4535 ± 15 g
Free Fall Height	457 ± 5 mm
Blow Rate	55 - 60 Blow / min
Dimension (Main Frame)	520 (L) x 370 (W) x 1680 (H) mm
Dimension of Case (Packing)	670 (L) x 580 (W) x 1800 (H) mm
Total Weight	295 kg
Packing Weight	340 kg

### Set Consists Of :

Model Number	Accessories Description
NL 2000 X / 006	Eco Smartz Automatic Marshall Compactor
NL 2000 X / 006 - P 001	Concrete Base

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2000 X / 003 - A 001	Marshall Compaction Mould
NL 2000 X / 003 - A 002	Marshall Compaction Mould (Collar)
NL 2000 X / 003 - A 003	Marshall Compaction Mould (Body)
NL 2000 X / 003 - A 004	Marshall Compaction Mould (Base Plate)
NL 2000 X / 005 - A 002	Marshall Sample Extruder
NL 2000 X / 005 - A 003	Sound Proofing Cabinet
NL 7021 X / 001	Filter Paper (Ø 11 cm)

## Technical Specifications :

Model Number	NL 2001 X / 005
Penetration Depth & Displayed Unit	40 x 0.01 mm
Spindle Weight	47.5 ± 0.05
Product Dimension (mm)	310 (L) x 210 (W) x 480 (H)
Packing Dimension (mm)	330 (L) x 230 (W) x 510 (H)
Approx. Product Weight	6.5 kg
Approx. Packing Weight	7.5 kg
Power	220 V, 1 ph, 50 / 60 Hz

## Unit Consists Of :

Model Number	Parts Description	Qty
NL 2001 X / 002 – P 001	Sample Container Ø 55 x 35 mm (H)	1no.
NL 2001 X / 002 – P 003	Penetrometer Needle 2.5gms ± 0.05gms	2nos.
NL 2001 X / 002 – P 004	50 g Weight Set	1no.
NL 2001 X / 002 – P 005	100 g Weight Set	1no.

\*1 Copy of Manual Instruction

## Optional Accessories :

Model Number	Accessories Description
NL 2001 X / 005 – A 001	Penetrometer Cooling Bath
NL 2001 X / 002 – P 002	Sample Container Ø 70 x 45 mm (H)
NL 2001 X / 005 – P 001	Transfer Dish with Support Plate



NL 2001 X / 005 - A 001



NL 2001 X / 002 - P 002



NL 2001 X / 005 - P 001

## ADVANCE DIGITAL PENETROMETER

Standard: EN 1426, ASTM D5, AASHTO T49

### Penetration of Bituminous Materials

Newly invented instrument for determine the consistency of sample from the depth penetration thru penetration needle under standard load condition.

#### FEATURES:-

- \*Light weight with compact design
- \*Automated record penetration result
- \*High accuracy using digital measuring device
- \*Enable auto or manual test operation
- \*LED lighting stand
- \*Levelling bubble & vertical fine adjustable knob
- \*Simple & quick operation



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## ADVANCE AUTOMATIC DIGITAL PENETROMETER

Standard: EN 1426, ASTM D5, AASHTO T49

### Penetration of Bituminous Materials

Newly invented FULLY AUTOMATIC apparatus for determine the consistency of sample from the depth penetration thru penetration needle under standard load condition.

#### FEATURES:-

- \*Light weight with compact design
- \*Automated record penetration result
- \*High accuracy using measuring transducer
- \*Enable auto or manual test operation
- \*LED lighting stand
- \*Levelling bubble & vertical fine adjustable knob
- \*Simple & quick operation
- \*Mini printer connection port
- \*Enable connected to NL mini printer for instant print out 3 groups average test result

#### Optional Unique Features:-

- \*Enable connected to mini printer for instant result with average test result
- \*Enable connected to high sensitivity temperature control transfer disc

**NEW  
2018**



### Technical Specifications :

Model Number	NL 2001 X / 006
Penetration Depth & Displayed Unit	40 x 0.01 mm
Product Dimension (mm)	310 (L) x 210 (W) x 450 (H)
Packing Dimension (mm)	330 (L) x 230 (W) x 510 (H)
Approx. Product Weight	6.5 kg
Approx. Packing Weight	7.5 kg
Power	220 V, 1 ph, 50 / 60 Hz

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2001 X / 002 - P 001	Sample Container Ø 55 x 35 mm (H)	1no.
NL 2001 X / 002 - P 003	Penetrometer Needle 2.5gms ± 0.05gms	2nos.
NL 2001 X / 002 - P 004	50 g Weight Set	1no.
NL 2001 X / 002 - P 005	100 g Weight Set	1no.

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2001 X / 005 - A 001	Penetrometer Cooling Bath
NL MP - 100	Mini Printer c/w Cable
NL 2001 X / 002 - P 002	Sample Container Ø 70 x 45 mm (H)
NL 2001 X / 005 - P 001	Transfer Dish with Support Plate
NL 2001 X / 005 - A001	Temperature control transfer disc unit
NL MP-100 RP	Printer Paper



NL MP - 100 RP



NL 2001 X 005 - A 001



NL 2001 X / 002 - P 002



NL 2001 X / 005 - P 001

## Asphalt Binder Analyzer (Ignition Method)

NL introduces the Asphalt Binder Analyser which fully compliant with ASTM, AASHTO and EN 12697-39 and BS (DD). Combining a ignition oven to a continous weight asphalt sample and automatically determine at the end of the test. The unit supply with built-in metal stand.

### Main Functions and Features

1. Large-screen color LCD touch screen display that can display real-time loss curve and temperature curve. Friendly and beautiful interface control system, having bilingual display.
2. Turn off the automatic storage of data and experimental data automatically print function.
3. Automatic temperature control, door lock state detector, door off automatically.
4. With active smoke extraction system.
5. Improved housing and construction, in continuous operation, low surface temperature.
6. Optional variety of imported or domestic balance and support internal calibration without removing the balance.
7. The group has 30 independent combustion program storage unit may be different for different mixes to save burning program from a shutdown condition, the combustion temperature, the aggregate coefficient, high-temperature and high-temperature time temperature can be set independently to meet different mix the test material.
8. Can save up to 100 groups of test data, complete data including test results, including protocols and graphs, can view and print. Improve the human software, so users can quickly find what they need at any time in recorded history data.
9. The machine can be equipped with PC (USB 2.0), and set the test parameters, test data is saved through the PC software is complete, the report printing (including graphs)
10. With external HOST USB interface, allowing users to export test data through the USB port directly to the U disk, directly view and support EXCEL.



### Technical Specifications :

Model Number	NL 2002 X / 001
Combustion Chamber Dimensions (LxWxH)	320 × 450 × 280 mm
Relative Humidity	≤ 85 %
Balance Range	10.0 kg, 0.1g
Maximum Operating Temperature of the combustion chamber	600 °C (setpoint) temperature resistant 1200 °C
Temperature Measurement Range	0-1024 °C, resolution 0.5 °C
Maximum Sample Mass	3500g, recommended sample mass 1200-1800g
Test Stability Factor	0.1%
Instrument Weight	220Kg
Ambient Temperature	≤ 35 °C
Heating Power	9KW, 3-phase four-wire Y connection
Power Supply	Three-phase four-wire AC415V ± 10%
Dimensions (LxWxH)	790 x 735 x 1640 mm



## Unit Consists Of :

Model Number	Description
NL 2002 X / 001 - P001	Double Sample Tray c/w Cover
NL 2002 X / 001 - P002	Extraction Fork
NL 2002 X / 001 - P003	1 Meter Extendable Ducting Hose
NL 2002 X / 001 - P004	Burning Plate (Additional)

## Optional Accessories :

Model Number	Description
NL 2002 X / 001 - A001	Face Shield
NL 7037 X / 002	Heat Resistance Glove (Leather)



Chamber



Heat Resistance Glove



Face Shield

## ROLLER COMPACTOR APPARATUS

### Sample Preparation by Roller Compaction

Using the roller compactor, slab can be compacted to be compacted to a target density using load. To prepare wheel tracking specimen and to provide slave / to be cut for bending fatigue test. The units is pneumatically powered and is fully enclosed by a safety cutout switches for complete operator safety.

The apparatus comprises :-

\*Steel frame roller compactor with roller segment reciprocating mould support table, pneumatic actuators for reciprocating table and applying compaction force.

