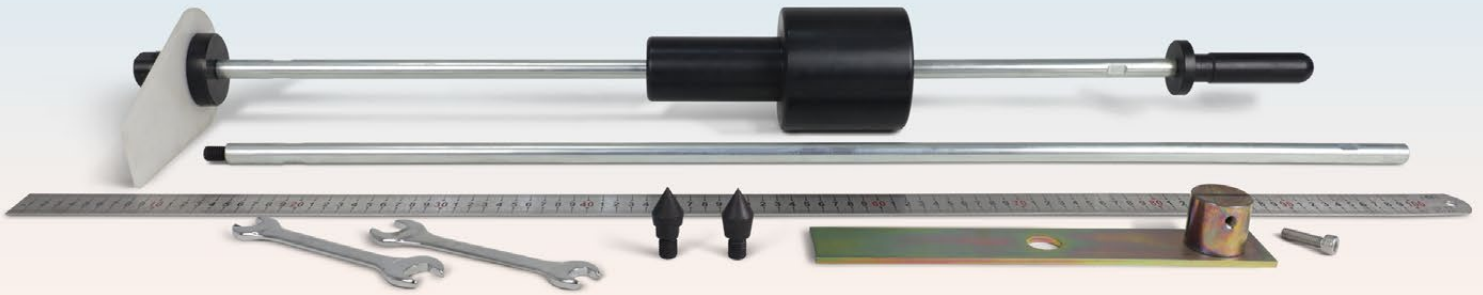


# DYNAMIC CONE PENETROMETER 16-T0012/C

## STANDARD: ASTM D 6951-03

The TRL DCP (Dynamic Cone Penetrometer) is an instrument designed for the rapid in situ measurement of the structural properties of existing road pavements constructed with unbound materials. Continuous measurements can be made down to a depth of approximately 850 mm or when extension shafts are used to a recommended maximum depth of 2m. Where pavement layers have different strengths the boundaries can be identified and the thickness of the layers determined.

Correlation's have been established in earlier work (Van Vuuren 1969, Kleyn and Van Heerden 1983, Smith and Pratt 1983) between measurements with the DCP and CBR (California Bearing Ratio) so that results can be interpreted and compared with CBR specifications for pavement design. A typical test takes only a few minutes and therefore the instrument provides a very efficient method of obtaining information that would normally require the digging of test-pits.



### COMPRISES

|             |   |
|-------------|---|
| 16-T0012/C1 | Sliding hammer (steel made) weighing 8kg                                  |
| 16-T0012/C2 | Impact anvil driving rod and clip, falling 575mm                          |
| 16-T0012/C3 | Steel rod, diameter 16 mm, up to a depth of 800 mm below the surface      |
| 16-T0012/C4 | N° 3 threaded end cones in tempered steel, 20 mm diameter, 60° cone angle |
| 16-T0012/C5 | Bearing plate and measuring rod with adjustable scale (graduated in mm)   |
| 16-T0012/C6 | Aluminum alloy carrying case  |
| Dimensions  | 1080x310x150mm  |
| Weight      | 22kg  |

### ACCESSORIES AND SPARE PARTS (need to be ordered seperately)

|             |                                   |
|-------------|-----------------------------------|
| 16-T0012/C7 | Extension rods: 400 mm, dia. 16mm |
|-------------|-----------------------------------|



