

GOYOJO

VISCOSTMETER

Operation Manual

NDJ-8S

GOYOJO

Brand: GOYOJO

Product name: Viscostmeter

Model: NDJ-8S

Manufacturer: GOYOJO Industrial Technology(shenzhen) Co., Ltd

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Dear user,

Thank you very much for purchasing our viscometer. To enable you to use this product correctly, please read this manual carefully before use.

Thank you!

This operation manual is applicable to several types of viscometers, please read it according to the machine type or configuration you've purchased!

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I. Overview and Operating Principle

The NDJ Monochrome Screen Viscometer is a microcontroller-based intelligent device using a high-performance ARM processor, angle-free imported stepper motor, and actuator. The motor drives a rotor through a torque sensor at constant speed. When the rotor encounters viscous resistance in the liquid, the sensor converts this force into electrical signals, which are processed by dedicated software to display viscosity on the LCD screen. This instrument offers:

- ARM-powered precision control
- User-friendly interface with intuitive readings
- Automatic range calibration for high accuracy
- Wide applications in adhesives, latex, paints, cosmetics, and more

II. Main Features and Technical Indexes

1.Intuitive Interface: Displays viscosity, temperature (with probe), and % full scale.

2.Data Software (Optional): Real-time viscosity curve plotting for non-Newtonian fluids.

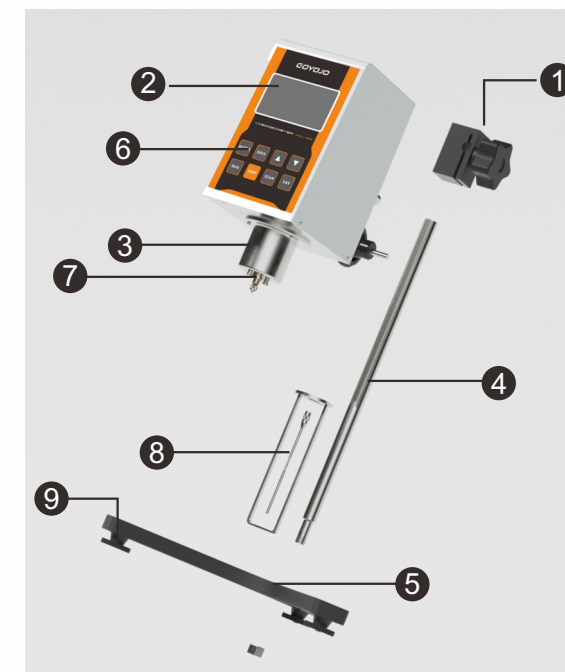
3.Accessories: Temperature probe, water bath, micro printer, and calibration fluids available.

Model	NDJ-8S
Measurement range	10 mPa. S - 2,000,000 mPa. S (1 mPa. S = 1 CP = 0.001 Pa. S)
Measurement accuracy	± 3%
Rotor specification	#1, #2, #3, #4 rotors (#0 rotor is an optional part)
Rotating speed	0.3, 0.6, 1.5, 3, 6, 12, 30, 60 RPM
Overall dimensions	95×130×155mm (the base excluded)
Net weight	2 KG (the base excluded)

III. Structure and Installation of the Instrument

1.The structure of the instrument is shown in the figure below

- 1 Level bubble
- 2 Liquid display screen
- 3 Outer cover
- 4 Rotor protection rack
- 5 Base for the main machine
- 6 Operating keyboard
- 7 Rotor connector
- 8 Rotor
- 9 Horizontal adjustment knob of the base of the main machine



#1 rotor



#2 rotor



#3 rotor



#41 rotor

2. Installation of the instrument

■ Remove the base, lifting column, viscometer main unit, power adapter, rotors, and other components from the packing container in sequence.

■ Insert the lifting column into the base's hole and secure it with nuts (Note: Position the lifting knob on the right side with the toothed bar facing you). Rotate the lifting knob to adjust the tension until the main unit stays stationary without sliding and the resistance feels smooth. If it's too loose or tight, adjust the front of the slider by turning the adjusting screw.

■ Insert the instrument's main unit handle connecting rod into the lifting slider's mounting hole. Straighten it and tighten the fixing knob. Then adjust the three base feet to center the horizontal bubble within the black circle on the instrument top.

■ Remove the shipping protective cap beneath the instrument casing. Verify the power supply meets operational requirements, switch it on, and the installation is complete.