\*PLC controller for compacting start, emergency stop, automatic selection and number of roller passes.

\*Different level of vertical for can be selected up to approximately 12 kN.



### Technical Specifications :

Model Number	NL 2003 X / 002A
Rolling Wheel Radius	500 mm, Width 300 mm
Roller Car Moving Speed	6 times / min (Forward & Reverse)
Roller Car Moving Distance	300 mm
Roller Car Cycle Setting	1 - 999 Cycle
Rolling Wheel Line Pressure	9 kN
Rolling Wheel Temperature Range	RT - 200°C
Dimension (mm)	1200 (L) x 600 (W) x 1790 (H)
Approx. Weight	400 kg
Power	415 V, 50 / 60 Hz, 3 ph, 3 KW

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2003 X / 002 - P 001	300 mm Sq. x 50 mm (H) Roller Compaction Mould	1set
NL 2003 X / 002 - P 002	Air Compression Set c/w Necessary Tubing & Connection	1no.
NL 2003 X / 002 - P 003	Heater Element with Thermostatic Temperature Controller (up to 200°C)	1no.

\*1 Copy Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2003 X / 002A - A 001	Safety Case
NL 2003 X / 002A - A 002	300 mm Sq. x 70 mm (H) Roller Compaction Mould
NL 2003 X / 002A - A 003	300 mm Sq. x 100 mm (H) Roller Compaction Mould





## ECO-SMARTZ CENTRIFUGE EXTRACTOR APPARATUS

Standard: 12697-1, ASTM D2172,  
AASHTO T164A

### Centrifuge Extractors

Newly upgraded model using D.C Motor with precision ECO-SMARTZ system. Used to determination of bitumen percentage in bituminous mixtures.

#### FEATURES:-

- \*Energy saving up to 70% compare with old version
- \*Stable operation with less vibration & noise
- \*Variable speed control system
- \*Auto Brake control for fast stop
- \*Machine accepted both 1500 & 3000 gram bowl cover

#### Technical Specifications :

Model Number	NL 2004 X / 005	NL 2004 X / 006
Capacity	3000 gram	1500 gram
Speed	0 - 3600 r.p.m. (Adjustable)	
Product Dimension (mm)	Ø 340 x 375 (H)	
Packing Dimension (mm)	610 (L) x 610 (W) x 730 (H)	
Approx. Product Weight	64.5 kg	
Approx. Packing Weight	88.5 kg	
Power	220 V, 3 Amp, 1 ph, 0.5 Hp, 50/60 Hz, 550 W	

#### Unit Consists Of :

##### 3000 Gram

Model Number	Parts Description	Qty
NL 2004 X / 005 – P 001	Bowl & Cover	1set
NL 2004 X / 005 – A 001	Filter Paper OD 320 X ID 155mm (Pack of 50 pcs)	1pck.

##### 1500 Gram

Model Number	Parts Description	Qty
NL 2004 X / 006 - P001	Bowl & Cover	1set
NL 2004 X / 003 - A001	Filter Paper OD 260 x ID 105mm (Pack of 50 pcs)	1pck.

\*1 Copy of Manual Instruction

#### Spare/Replacement Parts :

Model Number	Accessories Description
NL 2004 X / 005 – A 002	Aluminium Casing Rubber Seal (Ø 5 x ID 300 mm)
NL 2004 X / 005 – A 004	Filter Paper OD 320 X ID 155mm (Pack of 100 pcs)
NL 2004 X / 003 - A004	Filter Paper OD 260 x ID 105mm (Pack of 100 pcs)

## LABORATORY CENTRIFUGE EXTRACTOR

Standard: BS 598

### Centrifuge Extractor

This laboratory centrifuge is robust and compact in design and engineered to a high standard of reliability. It has the advantages of small volume, low noise, small temperature rise, high efficiency, safety and reliability.



### Technical Specifications :

Model Number	NL 2005 X / 001
Maximum Speed	6000 rpm/min
Max. Capacity	5200 g
Timing Range	0 - 99 min
Power Supply	AC 220 V $\pm 10\%$ 50 Hz 8 A
Approx. Weight	20 kg
Motor Power	480 W
Test Tube Capacity	6 x 50 ml
Dimensions	340(L) x 400(W) x 270(H) mm

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2005 X / 001 - P001	Test Tube	6nos.

\*1 Copy of Manual Instruction





## ADVANCE DIGITAL DUCTILOMETER APPARATUS

Standard: EN 13398, ASTM D113, AASHTO T51

### Ductility Tester

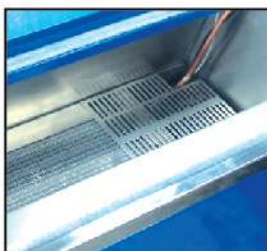
Latest upgraded product for determine the bituminous ductility. By measuring the elongation before breaking when two end of briquettes specimen are pull apart at a specified speed & temperature. Supplied WITHOUT briquettes moulds. MOULD NEED TO ORDER SEPARATELY.

### FEATURES:-

- \*Double speed setting for elongation movement
- \*High accuracy LED test parameter
- \*Using double ball screw with servo motor for uniform movement
- \*Save up to 10 groups test result
- \*Fitted with immersion electric heater, coiling coil & circulating pump unit



Briquette Mould  
c/w Base Plate



Fitted with immersion  
electric heater,  
coiling coil &  
circulating pump unit

**NEW**  
2017



### Technical Specifications :

Model Number	NL 2006 X / 003A
Max. Carriage Displacement	1500 mm
Displacement Accuracy	1 mm
Temperature Range	2 - 40°C
Temperature Accuracy	±0.1°C
Test Speed	10 or 50 mm / min
Cooling Power	1200 W
Heating Power	4200 W
Nos. of Specimen Carriage	Max 3 nos.
Product Dimension	2120 (L) x 440 (W) x 970 (H) mm
Packing Dimension	2130 (L) x 5400 (W) x 1200 (H) mm
Approx. Product Weight	158 kg
Approx. Packing Weight	170 kg
Power	220 V, 1 ph, 50 / 60 Hz

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2006 X / 003 - P 001	Handheld Distance Remove Control	1no.
NL 2006 X / 003 - P 002	Tank Glass Cover	2nos.

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2006 X / 002 - A 001	Briquette Mould c/w Base Plate (ASTM D113)
NL 2006 X / 002 - A 002	Briquette Mould c/w Base Plate (ASTM D6084)
NL 2006 X / 002 - A 003	Briquette Mould c/w Base Plate (EN 13398)
NL 2006 X / 002 - A 004	Briquette Mould c/w Base Plate (EN 13589)



Control Panel



## Technical Specifications :

Model Number	NL 2006 X / 004
Max. Carriage Displacement	1500 mm
Displacement Accuracy	1 mm
Temperature Range	5 - 40°C
Temperature Accuracy	±0.1°C
Test Speed	10 x 50 mm / min
Tension Load	1000 N (Newton)
Cooling Power	1200 W
Heating Power	3800 W
Nos. of Specimen Carriage	Standard & 1 with load cell
Product Dimension (mm)	2120 (L) x 440 (W) x 970 (H)
Packing Dimension (mm)	2130 (L) x 5400 (W) x 1200 (H)
Approx. Product Weight	158 kg
Approx. Packing Weight	170 kg
Power	220 V, 1 ph, 50 / 60 Hz

## Unit Consists Of :

Model Number	Parts Description	Qty
NL 2006 X / 004 - P001	1000N Load Cell Mould Guide Piece	1set
NL 2006 X / 003 - P 001	Handheld Distance Remove Control	1no.
NL 2006 X / 003 - P 002	Tank Glass Cover	2nos.
NL 2006 X / 004 - P 002	Master Controller Board w/ Built in Printer	1unit

\*1 Copy of Manual Instruction

## Optional Accessories :

Model Number	Accessories Description
NL 2006 X / 002 - A 001	Briquette Mould c/w Base Plate (ASTM D113)
NL 2006 X / 002 - A 002	Briquette Mould c/w Base Plate (ASTM D6084)
NL 2006 X / 002 - A 003	Briquette Mould c/w Base Plate (EN 13398)
NL 2006 X / 002 - A 004	Briquette Mould c/w Base Plate (EN 13589)
NL TMP -100 -TP	Thermo Printer paper (3 rolls)

## ADVANCE DIGITAL DUCTILOMETER APPARATUS (TENSILE LOAD SERIES)

Standard: EN 13398, ASTM D133, AASHTO T51

### Ductility Tester

Latest upgraded product for determine the bituminous ductility. By measuring the elongation before breaking when two end of briquettes specimen are pull apart at a specified speed temperature. Single specimen with tension load result supplied WITHOUT briquettes moulds.