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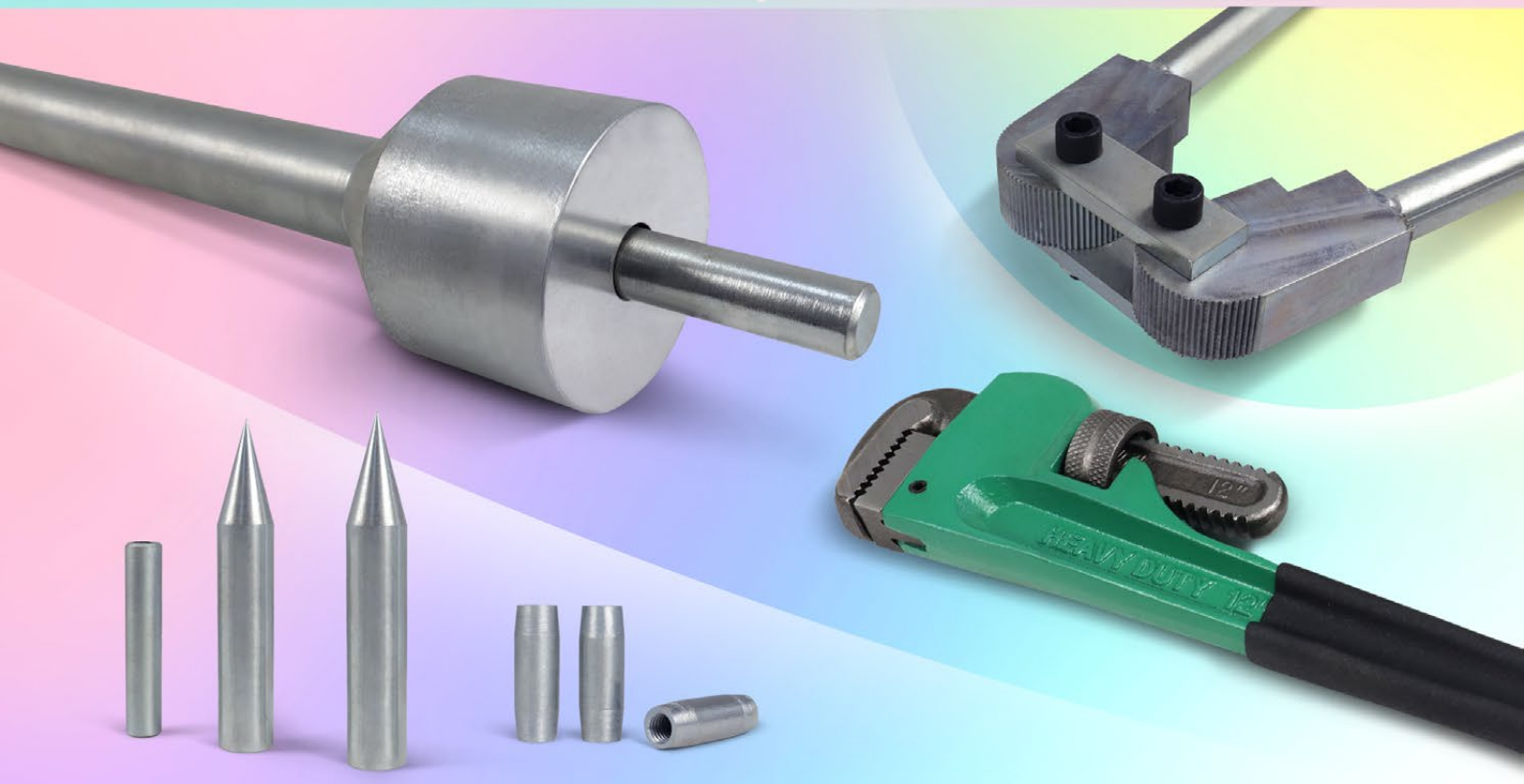
# MACKINTOSH PROBE MPA-1

## STANDARD: BS1377

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

## PACKING LIST

|                                 |       |
|---------------------------------|-------|
| Penetration rod (47¼ inch each) | 13PCS |
| Coupling                        | 13PCS |
| Pipe wrenches                   | 2 PCS |
| Penetration cone                | 2 PCS |
| Hammer nut                      | 2 PCS |
| Hammer                          | 1 PC  |
| Lifting handle                  | 1 PC  |
| Heavy duty carrying case        | 1 PC  |



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# DYNAMIC CONE PENETROMETER K-100

