

# Viscometer

## VT-06

### Uni-Cylinder Rotational Viscometer Allows Easy Measurement of Fluid Viscosity



The VT-06 is designed for quality control applications in the manufacturing process of industrial products such as petrochemicals, paint, and adhesives, as well as foodstuffs. Viscosity measurements covering a wide range are possible, such as gear oil used in construction machinery. Measurement is performed by simply submerging a rotor in the fluid. The resistance to rotor movement caused by the viscosity (torque) is measured to obtain direct readings.

- Compact and light weight make the unit easily portable and allow operation with one hand
- Can be powered by alkaline batteries, nickel-hydrate rechargeable batteries, or AC adapter
- Direct indication of viscosity in decipascal-seconds (SI units)
- Dedicated stand for measurement available as option

#### **[Usage]**

1. Attach rotor to unit and hold unit in the hand or place on dedicated stand.  
(Unit should be approximately horizontal in either case.)
2. Insert rotor in sample fluid, turn power on, and select rotor number.
3. Press start button and read indicated viscosity.

\*The supplied extension rod can reach fluid that is further away. (Only for use with the No.1 and No.2 rotors.)

## Specifications

|                       |                                                                                                                                                                              |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement range     | No. 3 rotor: 0.3 to 13 dPa·s (with No. 3 cup)<br>No. 1 rotor: 3 to 150 dPa·s (with JIS 300 mL beaker*1)<br>No. 2 rotor: 100 to 4000 dPa·s (with JIS 300 mL beaker*1)         |
| Sample fluid capacity | No. 1 and No. 2 rotor (with JIS 300 mL beaker*1) approx. 300 mL<br>No. 3 rotor (with No. 3 cup) approx. 150 mL<br>Clearance between rotor end and cup bottom:<br>about 15 mm |
| Measurement accuracy  | ±10 % ±1 digit of indicated value, reproducibility ±5 %                                                                                                                      |
| Rotor speed           | 62.5 rpm                                                                                                                                                                     |
| Power supply          | IEC LR6 (size AA) alkaline batteries,<br>nickel-hydrate rechargeable batteries, AC adapter VA-05JA                                                                           |

### Options

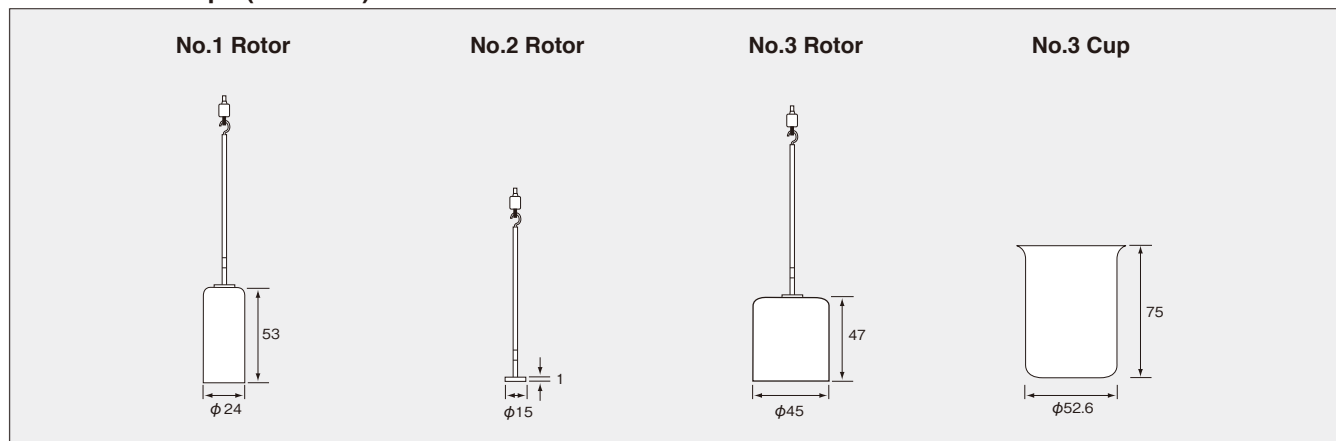
| Product name | Product number |
|--------------|----------------|
| Stand        | VA-04          |
| AC adapter   | VA-05JA        |

|                       |                                                                                               |        |   |
|-----------------------|-----------------------------------------------------------------------------------------------|--------|---|
| Dimensions and Weight | 175 (H) × 77 (W) × 40 (D) mm (without protruding parts),<br>Approx. 260 g (without batteries) |        |   |
| Supplied accessories  | No. 1 rotor (dia. 24 × 53 × 166 mm)                                                           | SUS304 | 1 |
|                       | No. 2 rotor (dia. 15 × 1 × 113 mm)                                                            | SUS304 | 1 |
|                       | No. 3 rotor (dia. 45 × 47 × 160 mm)                                                           | SUS304 | 1 |
|                       | No. 3 Cup (dia. 52.6 × 75 mm)                                                                 | SUS304 | 1 |
|                       | Extension rod (900 mm · 300×3)                                                                | SUS304 | 1 |
|                       | IEC LR6 (size AA) alkaline batteries                                                          |        | 4 |

Note : The Viscometer cannot measure accurately with anything other than supplied cups or the JIS 300 mL beaker.

\*1 JIS R 3503 : 1994, φ78×103 (H)

## Rotors and Cups (unit: mm)



## Sample amount for measurement

|                                      |               |
|--------------------------------------|---------------|
| No.3 Cup                             | approx.150 mL |
| Commercially available 300 mL beaker | approx.350 mL |

Note: For certain fluids, readings may differ slightly from other viscometers, depending on properties of target fluids, mechanical factors, as well as specific gravity, rotor speed, and other aspects.

## Viscometer measurement examples (for reference)

| Product type         | Viscosity  | Rotor |
|----------------------|------------|-------|
| Newtonian fluids     |            |       |
| Castor oil           | 6 dPa·s    | No.3  |
| Starch syrup         | 1000 dPa·s | No.2  |
| Non-Newtonian fluids |            |       |
| Condensed milk       | 16 dPa·s   | No.1  |
| Chocolate syrup      | 25 dPa·s   | No.1  |
| Tomato ketchup       | 43 dPa·s   | No.1  |
| Pure honey           | 76 dPa·s   | No.1  |
| Toothpaste           | 320 dPa·s  | No.2  |
| Starch paste         | 310 dPa·s  | No.2  |

\* Measurement temperature: 23 °C

## CGS Unit and SI Unit

$$1\text{cP} = \frac{1}{1,000} \text{Pa} \cdot \text{s} = 0.01 \text{ dPa} \cdot \text{s} \quad 1\text{P} = \frac{1}{10} \text{Pa} \cdot \text{s} = 1 \text{ dPa} \cdot \text{s}$$

P(poise), cP(centi poise), Pa·s(pascal-seconds), dPa·s(decipascal-seconds)