### FEATURES:-

- \*2 speed setting for elongation movement
- \*High accuracy LED test parameter
- \*Using double ball screw with servo motor for uniform movement
- \*Save up to 10 groups test result
- \*Fitted with immersion electric heater, coiling coil & circulating pump unit
- \*Built in Mini printer for instant print out 3 groups average test result
- \*1000N (Newton Load Cell with Mould Guide Piece)



1000N Load Cell with Mould Guide Piece



Fitted with immersion electric heater, coiling coil & circulating pump unit



Briquette Mould c/w Base Plate







## VACUUM PYKNOMETER 10 LITRES (RICE TEST)

Standard: EN 12697-5, EN 13108,  
ASTM D2041, AASHTO T209 & T283

### Determination of Maximum Density

Large size heavy duty vacuum pyknometer with 10 litres capacity. Used for determining the theoretical maximum specific gravity of uncompacted bituminous paving mixtures. It can also be used for the calculation of the percent air voids in compacted bituminous mixtures & the amount of bitumen absorbed by the aggregates. Made from robust transparent plastic. Fitted with vacuum gauge & valve.

### Technical Specifications :

Model Number	NL 2007 X / 002
Approx. Weight	35 kg
Power	220 V, 50 / 60 Hz, 1 ph, 370 w

### Unit Consist Of:

Model Number	Parts Description	Qty
NL 2007 X / 001 – P 001	Acrylic Vacuum Pyknometer 10 Litres	1no.
NL 1015 X / 010	Triple Motion Sieves Shaker	1unit.
NL 2007 X / 001 – P 002	Tubing for Vacuum, 3 meter Lg.	1roll
NL 7022 X / 006	Oil Free Vacuum Pump c/w Regulator	1no.

\*1 Copy of Manual Instruction



Stainless Steel Tank



## MARSHALL WATER BATH

Standard: ASTM D1559, BS 598-107,  
AASHTO T245, DIN 1996

### Water Baths for Marshall Specimens

Used to maintain in water the Marshall & asphalt specimens at constant temperature. The unit fitted with electronic temperature controller with digital display. Constructed with stainless steel inside chamber and exterior case in powder coated painted steel sheet.

#### Technical Specifications :

Model Number	NL 2008 X / 002
Temperature Range	From Ambient to +99°C
Accuracy	60 ± 1°C or 37.8 ± 1°C
Capacity	26 Litres
Working Space (mm)	600 (L) x 300 (W) x 200 (H)
Dimension (mm)	770 (L) x 370 (W) x 300 (H)
Approx. Weight	17 kg
Power	220 - 240 V, 1 ph, 50 / 60 Hz, 750 W

\*1 Copy of Manual Instruction





Stainless Steel Tank



## WATER BATH 60 LITRES (Large Capacity)

Standard: ASTM D5581, D6926, D6931, BS 598, EN, AASHTO T245

### Water Baths for Marshall Specimens

Used to maintain in water the Marshall & asphalt specimens at constant temperature. The unit fitted with electronic temperature controller with digital display. Constructed with stainless steel inside chamber and exterior case in powder coated painted steel sheet. Water recirculation feature for temperature uniformity

### Technical Specifications :

Model Number	NL 2008 X / 004
Temperature Range	Ambient -99.9°C
Temperature Accuracy/Resolution	± 1°C / 0.1°C
Usage Capacity	56 Litres
Number of Marshall Specimens	4"/100 mm (24 pcs), 6"/150 mm (12 pcs)
Bath Dimension	650 (L) x 500 (W) x 240 (H) mm
Dimension	885 (L) x 500 (W) x 310 (H) mm
Approx. Weight	30 kg
Power	240 V, 1 ph, 50 / 60 Hz, 4000 W, 22 A

\*1 Copy of Manual Instruction

## PERCENTAGE REFUSAL PRD MOULD

Standard: EN 12697-32/BS 598:104

### Compaction Mould

The mould are vertically split type, platen against corrosion. It used for determining the degree of compaction of bituminous pavement. Supplied without hammer, supporting frame and tamping foot which have to be **order separately**.

### Technical Specifications :

Model Number	NL 2009 X / 001
Dimension (mm)	250 x Ø165 X 205 (H)
Approx. Weight	9 kg

### Optional Accessories :

Model Number	Accessories Description	Weight
NL 5021 X 001	Compaction Hammer	6.7 kg
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 006	Steel Shank 250 mm (L)	0.6 kg

**NEW**  
2018



Compacting frame with  
Compaction Hammer



NL 5021 X / 001



NL 5021 X / 001 - A002,  
A003 & A006



## ECO SMARTZ MOTORIZED MARSHALL STABILITY COMPRESSION 50kN

Standard: ASTM D1559, D5581,  
AASHTO T245

### Stability Compression

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.



### Technical Specifications :

Model Number	NL 2010 X / 006
Capacity	50 kN
Testing Speed	50.8 mm / min
Plunger Travel	60 mm
Vertical Clearance	730 mm
Horizontal Clearance	270 mm
Product Dimension	525 (L) x 445 (W) x 1150 (H) mm
Packing Dimension	670 (L) x 545 (W) x 1400 (H) mm
Approx. Product Weight	98 kg
Approx. Packing Weight	118 kg
Power	220 V, 2.5 Amp, 50 / 60 Hz, 1 ph, 370 W

### Unit Consists Of :

Model Number	Accessories Description
NL 2010 X / 006 - P001	4" (100mm) Marshall Stability Mould c/w Flow Meter Attachment
NL 7023 X / 007	Proving Ring 30 kN
NL 2010 X / 006 - P002	Extended Plunger
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm
NL 2010 X / 006 - P003	Cranked Handle

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2010 X / 006 - A001	6" (150 mm) Marshall Stability Mould c/w Flow Meter Attachment
NL 7023 X / 009	Proving Ring 50 kN
NL 2010 X / 004 - A004	Tensile Splitting Device (100, 150 & 160 mm)



NL 2010 X / 006 – A 001



NL 7023 X / 009



NL 2010 X / 004 – A 004

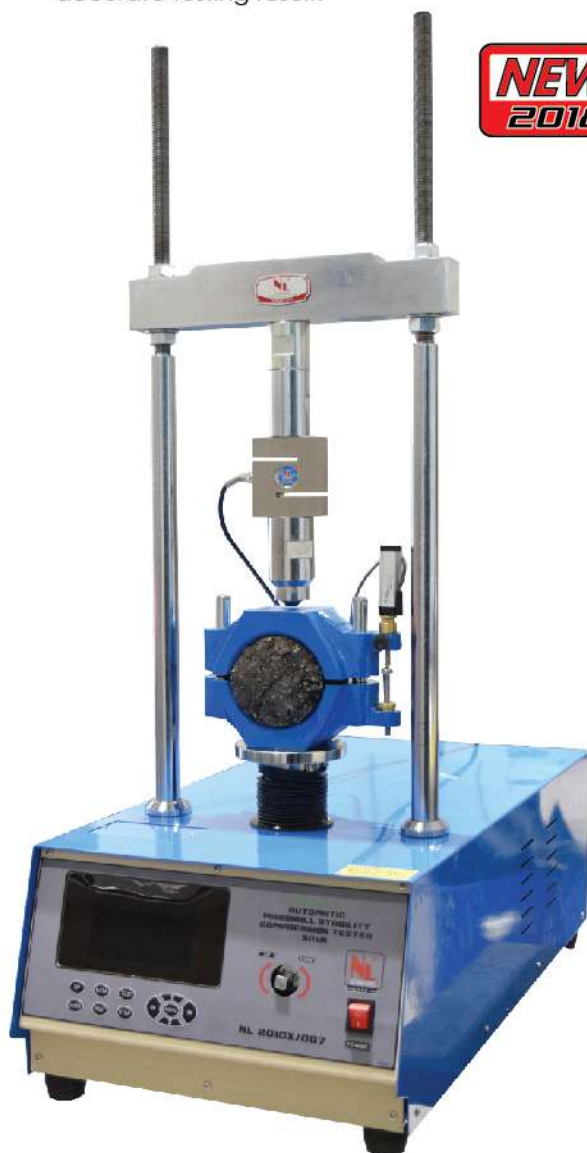
## AUTOMATIC MARSHALL STABILITY COMPRESSION TESTER 50kN

Standard: ASTM D1559, D5581, AASTHO T245

### Stability Compression

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.

