BGD 151
Rotational Viscometer

INSTRUCTION MANUAL

BIUGED LABORATORY INSTRUMENTS（GUANGZHOU）CO.,LTD

Add: NO.8, Fuhe Industrial Area, Zhongfu Rd., Zhongxin Town,Zengcheng City, Guangzhou City. 511375. China

Tel：（0086）20-32955999 **Fax**：（0086）20-32955818

E-mail：service@biuged.com **Website**：www.biuged.com

1.0 Introduction:

BGD 151 Rotary Viscometer is used in measuring viscosity friction and absolute viscosity of liquid. It has four rotors of NO.1-4 and can be chosen to use in accord with viscosity of the liquid to be determined rotation speed. It is widely used to determined viscosity of various liquid such as oil, paint, plastic, food medicine, adhesive, etc. It is widely applied in the field of petro chemistry , medicine, food, light industry, textile industry, scientific research, etc.

2.0 Main Technical Parameters:

- ◆ Range of Measurement of Viscosity: 10-100,000mpa.s(cP)
- ◆ Rotors to be used to measure: four rotors of NO.1-4
- ◆ Rotate speed: 6r/min¡,12r/min,30r/min,60r/min
- ◆ Meter-age error ±5%(Newtonian fluids)
- ◆ Electrical power: 220V/50Hz
- ◆ Weight: 7.9Kg
- ◆ Dimensions: 410×350×440mm(L×W×H)

3.0 Test Environment:

3.1 When installing the viscometer, locate the instrument on a sturdy bench apart from environment of strong draught、 strong magnetic field、 strong electrical field、 strong electromagnetic pulse disturbance.

3.2 Be sure that it is safer for an operator, attach the power cord to the appropriate power source (grounded outlet).

3.3 Testing Environment: 23℃±2℃, relative humidity should not be over 75%.

3.4 Sample temperature should be 23℃±2℃.

4.0 Operation and Usage:

4.1 Take the instrument out from the box, put it on the worktable.

4.2 Adjust the two bolts(in the bottom base of machine) till the machine is level(the bubble is in the middle of the circle)

4.3 Attach the power cord to the appropriate power source

4.4 Pour the sample into the container and stir it uniformly(the diameter of container is not less than 70mm).Control the temperature of the liquid accurately.

4.5 Install the protection shelf on the viscometer(revolve towards right is installing and towards left is unloading)

4.6 Install the selected spindle on the connecting screw(revolve towards left is tighten and towards right is loose)

4.7 Whirl the rise-fall knob and make the machine fall slowly. The spindle is immerged till its sign is level with the surface of tested liquid .

4.8 Turn on the viscometer power switch which is on the side of viscometer and the spindle begin to whirl in the liquid. After 20-30 seconds or the finger is steady ,read the value of finger.

Note: If the speed of whirl is too fast to read the value of finger, you can put down the controlling pole and turn off the power switch.

4.9 It is better that containing the value of finger is between 30 to 90.

5.0 Selection of Spindles and speed:

The principle of viscosity measurement not only takes into consideration of the viscometer rotation, but also depends on the correct spindle to be used. The table as below give the correct use of spindle to the viscosity measurement.

Rotation Speed →	60	30	12	6
Spindle Setting ↓	Viscosity Reading in mPa.s			
1	100	200	500	1,000
2	500	1,000	2,500	5,000
3	2,000	4,000	10,000	20,000
4	10,000	20,000	50,000	100,000

First, operator should estimate approximately the value of viscosity of their tested sample and select appropriate spindle and rotation speed.

The Viscosity Correction Factor is described as follow:

$$\eta = K.a$$

Where ***η= Viscosity in mPa.s***

K= Constant Factor

a= Reading at Viscometer

The K is decided by rotation speed and spindle jointly:

Rotation Speed →	60	30	12	6
Spindle Setting ↓	**K**			
1	1	2	5	10
2	5	10	25	50
3	20	40	100	200
4	100	200	500	1,000

6.0 Cautions:

6.1 The Machine must be used with prescriptive frequency and voltage. Otherwise the testing result will be incorrect.

6.2 Change the rotation speed when the machine is working.

6.3 If you have installed the spindle, do not turn on the machine when no any fluid .

6.4 Do not disassembly the machine ad arboretum and do not add any lube on the gear wheel of machine.

6.5 Install the yellow protecting sheath when conveying the machine.

6.6 Clean and dry the spindle carefully after every testing

7.0 Others

For more information regarding this product, spares, accessories etc. or if you would like a catalogue listing our full range of products, please contact your local agent or Biuged Instruments at the address on the following page.