## STANDARD: ASTM D 6951-03

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



## COMPRISES

|        |  |        |                                     |
|--------|--|--------|-------------------------------------|
| K100   | Upper assembly (Stainless Steel) includes: | K012   | DCP User's Manual                   |
| • K103 | • Quick-Connect Upper Rod                  | K450   | Pins with Clips, 2 per package      |
| • K102 | • Handle                                   | K500   | Vertical Scale, 40"                 |
| • K200 | • Dual Mass Hammer                         | K510   | Foot for Vertical Scale             |
| K1330  | Drive Rod 30" Stainless Steel with end cap | K530   | Upper Attachment for Vertical Scale |
| K420   | Hex Key, 1/4", "Allen" Wrench Type         | K700   | Reusable Hardened Point             |
| K430   | 3-in-ONE Oil                               | K800   | Adapter for Disposable Cones        |
| K445   | Wrenches 9/16", open end, black            | K900   | Disposable Cones, Pkg of 25         |
| K011   | CD of DCP User's Manual & Excel® Template  | P-1720 | Alloy Aluminum Carrying Case        |

## ACCESSORIES AND SPARE PARTS (need to be ordered seperately)

|         |   |          |                               |
|---------|---|----------|-------------------------------|
| K133775 | 37.75" Drive Rod (Penetration to 35.75") (Stainless Steel) with end cap | K1348    | Stainless Steel 48" Drive Rod |
| K1312   | 12" Drive Rod for use with 24" Extension Rods                           | K1348S   | Extra Strong 48" Drive Rod    |
| K1724   | Extension Rod 24" for use with 12" Drive Rod in weak soil               | K133775S | Extra Strong 37.75" Drive Rod |



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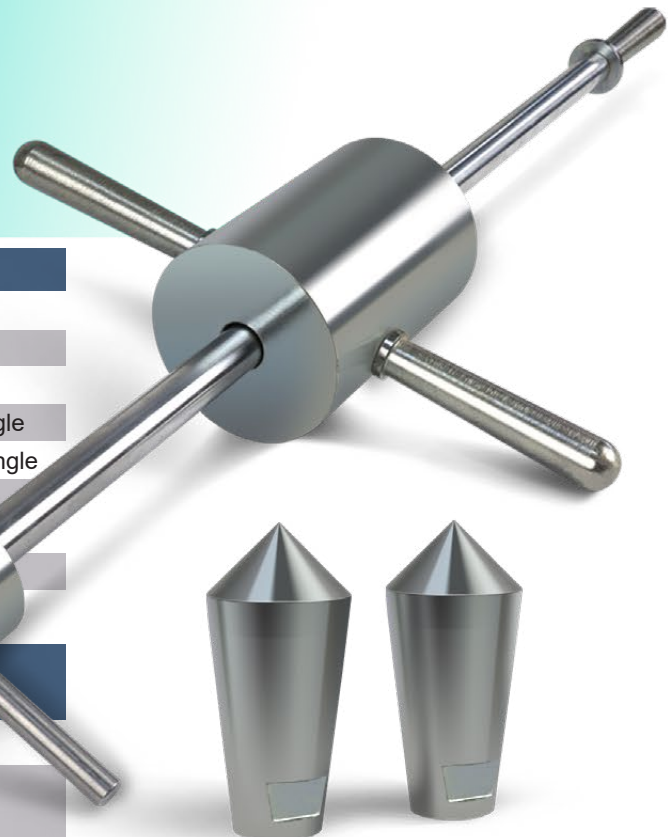
# MANUAL DYNAMIC PENETROMETER 16-T0012/B

## STANDARD: DIN 4094 LRS10 UNI ENV 1997-3

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

Dimensions: 1080x310x150mm

Gross Weight: 85kgs



### COMPRISES

- 16-T0012/B1 Hammer, 10 kg
- 16-T0012/B2 Anvil with rod and full travel impact plug, 6 kg
- 16-T0012/B3 11 threaded sounding rods dia. 22 mm x 1000 mm long
- 16-T0012/B4 Drive conical point, 500 mm<sup>2</sup> area, 25.2 mm dia, 90° angle
- 16-T0012/B5 Drive conical point, 1000 mm<sup>2</sup> area, 35.6 mm dia, 90° angle
- 16-T0012/B6 Base plate with seating for scale
- 16-T0012/B7 Rule graduated in mm, 1 m long
- 16-T0012/B8 Lever device for rod extraction
- 16-T0012/B9 Steel carrying case