**NEW  
2018**



### Technical Specifications :

Model Number	NL 2010 X / 007
Capacity	50 kN
Test Rate	50 mm
Cross Head Travel	70 mm
Transducer Sensor	<30 mm
Vertical Clearance	300 mm
Horizontal Clearance	270 mm
Product Dimension	800 (L) x 410 (W) x 1070 (H) mm
Approx. Product Weight	100 kg
Power	220/240 V, 6 Amp, 50 / 60 Hz, 1 ph, 0.5 hp

### Unit Consists Of :

Model Number	Accessories Description	Qty
NL 2010 X / 007 - P001	50 kN 'S' Type Load Cell	1 no.
NL 2010 X / 007 - P 002	Displacement Transducer Probe	1 no.
NL 2010 X / 006 - P003	4" Diameter Stability Mould	1 no.
NL 2010 X / 006 - P004	Handle (Manual Adjustment)	1 no.

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description	Qty
NL 2010 X / 004 - A001	6" Diameter Marshall Stability Mould	1 no.
NL 2010 X / 004 - A002	Mini Printer	1 no.
NL 2010 X / 004 - A003	Printer Paper Roll (3 pcs/pck)	1 no.
NL 2010 X / 004 - A004	Tensile Splitting Device	1 no.
NL 2010 X / 004 - A005	LEITNER Head	1 no.



NL 2010 X / 004 – A 001



NL 2010 X / 004 – A 004





## DISTILLATION ASSEMBLY FOR RECOVERY OF ASPHALT

Standard: ASTM D1856, CNR No.133

### Asphalt Binder Analysis

Used for recovering the asphalt from a solution of a previous extraction. The asphalt is recovered with properties substantially the same as those it possessed in the bituminous mixture and in quantities sufficient for further testing.

### Technical Specifications :

Model Number	NL 2011 X / 001
Approx. Weight	15 kg
Power	230 V, 50 / 60 Hz, 1 ph
Setup Dimension (mm)	770 (L) x 400 (W) x 620 (H)

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2011 X / 001 – P 001	Flat Bottom Flasks 250 ml Cap	2nos.
NL 2011 X / 001 – P 002	Glass Tubing 'L' Shape	1no.
NL 2011 X / 001 – P 003	Inlet Aeration Tube	2nos.
NL 2011 X / 001 – P 004	Electric Heating Mantle with Variable Temperature	1no.
NL 2011 X / 001 – P 005	Water Jacketed Condenser	1no.
NL 2011 X / 001 – P 006	Thermometer ASTM 7C-2 to 300°C	1no.
NL 2011 X / 001 – P 007	Gas Flowmeter 1000 ml / min	1no.
NL 2011 X / 001 – P 008	Cork	1no.
NL 2011 X / 001 – P 009	Flexible Elastomeric Tubing	1no.

\*1 Copy of Manual Instruction

## ADVANCE AUTOMATIC RING & BALL SOFTENING POINT APPARATUS

Standard: EN 1427, ASTM D36, AASHTO T53

### Softening Point of Asphalt

Used for determining the softening point of bituminous material. Newly invented with portable & compact design. Equip with 2 laser sensor detected ball fall automatically determined the softening point at asphalt. Supplied WITHOUT mini printer.

#### FEATURES:-

- \*Automatic laser sensor detector unit
- \*Enable auto or manual test operation
- \*Adjustable magnetic stirrer
- \*Mini printer connection port
- \*Enable connected to NL mini printer for instant print out 3 groups average test result



### Technical Specifications :

Model Number	NL 2012 X / 003
Temperature Accuracy	±0.2°C
Temperature Range	-5°C to 125°C
Temperature Increase Timing	5°C / min (Adjustable)
Timing Accuracy	1 second
Timing Setting Range	0-99 min, 99 seconds
Dropping Distance	25.4 mm
Product Dimension (mm)	280 (L) x 180 (W) x 295 (H)
Carry Case Dimension (mm)	365 (L) x 240 (W) x 220 (H)
Approx. Product Weight	3.5 kg
Approx. Packing Weight	4.0 kg
Power	220 V, 1 ph, 50 / 60 Hz, 800 W

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2012 X / 001 – P 002	Brass Tapered Ring	2nos.
NL 2012 X / 001 – P 003	Ball Centering Guide	2nos.
NL 2012 X / 001 – P 004	Steel Ball 9.5 mm Dia.	2nos.
NL 2012 X / 003 – P 001	Glass Biker	1no.
NL 2012 X / 003 – P 002	Stirrer Bar	1no.
NL 2012 X / 003 – P 003	Support Frame c/w Thermosensor & Heating Element	1set

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL MP – 100	Mini Printer c/w Cable
NL MP - 100 RP	Printer Paper (3 rolls)



NL MP - 100 RP



## SEMI AUTOMATIC RING & BALL SOFTENING POINT APPARATUS

Standard: EN 1427, ASTM D36,  
AASHTO T53

### Softening Point of Asphalt

Used for determining the softening point of bituminous material. Newly invented with portable & compact design. Come with 2 LED

Window display showing temperature and timing valve with a simple push button function to determine the softening point off asphalt. Supplied WITHOUT mini printer.

#### FEATURES:-

- \*Adjustable magmatic stirrer
- \*Mini printer connection port
- \*Enable connected to NL mini printer for instant print out 3 groups average test result



### Technical Specifications :

Model Number	NL 2012 X / 004
Temperature Accuracy	±0.2°C
Temperature Range	-5°C to 125°C
Temperature Increase Timing	5°C/min (Adjustable)
Dropping Distance	25.4 mm
Product Dimension (mm)	280 (L) x 180 (W) x 295 (H)
Carry Case Dimension (mm)	365 (L) x 240 (W) x 220 (H)
Approx. Product Weight	3.5 kg
Approx. Packing Weight	4.0 kg
Power	220 V, 1 ph, 50 / 60 Hz, 800 W

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2012 X / 001 – P 002	Brass Tapered Ring	2nos.
NL 2012 X / 001 – P 003	Ball Cantering Guide	2nos.
NL 2012 X / 001 – P 004	Steel Ball 9.5 mm Dia.	2nos.
NL 2012 X / 003 – P 001	Glass Biker	1no.
NL 2012 X / 003 – P 002	Stirrer Bar	1no.
NL 2012 X / 003 – P 003	Support Frame c/w Thermosensor & Heating Element	1 set.

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL MP – 100	Mini Printer c/w Cable
NL MP - 100 RP	Printer Paper (3 rolls)



NL MRP - 100 RP

## BOTTLE ROLLER APPARATUS

Standard: BS 598-102, BS 812, EN 12697-1, EN 13108

### Mixing Of Elements

A compact bench unit designed to rotate bottles simultaneously about their longitudinal axis. The unit is robustly constructed; designed to accept bottle of various sizes and rotates at speeds relevant to most international standards.

### Technical Specifications :

Model Number	NL 2013 X / 002
Main Shaft Rotation	Adjustable up to 120 rpm
Bottle Track	2 unit (various size)
Dimensions	910 (L) x 560 (W) x 295 (H)
Power	240 V, 370 W, 50/60 Hz, 1ph, 3 Amp
Weight	37 kg (without bottles)

### Set Consists Of :

Model Number	Parts Description	Qty
NL 2013 X / 001 - P001	Movable Rotation Shaft	2nos.

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Parts Description
NL 2013 X / 001 - A001	Steel Bottle 600 ml c/w Stopper (BS598-102)
NL 2013 X / 001 - A002	Steel Bottle 2500 ml c/w Stopper (BS598-102)
NL 2013 X / 001 - A003	Steel Bottle 7000 ml c/w Stopper (BS598-102)
NL 2013 X / 001 - A004	500 ml Test Bottle (EN12697-11, EN13108)
NL 2013 X / 001 - A005	6 mm Glass Rod with Rubber Casing
NL 7059 CG / 004	1000 ml Laboratory Clear Glass Bottle with Width Mouth (BS 812, ASTM C117)





## RATE OF SPREAD

Standard: EN 12272-1 & BS 598-108

### Spread Measure

This simple equipment use to determine the rate of spread of binder on the surface of the road. The equipment consists of a metal 300 mm square tray, which can be lifted by means of four chains. The chains are attached to a balance and the rate of spread can be assessed by a balance.

