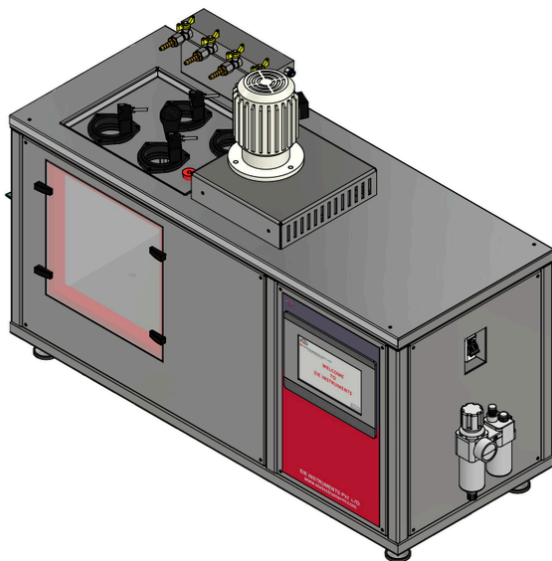




EIE INSTRUMENTS PVT. LTD.
(An ISO 9001:2015 Certified Company)

ABSOLUTE AND KINEMATIC VISCOSITY BATH-SEMI AUTOMATIC



As per IS: 1206 (Part II and III), Supplied complete with Viscosity bath with built in PLC, HMI and digital vacuum controller with Vacuum Pump - capable to maintain vacuum of 300 mm/Hg, with required accuracy, Indian Make Vacuum Manning Viscometer No.12 and 13, Reverse flow Viscometer No.6, Silicon oil, silicon tubes and calibration certificate for Viscosity bath, certificate of constant for Viscometers. Complete with instruction manual. Detailed Specification as mentioned in technical part mentioned below. Canon USA Make Glass U Tube Viscometer, Mercury Manometer etc. are available at extra cost

1. General Description

The equipment is a **fully digital, microprocessor-controlled viscosity measurement system** designed for precise determination of **absolute (dynamic) viscosity** and **kinematic viscosity**, including high-temperature kinematic viscosity measurement at **135 °C**.

The system will be supplied as a **complete, ready-to-operate package**, inclusive of all accessories, controls, and calibration requirements necessary for routine laboratory operation.

2. Applications

- Absolute (Dynamic) viscosity testing using vacuum viscometer tubes
- Kinematic viscosity testing at elevated temperatures (up to 135 °C)
- Suitable for petroleum products, bitumen, polymers, and related fluids

3. Temperature Control System

- Microprocessor-based **PID temperature controller**
- Digital set and readout of bath temperature
- Temperature resolution: $\leq 0.01\text{ }^{\circ}\text{C}$
- Temperature accuracy: $\pm 0.1\text{ }^{\circ}\text{C}$ or better
- Uniform temperature distribution throughout the bath

4. Temperature-Controlled Bath Construction

- Double-walled bath construction for thermal stability
- Inner chamber made of S.S.304
- Outer chamber made of G.I. - Powder coated
- Glasswool insulation
- Compatible with **silicone heat-transfer fluid**
- Efficient **mechanical stirring system** to ensure temperature homogeneity
- Transparent viewing window provided in the bath cover for observation of viscometer tubes
- Digital bath controller integrated into the main system

5. Vacuum System (for Absolute Viscosity Testing)

- Integrated vacuum generation system suitable for vacuum viscometer operation
- Oil-free vacuum pump with moisture trap
- Digital vacuum gauge/controller for accurate monitoring and regulation
- Stable and repeatable vacuum control during testing

6. Viscometer Tubes

- **Cannon-Manning type Indian Vacuum Viscometer Tubes** for absolute viscosity
- **Capillary Viscometer Tubes** (Cannon-Fenske / U-Tube type) for kinematic viscosity
- Tubes manufactured from **borosilicate glass**
- Each viscometer tube supplied with **individual calibration certificate of constant**

7. Timing and Data Acquisition

- Built-in **digital timer** with high resolution
- Manual start/stop control
- Automatic calculation of viscosity using viscometer constants
- Internal data storage with **date and time stamping**
- Facility for **data export** for reporting and record keeping

8. Measurement and Display

Real-time digital display of:

- Bath temperature (°C)
- Vacuum level (mm Hg), where applicable
- Flow time / timer readings
- Calculated viscosity values (Poise / cP / cSt as applicable)

9. Environmental & Electrical Requirements

- Power supply: **230 V $\pm$ 10%, 50 Hz, single phase AC**
- Designed for continuous operation in standard laboratory environments
- Built-in **over-current and surge protection**

11. Calibration & Compliance

- Calibration certificates traceable to **NABL / ISO 17025 accredited laboratories**
- Traceable calibration for temperature and vacuum measurement systems
- Viscometer tubes supplied with individual calibration certificates

12. Documentation

- Operating and maintenance manual
- Calibration certificates
- Electrical and system schematics

Complete Package as under :

Determination of Absolute and kinematic Viscosity with the following components:

1. Constant Temperature Bath - A suitable bath for immersion of vacuum capillary viscometer tubes with a digital temperature controller.
2. Digital Vacuum control System - The system will consist of vacuum pump, moisture trap, digital vacuum regulator, bleed valve, all interconnecting tubing / piping, and any other accessories as needed to complete the vacuum system.
3. Indian Make Cannon-Manning Vacuum Viscometer Tubes of Size 12 and 13 Supplied with manufacturers' calibration certificate, viscometer tube holder and silicone cork. This will cover the Viscosity range from 800-3200 poise.
4. Indian Make Reverse flow Viscometer of size 6 to cover Viscosity range of 250-400 cst (1 Nos.)

Optional Accessories At Extra Cost :

1. Original Imported CANON USA Make Vacuum Manning Viscometer, size No.12 :
2. Original Imported CANON USA Make Vacuum Manning Viscometer, size No.13 :
3. Original Imported CANON USA Make Reverse flow Viscometer : Size No.6 :
4. Original Imported CANON USA Make Reverse flow Viscometer : Size No.7 :
5. Mercury in Glass Thermometer for Bath - IP 93C and IP 35C
6. Bitumen Cleaning/Pyrolytic Oven for cleaning for used Viscometer Tubes
7. viscometer rack for safe keeping of U Tube Viscometer - can accommodate 6 tubes on a bench top
8. Certified reference materials (CRM)
9. Silicone bath oil suitable up to 150°C - 20 Liters

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