



EIE

Fully Automatic Universal Penetrometer

Introduction

EIE – Fully automatic penetrometer is an intelligently designed device for determining the consistency or hardness of a substance by measuring the depth or rate of penetration of a rod/needle/hollow cone/solid cone/ tapered cone driven into it by a known force. EIE – Fully automatic penetrometer is ideal for testing a wide range of materials to determine their hardness or softness quality (Consistency).

Complies with following International Standards

ASTM D5, ASTM D217, ASTM D937, ASTM D1321, AASTHO T-49, IP 50, IP 49, IP 179

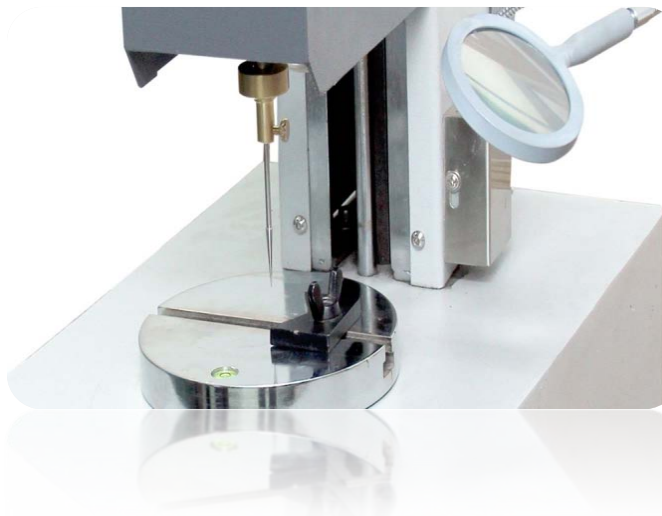


Principle of operation

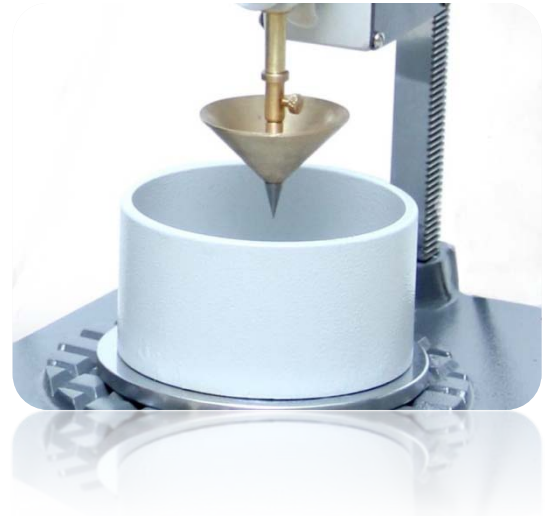
Penetration tests are performed on petroleum products to determine consistency and shear stability (lubricating greases) for design, quality control and identification purposes. A standard cone or needle is released from a penetrometer and allowed to drop freely into the sample for 5 seconds (or a different specified interval) at constant temperature. The depth of penetration of the cone or needle into the sample is measured in tenths of a millimeter by the optoelectronic sensor fitted within the penetrometer.

Applications

- 1) Needle Penetration of Bituminous Materials **ASTM D5; IP 49; DIN 52010**
- 2) Cone Penetration of Lubricating Grease **ASTM D217; IP 50; ISO 2137; DIN 51804; FTM 791-311, FTM 791-313**
- 3) Cone Penetration of Petrolatum **ASTM D937; IP 179; ISO 2137; DIN 51580**
- 4) Needle Penetration of Petroleum Waxes **ASTM D1321; IP 376; DIN 51579**
- 5) Cone Penetration of Lubricating Grease Using One-Quarter and One-Half Scale Cone Equipment **ASTM D1403; IP 310; ISO 2137; DIN 51804**



Needle Penetration



Cone Penetration

Salient Features

- ❖ Fully Automatic operational Design
- ❖ Compact design and rugged construction ensures long service life
- ❖ Compact design also facilitates easy transport for field applications.
- ❖ Sturdy cast iron base provides excellent support
- ❖ Digital Alphanumerical LCD touch screen display with keyboard (LCD Make : **Schneider Electric**)
- ❖ Optoelectronically depth detection & measurement through imported optoelectronic sensor
- ❖ Automatically timed programmable penetration measurements -
Preset penetration time at factory (Operator can also enter the user defined penetration interval through LCD touch screen)
- ❖ Motorized placement of penetrator on sample surface
- ❖ Penetrometer arm automatically comes back to its home position at the end of 5 seconds penetration test
- ❖ In-built Facility to tare and reset the measurement results
- ❖ Display resolution of penetration depth in tenths of units (0.01mm)
- ❖ Magnifying lens for adjusting needle tip/cone tip exactly on the sample surface
- ❖ Low voltage Illuminator mounted on flexible arms to assist an operator during testing
- ❖ Built-in spirit level and leveling screws to ensure proper alignment
- ❖ Micrometer differential gearing mechanism for fine movement of head
- ❖ Weight of the Needle/Cone and plunger match the criteria of ASTM and IP requirements.
- ❖ The penetration value is measured and indicated on digital LCD display
- ❖ Large, removable base accommodates grease worker cups and other ASTM and non-standard sample containers
- ❖ Complete selection of penetrometer cones, needles and accessories for petroleum products testing and for a wide range of other applications (See optional accessories)
- ❖ Supplied complete with Needle/cone, container and applicable weight





EIE

Fully Automatic Universal Penetrometer

Technical Specifications of EIE – Universal Penetrometer

<i>Attributes</i>	<i>Specifications</i>
Instrument Body	Fabricated from Mild Steel Material
Paint	Powder coating in attractive shades
Body Size	22" x 14" x 21" (L x W x H)
Electric motor	Reputed make induction motor for up and down movement of penetrometer arm
Sensor	Imported Optoelectronic Sensor for penetration depth measurement
Controller	Programmable Touch screen LCD Controller
Display	Colour LCD Display
Touch screen Make	Schneider Electric
Penetration measurement accuracy	1/100 th mm (0.01 mm)
Data storage	Up to last 10 readings and further expandable (optional)
Power supply	220 Volts, 50 Hz, Single Phase, AC Supply
Ambient Temperature	40 C
Ambient Humidity	40% - 80% Rh
Special Features	Auto-reversal on completion of penetration test cycle
Standard Supply	<ol style="list-style-type: none">1) Penetrometer Unit2) Needle/Hollow cone/Solid cone as per test requirement3) IQ, OQ Documents in case of Pharmaceutical Industries4) Test Report5) Calibration Certificate



EIE

Electronic Bursting Strength Tester – Fully Automatic

Manufactured By



Marketed By



EIE INSTRUMENTS PVT. LTD.
(An ISO 9001 : 2008 Certified Company)

www.eieinstruments.com | info@eieinstruments.com | service@eieinstruments.com |

Complies to following International Standard

ASTM D5, ASTM D217, ASTM D937, ASTM D1321, AASTHO T-49, IP 50, IP 49, IP 179

Salient Features

-