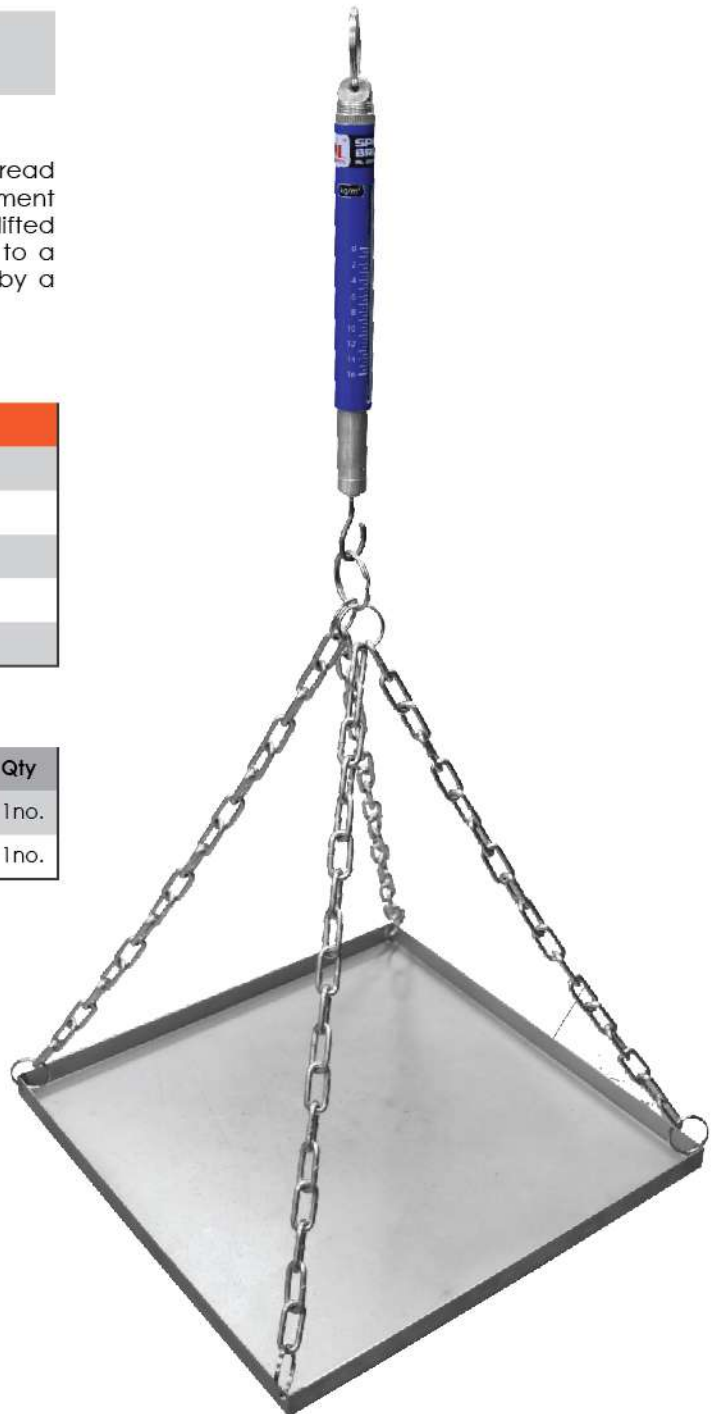
### Technical Specifications :

Model Number	NL 2014 X / 001
Dimension of Tray	300 (L) X 300 (W) X 25 (H) - Internal
Strength Capacity	Up to 16 kg/m <sup>2</sup>
Readability	0.5 kg/m <sup>2</sup>
Max.Load	2.7 kg
Approx.Weight	5.7 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2014 X / 001 - P001	Metal Tray with Chain	1no.
NL 2014 X / 001 - P 002	Rate of Spread Spring Balance	1no.

\*1 Copy of Manual Instruction



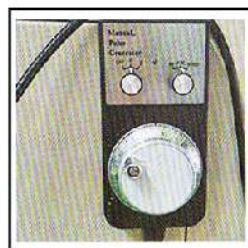
## AUTOMATED ASPHALT CUTTING MACHINE

### Mixing Of Elements

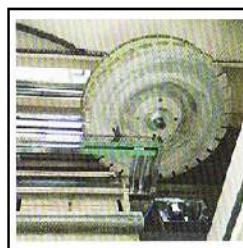
Automated Asphalt Cutting Machine is a fully enclosed automatic specimen cutting machine for cutting the standard asphalt mixture cylindrical ( $\Phi 100 \sim \Phi 155\text{mm}$ ) or 300 mm x 300 mm plate specimen into asphalt mixture Mechanical testing required for other sizes, with high precision, automated operation, safe and reliable features. It also can be based on user needs to install other clamping accessories, for others type of material such as terrazzo, natural stone, concrete products, ceramics, refractory bricks and other non-metallic materials and pipe. This machine is fully computerized system with touch screen control panel, it also come with automated specimen clamping and sawing system for fast, accurate cutting all kind of specimen.

### Technical Specifications :

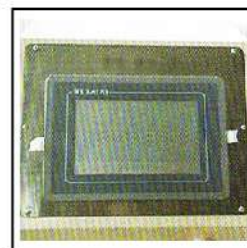
Model Number	NL 2015 X / 001
Spindle Speed	1450 RPM
Cutting Speed	0 - 999 mm/min
Cooling Pump Flow	4 L / min
Maximum Cutting Thickness	150 mm
Maximum Cutting Width	- 300 mm Automatic Fixture - 400 mm no Automatic Fixture Installed
Blade Diameter	500 mm
Operation Pressure	0.6 ~ 0.8 Mpa/20 litres (Built In)
Pneumatic Clamping Force :	
*Round Specimen	150 - 180 kg
*Slab Specimen	300 - 360 kg
Cutting Accuracy	$\pm 0.3$ mm
Dimension	2300(L) x 1100 (W) x 1400 (H)
Approx. Weight	600 kg
Power	415 V, 3 ph, 50/60 Hz, 3 kW



Precision Distance  
Remove Control Unit



Cutting Wheel



Touch Screen  
Display Unit



## FILTRATION APPARATUS

**NEW**  
2017

### Filtration

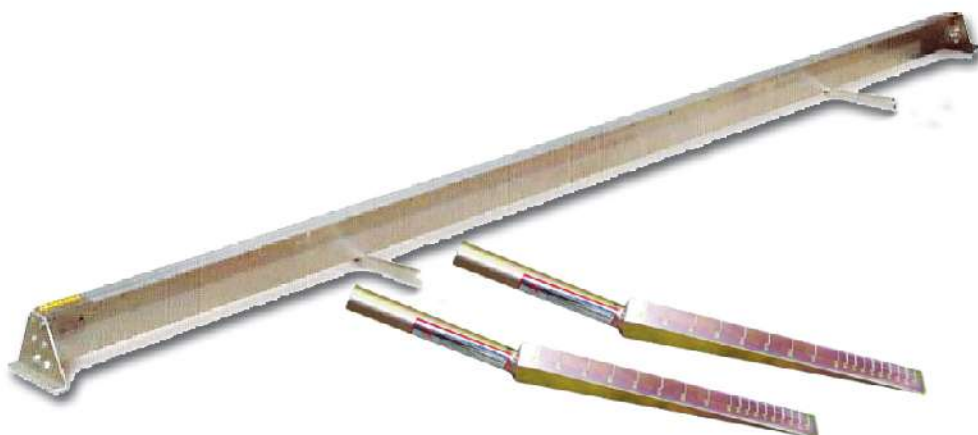
#### Technical Specifications :

Model Number	NL 2016 X / 001
Approx. Weight	1.6 kg
Dimensions	135 (L) x 190 (W) x 755 (H) mm

#### Set Consists Of :

Model Number	Description	Qty
NL 7044 X / 001	Retort Stand	1 unit
NL 7049 X / 002	Retort Clamp	1 unit
NL 2016 X / 001-P001	Glass Buret 100 ml	1 unit





## HEAVY DUTY MOT STRAIGHTEDGE

Standard: UNE 83 120

### Pavement Surface Characteristics

Used to measure irregularities in road pavement. Made from aluminium alloy, 3 m length. Must be used with two wedges, which have to be ordered separately.