### ACCESSORIES AND SPARE PARTS (need to be ordered separately)

- 16-T0012/C7 Extension rods: 400 mm, dia. 16mm
- 16-T0012/B10 Spare expendable conical point, 1000 mm<sup>2</sup> area, 35.6 mm dia, 90° angle

# MANUAL DYNAMIC PENETROMETER 16-T0012/E

## STANDARD: DAS1289.6.3.2&AS 1289.6.3.3

The Dynamic Cone Penetrometer (DCP) is used to determine underlying soil strength by measuring the soil penetration of the device into the soil after every blow.

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

### COMPRISES

|              |                                    |
|--------------|------------------------------------|
| 16-T0012/E1  | Reversible top nut                 |
| 16-T0012/E2  | Sliding rod                        |
| 16-T0012/E3  | Hammer, 9kg                        |
| 16-T0012/E4  | Anvil                              |
| 16-T0012/E5  | Bolt                               |
| 16-T0012/E6  | Helmet                             |
| 16-T0012/E7  | Upper attachment for scale         |
| 16-T0012/E8  | Adjustable scale (graduated in mm) |
| 16-T0012/E9  | 1m extension rod                   |
| 16-T0012/E10 | Bearing plate                      |
| 16-T0012/E11 | Standard DCP cone                  |
| 16-T0012/E16 | Spanners to suit Rods and Helmet   |
| 16-T0012/E17 | Portable carrying case             |
| 16-T0012/E13 | Rod extraction                     |

### ACCESSORIES AND SPARE PARTS (need to be ordered separately)

|              |                        |
|--------------|------------------------|
| 16-T0012/E12 | Perth penetrometer tip |
| 16-T0012/E14 | 1m extraction rod      |
| 16-T0012/E15 | 1.5m extraction rod    |



## MOTOR OPERATED DYNAMIC PENETROMETER 16-T0013-B

### **STANDARD: AS1289.6.3.2**

The motor operated dynamic penetrometer 16-T0013-B is manufactured according to Australian standards and is designed to perform soil penetration resistance test, to determine underlying soil strength by measuring the soil penetration of the device into the soil after every blow. The dropping height of this device is  $600 \pm 5/510 \pm 5$ mm adjustable, and the hammer weight is  $9 \pm 0.1$ kg.

The device includes a host part, a drive shaft, a gasoline engine and a manual extractor. The engine drives the lifting mechanism through a flexible shaft to lift a 9 kg weight drop to the specified height and make it fall freely.

Built on wheels, which is convenient for transportation and operation.



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# MOTOR OPERATED DYNAMIC PENETROMETER 16-T0013-B



|                      |                                   |
|----------------------|-----------------------------------|
| Power                | Briggs & Stratton 3.5HP           |
| Accessories          | Anvil, 1 pc                       |
|                      | Penetration rod, dia.16mm, 10 pcs |
|                      | DCP cone, 30°, 1 pc               |
|                      | Perth penetrometer tip, 1 pc      |
|                      | Spare flexible shaft, 1 pc        |
|                      | Spanner, 14mm, 2 pcs              |
| Manual rod extractor |                                   |
| Dimensions           | 810*600*1680mm                    |
| Weight               | 70kg                              |



# PNEUMATIC DRIVEN DYNAMIC PENETROMETER 16-T0012/P

**STANDARD: ISO 22476-2, DIN 4094-3**

Pneumatic DPL and DPM testing set is suitable for doing light (10 kg) and medium-heavy (30 kg) dynamic penetration tests according to ISO 22476-2 (replaces DIN 4094-3). This pneumatic DPL and DPM testing set is a cost-effective, simple and reliable tool suitable for light dynamic penetration testing up to approx. 10 - 12 m depth.

