Soil Proctor Penetrometer

LT-S0101 | Moisture-penetration relationships in fine-grained soils

Manual spring system • Maximum load reading • 9 interchangeable needles



0-55 kg

SPRING LOAD SCALE RANGE

9 needles

INTERCHANGEABLE STAINLESS STEEL TIPS

1 kg scale graduations • Supplied with carrying case

LT-S0101

Photographs and Instrument Components

Manual loading, mechanical reading and interchangeable needles

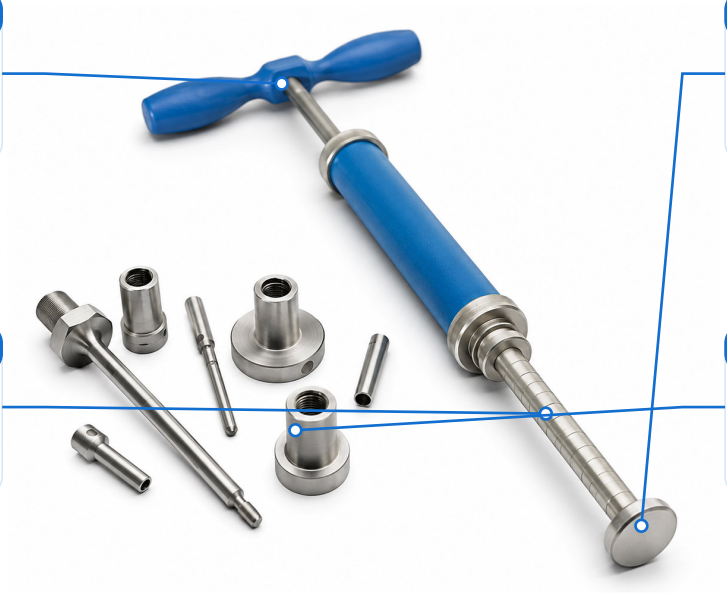
The LT-S0101 is a manual instrument for comparing penetration resistance in fine-grained soils. Read the maximum applied spring load and evaluate results using the moisture-penetration relationship established for the soil.

MANUAL LOADING

Manually applied axial force advances the selected needle into the soil specimen.

MECHANICAL READING

The 0-55 kg spring load scale has 1 kg graduations for maximum load reading.



INTERCHANGEABLE TIP

Stainless steel needles of different diameters provide different contact areas.

PORTABLE SET

The instrument and nine needles are supplied with a carrying case.



Mechanical body and loading arrangement



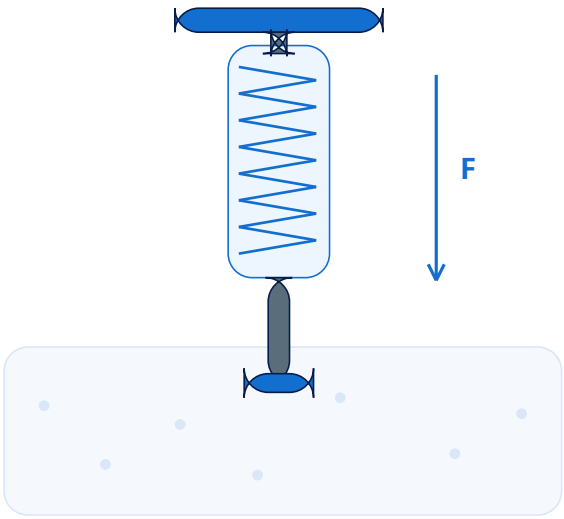
Interchangeable needle set

LT-S0101

Load, Needle Area and Penetration

Select the needle • Apply axial load • Read maximum load • Compare

MANUAL LOADING AND SOIL PENETRATION



LOAD: MECHANICAL SPRING SYSTEM

CONTACT AREA: SELECTED NEEDLE

Record needle diameter together with maximum load

Evaluate resistance using a suitable correlation

REPRESENTATIVE PENETRATION DIAGRAM • NOT TO SCALE

Select the Needle

Select a needle suitable for the expected soil resistance and secure it to the instrument.

Load and Read

Advance the instrument axially. Record the maximum load from the mechanical reading.

Compare Results

Account for needle area. Compare results with data established for the same soil.

Changing needle diameter changes the contact area with the specimen. Record the load reading together with the selected needle. Evaluate moisture-penetration behaviour using a suitable laboratory correlation for the same material.

Consistent Measurement Conditions

Record specimen identification, moisture condition and the selected needle. Advance the needle axially into the specimen; apply speed, depth and repetitions according to the test procedure.

Maintain consistent specimen preparation and loading for comparative tests. Clean the tip and check its connection.

Moisture and Compaction Studies

Penetration resistance results may be evaluated alongside laboratory moisture-penetration relationships and compaction data. Moisture or dry-density assessment requires a soil-specific correlation.

Consider grading and specimen condition. Assess method suitability for very dry or distinctly granular materials according to the test procedure.

LT-S0101

Technical Specifications and Needle Set

LT-S0101 | Manual spring system and nine stainless steel needles

Technical Specification	Value / Description
Model / Operation	LT-S0101 • Manual • Carrying case included
Spring Load Scale / Graduation	0-55 kg • 1 kg
Set Dimensions / Approximate Weight	550 × 250 × 80 mm • 8 kg

Needle Code	Needle Diameter • Stainless Steel
LT-S0101/1	Ø4.52 mm
LT-S0101/2	Ø5.23 mm
LT-S0101/3	Ø6.40 mm
LT-S0101/4	Ø9.07 mm
LT-S0101/5	Ø12.83 mm
LT-S0101/6	Ø16.54 mm
LT-S0101/7	Ø20.22 mm
LT-S0101/8	Ø24.79 mm
LT-S0101/9	Ø28.55 mm

Link Needle Diameter with Maximum Load Records

Record specimen identification, needle code, diameter and maximum load together. Evaluate results using a suitable moisture-penetration correlation for the same soil.

Penetration Measurement Workflow

01
Prepare
Prepare the specimen and suitable needle.

02
Load
Advance the instrument axially.

03
Read
Record maximum load and needle diameter.

04
Evaluate
Compare with the relevant correlation.

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