### Technical Specifications :

Model Number	NL 2017 X / 002
Dimension (mm)	3100 (L) x 80 (W) x 100 (H)
Approx. Weight	10 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2017 X / 001 – P 001	Measuring Wedges	2nos.

\*1 Copy of Manual Instructions





## MOT STRAIGHTEDGE

Standard: EN 13036-7

### Pavement Surface Characteristics

Used to measure irregularities in road pavement. Made from aluminium alloy, 3 m length. Must be used with two wedges, which have to be ordered separately.

### Technical Specifications :

Model Number	NL 2017 X / 003
Dimension (mm)	1560 (L) x 130 (W) x 60 (H)
Approx. Weight	4.5 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2017 X / 001 – P 001	Measuring Wedges	2nos.



## TRAVELLING BEAM APPARATUS

### Surface Irregularity

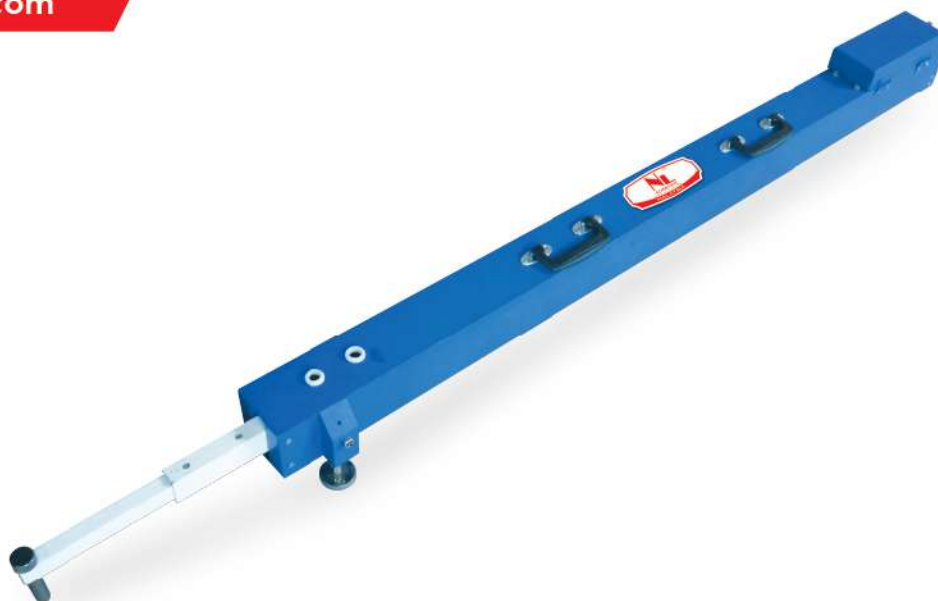
This apparatus is used for detecting the road surface irregularity. It can be used either for concrete or asphalt pavements. The apparatus consists essentially of a beam with rigid wheels at the extremities and a wheel at the middle, which can detect any vertical deviation of the surface from a straight-line between the two wheels at the ends of the machine.

#### Unit Consists Of :

Model Number	NL 2018 X / 001
Dimension (mm)	3200 (L) x 780 (W) x 540 (H)
Scale	2 mm increments up to 10 mm & 5 mm increments 10 to 25
Max. Vertical Deviation	± 25 mm
Approx. Weight	53 kg

\*1 Copy of Manual Instruction





## BENKELMAN BEAM APPARATUS

Standard: CNR No. 141, AASHTO T256-77,  
NF P98-200-2

### Load Deflection

Designed for maximum operator efficiency. The instrument manufacturer from a lightweight and heavy duty material which telescope into a small compact for easy transportation.

#### FEATURES:-

- \*Aluminium structure for extremely light weight
- \*With contactor buzzer

#### Technical Specifications :

Model Number	NL 2019 X / 001
Beam Level Ratio	2 : 1
Product Dimension (mm)	1530 (L) x 150 (W) x 150 (H)
Carry Case Dimension (mm)	1570 (L) x 205 (W) x 210 (H)
Approx. Product Weight	8 kg
Approx. Packing Weight	15 kg

#### Unit Consist Of:

Model Number	Parts Description	Qty
NL 7020 X / 001	Dial Indicator 25 x 0.01 mm	1no.
NL 2019 X / 001	Wooden Carry Case	1no.

\*1 Copy of Manual Instruction



## ROLLING THIN-FILM OVEN

Standard: ASTM D2872, AASTHO T240

### RTFOT Method

Used for measuring the effect of heat and air on a moving film of semisolid bituminous material.

### Technical Specifications :

Model Number	NL 2020 X / 001
Working Temperature	163°C
Disc Rotation Speed	15 r.p.m.
Product Dimension (mm)	810 (L) x 800 (W) x 1250 (H)
Packing Dimension (mm)	910 (L) x 900 (W) x 1350 (H)
Approx. Product Weight	146 kg
Approx. Packing Weight	295 kg
Power	220 V, 1 ph, 50 / 60 Hz, 3500 W

### Unit Consist Of:

Model Number	Parts Description	Qty
NL 2020 X / 001 – P 001	Head Resistance Glass Container 64 x 140 mm	8nos.
NL 2020 X / 001 – P 002	ASTM 13 C Thermometer	1no.

\*1 Copy of Manual Instruction

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## ASPHALT ROTATING PLATE OVEN

Standard: EN 12607-2, EN 13303, ASTM D6, D1754, AASTHO T47, T179, BS 2000, UNE 7110, NF T66-011

### TFOT Method

Used for determining the loss in mass of oil and bituminous and the effect of heat and air on a film of semisolid bituminous material. Internal chamber are fully stainless steel with thick isolated fibreglass. External casing coated with hard wearing paint & having glass viewing door.



### Technical Specifications :

Model Number	NL 2021 X / 001A
Working Temperature	163°C
Working Space	400 x 400 x 430 mm
Plate Rotating Speed	5 r.p.m.
Temperature Fluctuation	±0.5°C
Product Dimension (mm)	630 (L) x 620 (W) x 1110 (H)
Packing Dimension (mm)	760 (L) x 645 (W) x 1190 (H)
Approx. Product Weight	58.5 kg
Approx. Packing Weight	69 kg
Power	220 V, 1 ph, 50 / 60 Hz, 2500 W

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2020 X / 001 – P 002	ASTM 13 C Thermometer	1no.
NL 2021 X / 001 – P 001	Determination Off Loss on Heating (9 Sample Container Ø 55 x 33 mm)	1set
NL 2021 X / 001 – P 002	Determination Off Thin Film (4 Sample Container Ø 140 x 9.5 mm)	1set

\*1 Copy of Manual Instruction





## SAND PATCH APPARATUS

Standard: BS 598-105, ASTM E965, CNR No.94, NF P98-216-1

Single Irregularity Measurement of  
Pavement Surface Courses

This test is performed spreading a measured volume of fine sand (ASTM) or glass spheres (EN) into a circular patch on the road surface and filling the surface depressions to the level of the peaks.

### Technical Specifications :

Model Number	NL 2022 X / 001
Dimension (mm)	350 (L) x 220 (W) x 200 (H)
Approx. Weight	4 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2022 X / 001 – P 001	Aluminum Measuring Cylinder	1no.
NL 2022 X / 001 – P 002	Sand Spreader Disc with Surface Covered by Rubber	1no.
NL 2022 X / 001 – P 003	Screw-Adjusted Dividers	1no.
NL 1007 X / 001 – P 003	Pyknometer	2nos.
NL 2022 X / 001 – P 004	Wind Shield	1no.
NL 2022 X / 001 – P 005	Kneeling Pad	1pck
NL 2022 X / 001 – P 006	Carrying Case	1no.
NL 7000 G / 001	Plastic Measuring Cylinder 10 ml Cap	1no.
NL 7000 G / 002	Plastic Measuring Cylinder 25 ml Cap	1no.
NL 7000 G / 003	Plastic Measuring Cylinder 50 ml Cap	1no.
NL 7041 X / 001	Nylon Soft Brush – 2"	1no.
NL 7055 X / 003	Steel Ruler 300 mm Length	1no.