It comprises of a pneumatic power-pack with a four-stroke gasoline engine and maintenance-free air-compressor all integrated in a sturdy framework with carrying handle and a solid hammering unit with integrated air-cylinder. The unit holds a 10 kg (and an additional 20 kg) drop-weight, falling height 50cm and a fully automated pressure release valve, approx. 20 blows per minute. The air is led through the tubes of the framework where it can lose most of its warmth. It is provided with a holder for the connection piece that goes on to the upper sounding tube. Total net weight is 130 kg approx. (with sounding rods and accessories).

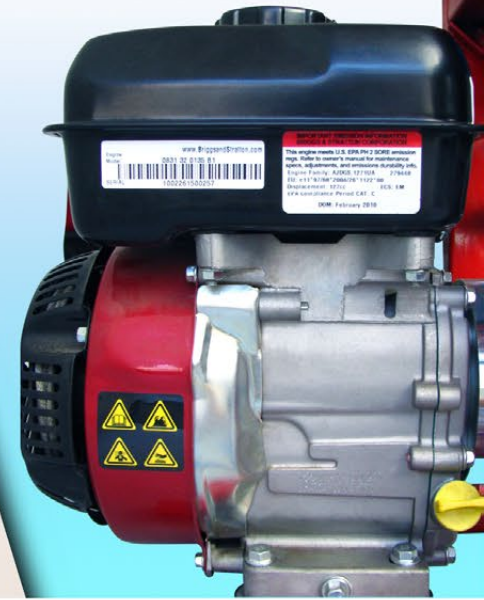
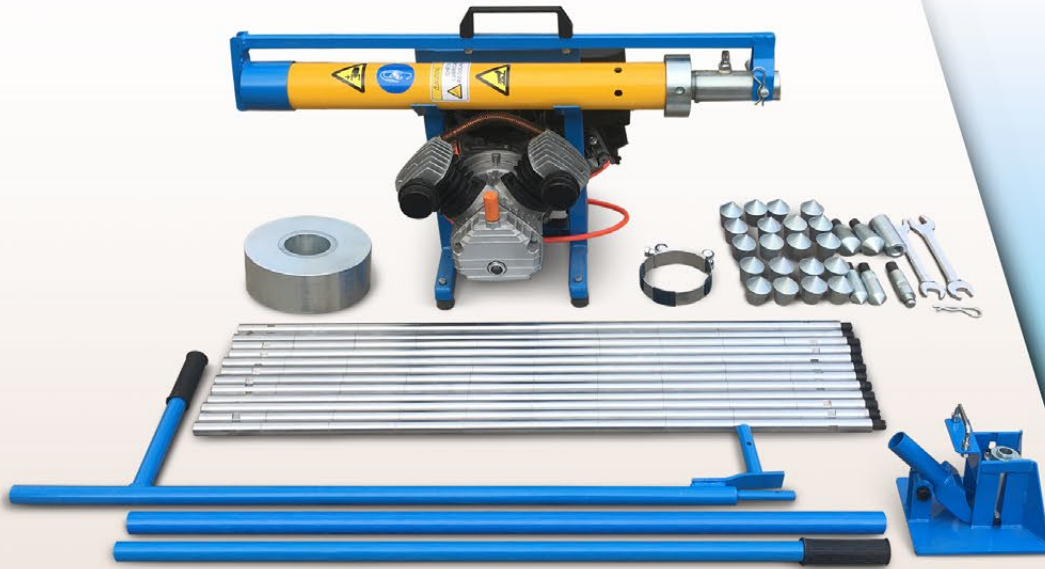


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# PNEUMATIC DRIVEN DYNAMIC PENETROMETER 16-T0012/P



## COMPRISES

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

## OPTIONAL PARTS

|              |  |
|--------------|--|
| 16-T0012/P10 | 20kg drop weight 1pc   |
| 16-T0012/P11 | Sounding tube (dia.32 x 1000 mm) with depth indication every 100 mm 12pcs        |
| 16-T0012/P12 | Conical sounding tip of tempered steel - 15cm <sup>2</sup> , M16 connection 1pcs |