IV (1). Installation and Use of Instrument

Prepare approximately 400 mL of the sample liquid and transfer it to a beaker or straight-sided cylindrical container with a minimum diameter of 60 mm and height of 120 mm. Preferably use a water-circulating container to precisely control sample temperature via a thermostatic water bath. Note: Viscosity is temperature-dependent—the higher the temperature, the lower the viscosity.

1. Panel Controls

The instrument features eight keys: "Rotor Selection," "Quick Setting," "▲" "▼" "Start" "Stop" "Auto Search" and "OK."

2. Power On & Parameter Setup

The instrument features eight keys: "Rotor Selection," "Quick Setting," "▲" "▼" "Start" "Stop" "Auto Search" and "OK."

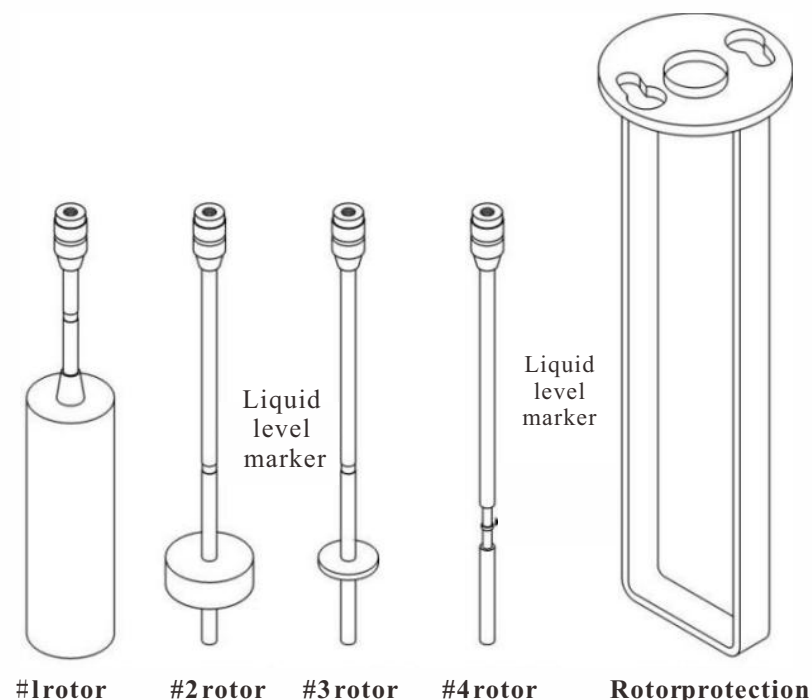
3. Screen Readouts

Third Line: Displays the maximum measurable viscosity for the current rotor/speed combination.

Fourth Line: Temperature reading (available only when a temperature probe is connected).

4. Rotor Positioning

After confirming parameters, attach the selected rotor to the instrument. Slowly adjust the lifting knob to lower the rotor into the sample until the rotor's liquid level mark (center groove) aligns with the liquid surface. See figure below for reference.



4. Horizontal Alignment

Adjust the horizontal bubble on the instrument top to ensure it remains centered, confirming the instrument operates level.

5. Measurement Procedure

Press "Start" to begin measurement and monitor the percentage (%) value on the screen.

Maintain readings between 10%–95% for accuracy, with 50% ideal. If outside this range:

Modify rotor/speed combination to extend/reduce measurement range.

Lower percentages indicate higher viscosity; increase percentages for lower viscosity.

6. Viscosity Estimation & Setup

When unknown, assume high viscosity:

- Start with small rotors (higher numbers) and slow speeds.
- Gradually increase rotor size (lower numbers) or speed for lower-viscosity samples.
- Start with small rotors (higher numbers) and slow speeds.
- Gradually increase rotor size (lower numbers) or speed for lower-viscosity samples.

7. Data Collection

Once readings stabilize, press "Stop" to record results.

Press "Stop" again to return to standby mode.

IV (II) Auto Search Function

The Auto Search function is a quick reference for customers who have no idea how to select "Rotor" or "Speed".

● Install the rotor corresponding to the one on the screen, and press "Speed Setting" and then press "Auto Search" and "Start" to enter the state of automatic testing.

● At this time, the customer just needs to wait for the prompt instead of operating the instrument. If the percentage (%) value is between 10% and 95%, the instrument will initially set the rotor and speed used at this time as appropriate. And press "Stop" twice continuously to exit from this function.