\*1 Copy Manual Instruction

### Optional Accessories :

Model Number	Accessories Description
NL 2022 X / 001 – A 001	Solid Glass Spheres 250 / 180 µm EN13036-1 (Pack of 5 kg)
NL 2022 X / 001 – A 002	Natural Sand 300 / 150 µm ASTM E965 (Pack of 10 kg)
NL 2022 X / 001 – A 003	Natural Sand 150 / 75 µm ASTM E965 (Pack of 10 kg)



## WATER IN BITUMINOUS APPARATUS

Standard: EN 1428, 12847, ASTM D244, NFTA66-023, T66-113

### Water in Bitumen

Used to determine the water in petroleum products or bituminous material by distilling them with a water immiscible, volatile solvent.

### Technical Specifications :

Model Number	NL 2023 X / 001
Set-up Dimension (mm)	360 (L) x 360 (W) x 1030 (H)
Approx. Weight	8 kg
Power	220 - 240 V, 50 / 60 Hz, 500 W

### Unit Consist Of:

Model Number	Parts Description	Qty
NL 2023 X / 001 - P 001	Glass Condensor	1no.
NL 2023 X / 001 - P 002	Glass Receiving Trap 10 ml	1no.
NL 7044 X / 002	Retort Stand cw Clamp & Boss Head	1no.
NL 2011 X / 001 - P 004	Heating Mantle 100 mm dia.	1no.
NL 7001 G / 004	Round Bottle Flask 500 ml	1no.

\*1 Copy of Manual Instruction



## ACCELERATED POLISHING APPARATUS

Standard: BS 812:114, EN 1097-8, NF D18-575T

### Determination of the Polished Stone Value

The apparatus is used for determining resistance of aggregates used for road wear caused by polishing action of vehicle tyres on a real surface. It used to prepare aggregate samples for testing resistance by using Skid Resistance Apparatus. Maximum of 14 special fabricate specimen moulds and then mounted on a metal wheel and specimens are brought into contact with a rubber tyred wheel and by increasing loads during operation.

### Technical Specifications :

Model Number	NL 2024 X / 002
Dimension (mm)	540 (L) x 630 (W) x 1600 (H)
Road Wheel Rotation Speed	320 r / min
Rubber Wheel Outer Diameter	203 mm
Air Pressure	0.3 Mpa
Rubber Wheel Hardness	55 ± 5IRHD
Road Wheel Outer Diameter	406 mm
Measuring Speed	1 m / s
Approx. Weight	165 kg
Power	415 V, 1 ph, 50 / 60 Hz

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2024 X / 002 - P 001	Corn Emery Ungraded - 6 kg	1pck.
NL 2024 X / 002 - P 002	Flour Emery Ungraded - 6 kg	1pck.
NL 2024 X / 002 - P 003	Control Stone Ungraded - 25 kg	1pck.
NL 2024 X / 002 - P 004	Friction Criggon Stone Ungraded - 25 kg	1pck.
NL 2024 X / 002 - P 005	Specimen Mould	4nos.
NL 2024 X / 002 - P 006	Mould Plate	2nos.
NL 2024 X / 002 - P 007	Solid Rubber Wheel	1no.

\*1 Copy Manual Instruction



NL 2024 X / 002 - P 007



NL 2024 X / 002 - P 005



## SKID RESISTANCE TEST APPARATUS

Standard: BS 812:114, EN 1097-8, NF P18-575

### Pavement Surface Characteristics

The apparatus used for measuring road surface frictional properties. It suitable per both lab and site application as well for Polish Stone Value Apparatus by using curved specimen for Accelerated Polishing Apparatus. This apparatus come with an adjustable pendulum arm and a spring loaded rubber slider mounted on the end of the arm. The pendulum is raised and allowed to swing freely during operation, allowing the edge of the rubber slider to skid across the surface of specimen. Supplied complete with 6 rubber sliders for lab & site use.



### Technical Specifications :

Model Number	NL 2025 X / 001
Dimension (mm)	700 (L) x 700 (W) x 340 (H)
Approx. Weight	32 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2025 X / 001 - P 002	Rubber Slider for Site Use	3nos.
NL 2025 X / 001 - P 004	Measuring Ruler for sliding Length Verification	1no.
NL 2025 X / 001 - P 005	Spray Bottle for Surface Wetting	1no.
NL 2025 X / 001 - P 006	Tools Kits Set	1set
NL 2025 X / 001 - P 007	Carrying Case	1no.
NL 7034 X / 009	Glass Thermometer (-10°C to 110°C x 1°C Div)	1no.

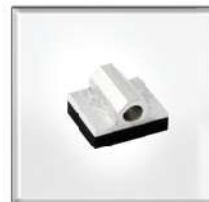
\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	NL 2025 X / 001
NL 2025 X / 001 - P 001	Rubber Slider for Lab Use
NL 2025 X / 001 - P 003	Metal Base c/w Specimen Clamp for PSV Test



NL 2025 X / 001 - P 001



NL 2025 X / 001 - P 002



NL 2025 X / 001 - P 005



NL 2025 X / 001 - P 006



NL 2025 X / 001 - P 007



NL 7034 X / 009



NL 2025 X / 001 - P 003



NL 2025 X / 001 - P 004

## PRESSURE FILTER APPARATUS

Standard: BS 598-102, EN 12697-1

### Bitumen Content

This simple equipment of pressure filter is for determining the bitumen content. The pressure filter consists of a plated steel pressure vessel with a filter support and pressure gauge.

The procedure need to use required test sieve and filter filler funnel which have to be **ordered separately**.

### Technical Specifications :

Model Number	NL 2026 X / 001
Overall Dimension	292 dia. X 382 mm
Pressure Gauge Range	0 - 58 psi / 0 - 4 bar
Approx. Weight	24 kg

### Set Consists Of :

Model Number	Parts Description	Qty
NL 2026 X / 001 - P 002	Foot Pump	1no.
NL 2026 X / 001 - P 003	Whatman #1 Filter Paper (set of 50 pcs) OD 270mm ID 33mm	1box

\*1 Copy of Manual Instruction

### Optional Accessories :

Model Number	Parts Description	Qty
NL 2026 X / 001 - P 001N	Filter Filler Funnel	1no.
NL 1010 S 200W - 1009	Test Sieve 200 mm (63 $\mu$ m )	1no.







Withdraw Tube



Filter Funnel



Saybolt Thermometer

## SAYBOLT VISCOMETER APPARATUS

Standard: ASTM D88, AASHTO T72

### Saybolt Universal

Used to determine the saybolt viscosities of petroleum products at the required temperatures between 70°F to 210°F (21.1°C to 98.9°C).

### Technical Specifications :

Model Number	NL 2027 X / 001
Dimension (mm)	270 (L) x 270 (W) x 550 (H)
Approx. Weight	15 kg
Power	240 V, 1 ph, 50 / 60 Hz

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2027 X / 001 – P 001	Viscometer Probe	2nos.
NL 2027 X / 001 – P 002	Furoil Orifice	2nos.
NL 2027 X / 001 – P 003	Universal Orifice	2nos.
NL 2027 X / 001 – P 004	Flask Pedestal	2nos.
NL 2027 X / 001 – P 005	Temperature Sensor Probe	1 no.
NL 2027 X / 001 – P 006	60 ml Saybolt Viscosity Flask	2nos.

\*1 Copy of Manual Instructions

### Optional Accessories :

NL 2027 X / 001 – A 001	Saybolt Thermometer ASTM 17C, 19°C to 27°C X 0.1°C
NL 2027 X / 001 – A 002	Saybolt Thermometer ASTM 18C, 34°C to 42°C X 0.1°C
NL 2027 X / 001 – A 003	Saybolt Thermometer ASTM 19C, 49°C to 57°C X 0.1°C
NL 2027 X / 001 – A 004	Saybolt Thermometer ASTM 20C, 57°C to 65°C X 0.1°C
NL 2027 X / 001 – A 005	Saybolt Thermometer ASTM 21C, 79°C to 87°C X 0.1°C
NL 2027 X / 001 – A 006	Saybolt Thermometer ASTM 22C, 95°C to 103°C X 0.1°C
NL 2027 X / 001 – A 007	Filter Funnel
NL 2027 X / 001 – A 008	Withdraw Tube
NL 2027 X / 001 – A 009	Bath Oil(5 litres)

\*Manual Instruction 1 copy.



