



Available variants

- Penetrometer for Petroleum Jelly as per IP 179 / ASTM D937
- Manual Penetrometer for Petroleum Jelly as per IS 1508 / IS 4887

The Petroleum Jelly Penetrometer is a precision laboratory testing instrument designed to evaluate the hardness and firmness of Petroleum Jelly by measuring the penetration depth of a specified cone under controlled test conditions. The instrument is available in Automatic Digital Timer and Manual models and is suitable for testing as per ASTM D937, IS 1508, IS 4887, IP 179 and ISO 2137.

Available Variants

The instrument is available as a Penetrometer for Petroleum Jelly as per IP 179 / ASTM D937 and as a Manual Penetrometer for Petroleum Jelly as per IS 1508 / IS 4887. An automatic digital timer version is available for applications requiring automatic control of the penetration time, while the manual version provides hand-operated control.

Specifications

Parameter	Specification
Test Material	Petroleum Jelly
Test Method	Cone Penetration Method
Applicable Standards	ASTM D937, IS 1508, IS 4887, IP 179, ISO 2137
Penetration Distance	At least 40 mm
Dial Gauge Range	0–400
Dial Gauge Graduation	0.1 mm
Penetration Measurement	To nearest 0.1 mm
Cone & Movable Attachments Weight	150.0 ± 0.1 g
Digital Timer Range	0–99 minutes
Automatic Penetration Time	5 seconds
Digital Timer Least Count	0.1 second
Sample Container	100 ± 6 mm diameter × 65 mm depth
Sample Container Material	1.6 mm (16-gauge) metal

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GST TIN No. : 24AABCE4018L1ZU
I.T. PAN No. : AABCE 4018L
IEC No. : 0813026598 Dt. 04/03/2014
CIN No. : U29199GJ2004PTC045078
TAN No. : AHME00572F



Parameter	Specification
Penetration Plunger Weight	47.5 g
Supplied Weight	50 g
Cone	Hollow 90° brass cone with highly polished stainless-steel tip
Electrical Supply	230 V, 50 Hz, Single Phase AC

Compliance with Standards

The Petroleum Jelly Penetrometer is designed for testing in accordance with ASTM D937, IS 1508, IS 4887, IP 179 and ISO 2137. The instrument is suitable for standardized cone penetration testing of Petroleum Jelly for determining its hardness, firmness and consistency.

Test Objective

The test is carried out to determine the hardness and firmness of Petroleum Jelly by measuring the depth to which the specified cone penetrates the sample under controlled conditions. The penetration value provides an indication of the consistency of the Petroleum Jelly and can be used for laboratory quality control, testing and material evaluation.

Construction and Design

The apparatus is constructed with a sturdy base and rigid stand on which the penetration arm moves. A dial gauge is mounted on the penetration arm, while a brass chromium-plated rod slides through the lower portion of the arm. The specified brass cone with plunger is fitted to this rod.

The instrument incorporates a rack, pinion and pointer assembly for fine adjustment of the penetration arm or penetration head. The base and sample platform are adjustable, allowing the test sample to be positioned correctly before conducting the test.

The penetration platform accommodates the sample container and can be adjusted horizontally for proper alignment. Leveling screws and a built-in spirit level help maintain correct instrument alignment during testing.

The compact design and rugged construction provide long service life and also facilitate transportation for field applications. Powder-coated body parts provide a durable and

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aesthetically finished appearance, while the sturdy base offers excellent support and stability during testing.

Penetration Measurement

The penetration mechanism is designed to allow the specified cone to drop vertically by at least 40 mm. The penetration depth is indicated on the dial gauge with measurement capability to the nearest 0.1 mm.

The dial gauge is graduated from 0–400 with 0.1 mm subdivisions, allowing the operator to observe and record the penetration value accurately.

Automatic Digital Timer Operation

The automatic model is equipped with a digital time controller incorporating an automatic magnetic clutch release mechanism. On pressing the operating button, the plunger rod with the cone is released freely for the specified 5-second penetration period.

After completion of the 5-second period, the mechanism automatically clamps the rod again. This arrangement provides controlled and consistent penetration timing without requiring a separate stopwatch for the automatic operation.

The digital time controller has a timing range of 0–99 minutes and a least count of 0.1 second.

Manual Operation

The manual model is hand operated and allows the operator to control the penetration mechanism manually. It is suitable for laboratories requiring a simple and reliable arrangement for Petroleum Jelly penetration testing.

An automatic digital timer version is also available where automated control of the penetration period is required.

Cone and Plunger Assembly

The instrument is supplied with a hollow 90° brass cone having a highly polished stainless-steel tip. The cone is designed to conform to the applicable dimensions and tolerances specified in IS 4887.

The cone has a detachable hardened steel/stainless-steel tip and a smooth polished outer surface. It is fitted to a rigid shaft having a suitable arrangement for engaging the cone.

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The total weight of the cone and its movable attachments is 150.0 ± 0.1 g. The supplied penetration plunger weighs 47.5 g and is used along with the specified 50 g weight.

Sample Container

The supplied cylindrical sample container has a flat bottom and is approximately 100 ± 6 mm in diameter and 65 mm in depth. It is constructed from 1.6 mm (16-gauge) metal and is provided with a well-fitting watertight cover.

The container provides a suitable arrangement for holding the Petroleum Jelly sample during the penetration test.

Accessories Supplied

The instrument is supplied complete with the required accessories for Petroleum Jelly penetration testing. The automatic model is supplied with a digital time controller having an automatic magnetic clutch release mechanism and a timing range of 0–99 minutes.

The standard accessories include a cylindrical sample container, 50 g weight, 47.5 g penetration plunger, hollow 90° brass cone with highly polished stainless-steel tip and magnetic coil for the automatic controller.

Essential Accessories Available at Extra Cost

A Constant Temperature Bath is available for applications requiring controlled sample temperature. The low-temperature refrigerated digital water bath is capable of regulating the temperature at $25 \pm 0.5^\circ\text{C}$ and is designed for conveniently bringing the sample container to the required test temperature. The bath is provided with a cover to maintain the temperature of the air above the sample at approximately 25°C .

A Timing Device / Stopwatch is available for manual testing and is capable of measuring a 5-second interval to within 0.2 second.

Spare flat-bottomed aluminium sample containers are available with approximately 100 ± 5 mm diameter and 60 mm height.

A Centering Device / Adjustable Platform is available for proper positioning of the sample container. Spare cones conforming to IS 4887 / IS 1580 and spare weights of 50 g or 100 g are also available.

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Applications

The Petroleum Jelly Penetrometer is suitable for determining the hardness, firmness and consistency of Petroleum Jelly through the cone penetration method. It is suitable for laboratory quality control, standardized testing, research and material evaluation applications where Petroleum Jelly penetration needs to be measured according to applicable ASTM, IS, IP and ISO standards.

Electrical Supply

The automatic digital timer model operates on 230 V, 50 Hz, Single Phase AC supply.

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