● According to the percentage values provided above, make a fine adjustment on the speed, and it will be the best state if the percentage (%) value is 50%. (Note: It doesn't have to be exactly 50%, and it's also OK if the value is between 30% and 60%)

IV (III)

Rotor Speed	#0	#1	#2	#3	#4
0.1 RPM		60000	300000	1200000	6000000
0.3 RPM		20000	100000	400000	2000000
0.6 RPM		10000	50000	200000	1000000
15 RPM		4000	20000	80000	400000
3 RPM		2000	10000	40000	200000
6 RPM		1000	5000	2000	100000
12 RPM		500	2500	10000	50000
30 RPM	20	200	1000	4000	20000
60 RPM	10	100	500	2000	10000

V. Precautions

1. As The instrument is strictly calibrated and tested before leaving the factory, it can work normally after startup. Please read this manual for the instrument carefully before operation, and the operation shall be in strict accordance with the requirements.
2. The power supply of the instrument must be measured within the specified range of voltage and frequency errors, otherwise the measurement accuracy will be affected.
3. Handle the rotor with care during the installation and removal of the rotor, lift the universal joint slightly upward for removal and installation. Do not exert too much force and do not make the rotor subject to horizontal force, so as to avoid bending the rotor. The end face and thread of the connection of the universal joint and rotor should be kept clean, otherwise it will affect the correct connection

of the rotor and the stability of rotation.

4. Do not start the instrument when there is no liquid after the rotor is installed, so as to avoid damage to the pivoting point and bearings.

5. Clean the rotor timely after use. Remove the rotor for cleaning, and it is strictly forbidden to clean the rotor on the instrument. And the rotor should be properly put in the storage box after cleaning.

6. Cover the instrument with the black protective cap when moving and transporting the instrument (Note: The protective cap must be removed before it is powered up).

7. Do not disassemble and adjust the parts and components of the instrument, and do not lubricate the instrument by yourself.

8. Most of turbid liquids, emulsions, high polymers and other high viscosity liquids are "non-Newtonian liquids", and their apparent viscosity often varies with shear speed, rotor and time. Therefore, when measured under different rotors, speed and time, the results may be inconsistent, which is a normal situation and does not mean that the instrument is inaccurate. Generally, non-Newtonian liquid should be measured with rotor, speed and measurement time.

9. Do not put the instrument sideways or laterally.

10. The more correct value can be obtained if the operator can comply with the following requirements for measurement

A Precisely control the temperature of the measured liquid

B Immerse the rotor in the measured liquid for a long enough period of time and maintain it at constant temperature, so that it will be consistent with the temperature of the measured liquid.

C Ensure the evenness of the measured liquid

D Try to put the rotor at the center of the container

E Usually, a large rotor and fast speed are selected for the liquid with low viscosity; and a small rotor and slow speed are selected for the liquid with high viscosity

F Ensure the cleanness of the rotor

G Prevent bubbles from adhering to the bottom of the rotor when it is immersed in the measured liquid

Packing List

I. Complete set of the instrument

1. NDJ series viscometer (main machine)	1 set
2. Lifting bar and base	1 pcs for each one
3. Protection rack	1 pcs
4. Rotors	1 set
5. Power adapter	1 pcs
6. Operation Manual	1
7. Qualification certificate	1
8. Warranty card	1

Appendix 1.

Installation and Use of #0 Rotor

I. #0 Rotor System(Additional separate purchase required, not included in the package)

The #0 rotor must be used as part of a dedicated kit consisting of the bracket, fixed test bucket, hook, and #0 rotor. This kit is exclusive to the #0 rotor and cannot be used with other rotors after testing.

II. Assembly Steps

Attach the #0 rotor bracket to the instrument's lower casing.

Secure the rotor head and #0 rotor to the universal joint.

III. Sample Preparation

Pour approximately 30 mL of sample fluid into the test bucket.

IV. Test Setup

Gently position the fluid-filled test bucket into the fixed bracket from

the bottom up.

Secure it with the test bucket set screws (Note: Ensure no contact between the test bucket and rotor during installation).

Level the instrument using the horizontal bubble before proceeding with measurements.

V. Reference Image

The complete assembly is illustrated in the figure below.



Guarantee

Users files:

Date.

User name			
Address			
Telephone		Zip	
Purchasing address			
Retail price		Odd Numbers	
Commodity name and specification		Model No.	
Dealer Signature		User Signature	

Guarantee Item

1. 3months upon date of purchase,if there is function problem, we should offer the same item subject to goods and packing maintain perfect
2. 1year upon date of purchase we will guarantee to keep the goods in repair,(excluding fittings)
3. Guarantee service is subject to normally using.
4. All of damage by man-made (tear open the housing, tear off the sticker,unnormally using),or losing this card,we will not guarantee