## ASPHALT PERMEAMETER APPARATUS

Standard: MPW Belgium Highway Model

### Permeability

Mainly used in situ to perform and to check the permeability and drainage on road carpets, concrete pavements, tamped earth & etc. The test consists in filling the cylinder with water, ermetically positioning it on the carpet under test and then incalculating the time needed by a certain quantity of water to be absorbed by the same. The instrument is composed of a bottomless plexiglass cylinder 140 mm inside diameter, fitted on a base. The cylinder has two black calibration lines: one at zero point and one at 250 mm.

### Technical Specifications :

Model Number	NL 2029 X / 001
Dimension (mm)	260 (L) x 260 (W) x 415 (H)
Approx. Weight	8 kg

### Unit Consist Of:

Model Number	Parts Description	Qty
NL 2029 X / 001 – P 001	Arcylic Cell	1no.
NL 2029 X / 001 – P 002	5 kg Counter Weight	1no.

\*1 Copy of Manual Instruction

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## MOTORISED VERTICAL EXTRUDER

Standard: ASTM D1559, D5581, AASTHO T245

### Remove Specimen

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.

### Technical Specifications :

Model Number	NL 2033 X / 001
Dimension (mm)	430 (L) x 640 (W) x 960 (H)
Extruder Speed	70 mm / minute
Reverse Speed	140 mm / minute
Maximum Extrude Length	230 mm
Power	415 V, 3 ph, 50/60 Hz, 150 Watt, 1Hp
Approx. Weight	130 kg

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2033 X / 001 – P 001	Marshall Extruder Kits	1set
NL 2033 X / 001 – P 002	CBR Extruder Kits	1set
NL 2033 X / 001 – P 003	Proctor Extruder Kits	1set

\*1 Copy of Manual Instruction



## THERMOSTATIC ASPHALT PLANETARY MIXER (20 LITRES CAP)

Standard: ASTM D1559, EN 1269/35, BS 598-107

### Bituminous Mixing

The mixer has been designed for bituminous homogenous mixing, consists essentially in a horizontal tilting thermostatic drum. Tilting drum is 130° angles. The mixing chamber is heated by dielectric chamber with diathermic thermostatic control. The unit comes with PID temperature control unit with digital display. This large capacity heavy duty mixer designed to mix bituminous sample for tensile splitting test, compaction test, marshall and other test where uniformity is required. The mixer mixed homogeneous, uniform efficient fast mixture action. They are of easy and practical utilization suite for laboratory purpose. This mixer featuring 20 litres capacity. The bituminous mixture can be easily discharge by the total turnover of the mixing chamber.

### Technical Specifications :

Model Number	NL 2034 X / 003
Mixing Capacity	10 Litres
Drum Capacity	20 Litres
Planetary Speed	45 ±5 RPM
Spindle Speed	75 ±5 RPM
Temperature Range	Ambient - 250°C (Adjustable)
Temperature Accuracy	±3°C
Setting Timer	1 - 999 Seconds
Mixing Speed (RPM)	Planetary : 0-55 , Spindle : 0-92
Overall Dimension	1200 (L) x 550 (W) x 1320 (H) mm
Packing Dimension	1300 (L) x 650 (W) x 1520 (H) mm
Drum Heating	3000 W
Approx. Weight	196 kg
Packing Weight	216 kg
Power	220 V, 1 ph, 50 / 60 Hz, 15 amp Motor : 750 W, 1hp, 350 W, 1/2 hp

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2034 X / 002 – P 001	Whisk Paddle	1no.
NL 2034 X / 002 – P 002	Sampling Spoon	1no.

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## DIGITAL SOLVENT RECOVERY STILL APPARATUS

### Solvent Recovery

Our new recovery still is coming with cooling circulation tank and it is moveable type to located an ideal location. Circulation cooling tank is coming with water circulation water pump. Recovery unit consist of two integral tanks, which are for contaminated solvent and for the correction of clean redistilled solvent.

#### Main Feature :

- Fully stainless steel design ( main unit & circulation cooling unit)
- Come with circulation cooling unit which consist circulation cooling unit
- Overall efficient and compact design
- Digital thermostatic control unit
- Built-in security devices to prevent overheating



#### Technical Specifications :

Model Number	NL 2036 X / 004
Recycling Capacity	10 L / H
Temperature Control Range	50 - 200°C
Heating Power	1000 Watt x 2 nos
Product Dimension (mm)	780 (L) x 452 (W) x 1280 (H)
Packing Dimension (mm)	880 (L) x 552 (W) x 1380 (H)
Approx. Product Weight	46 kg
Approx. Packing Weight	50 kg
Power	220 V, 1 ph, 50 / 60 Hz

#### Unit Consist Of :

Model Number	Parts Description	Qty
NL 2036 X / 004 – P 001	Recovery Still Unit c/w Funnel	1unit.
NL 2036 X / 004 – P 002	Moveable circulation cooling tank c/w water circulation pump	1unit.

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#### Optional Accessories :

Model Number	Parts Description	Qty
NL 7048 SS	Stainless Steel Measuring Jug	1no.



Digital Thermostatic Controller

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## DIGITAL AUTO CLEVELAND FLASH AND BURNING POINT APPARATUS

Standard: EN 22592, ASTM D92, AASHTO T48, IP 36/67, UNE 7075, NFT60-118, ISO 2592

### Determination of Flash & Fire Point

The apparatus is applicable for determining measurement of flash points and burning points of petroleum products (the Cleveland open cup method) except petroleum products with flash points and burning points lower than 79°C.

### Technical Specifications :

Model Number	NL 2039 X / 003
Ignition	Automatic
Heating Power of Furnace	800 W
Temperature Adjustment	Controlled Silicon (Continuous)
Dimension (mm)	265 (L) x 340 (W) x 330 (H)
Approx. Weight	6 kg
Power	220 V, 1 ph, 50 / 60 Hz

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 2039 X / 002 – P 001	Thermometer IP 28C (ASTM 11C), Range -6 +400°C	1no.
NL 2039 X / 002 – P 002	Brass Cup With Handle	1no.
NL 2039 X / 002 – P 003	Flame Gas Device Unit c/w Gas Hose	1unit.

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### Optional Accessories :

Model Number	Accessories Description
NL 2039 X / 002 – A 001	Flame Gas Regulator





## BINDER RECOVERY APPARATUS

Standard: BS 598-102, EN 12697-1

### Asphalt Binder Analysis

The unit comprises a water bath, electric heater and vacuum pump complete with regulator gauge and manifold. This double unit is particularly useful as most test method require duplicate binder determination. The apparatus is mounted on base frame and supplied complete with two flasks, bungs and rubber tubing.

### Technical Specifications :

Model Number	NL 2041 X / 001
Approx. Weight	14 kg
Water Bath	220 V, 1 ph, 50 / 60 Hz, 750 W, 5 A
Vacuum Pump	220 V, 1 ph, 50 / 60 Hz, 120 W, 0.5 A

### Unit Consists Of :

Model Number	Parts Description	Qty
NL 7063 X / 001	Digimatic Water Bath	1no.
NL 7022 X / 001	Oil Free Vacuum Pump	1no.
NL 2041 X / 001 - P 001	Rubber Bungs c/w Copper Tubing & Flexible Hose Connector	1no.
NL 7001 G / 003	Round Bottom Flask (250 ml)	2nos.
NL 2041 X / 001 - P 002	Mounting Base	1set
NL 2041 X / 001 - P 003	Pyrex Flask (1 litre) with Rubber Bung & Hose	1no.
NL 7049 X / 002	Retort Clamp 4 Prong	2nos.
NL 7045 X / 001	Boss Head (Small Size)	2nos.
NL 2041 X / 001 - P 004	Ball Valve with Brass Attachment	2nos.

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### Optional Accessories :

Model Number	Accessories Description
NL 2041 X / 001 - A 001	Glass Bit 2 kg - 1 pack



## AGGREGATE GRAVITY & ABSORPTION TESTER

Standard: ASTM D6752-02, D6857-03

### Gravity & Absorption

An innovative product for determination of bulk specific gravity, apparent specific gravity and absorption of fine and coarse aggregate in less than 15 minutes.

### Technical Specifications :

Model Number	NL 2053 X / 001
Brand	Corelok, Instrolek
Vacuum Level	29.95 in. Hg, 1 TORR, 1.33 MBARS
Chamber Size (mm)	184 (L) x 425 (W) x 497 (H)
Approx. Weight	64 kg
Power	220 V, 50 / 60 Hz, 13 A