

# SV-A/SV-H/SV Series Additional Information

## Information added

- Displayed values and units of measure
- Changes in the specifications

### 1. Displayed values and units of measure

The SV-A, SV-H and SV series Sine-wave Vibro Viscometers, due to measuring principles, detect the product of viscosity and density and display that.

“SV displayed value” = Viscosity x Density

While the displayed value has a unit of “mPa·s” in the unit display area, the measurement result is actually the product of viscosity and density, and the corresponding unit is “mPa·s x g/cm<sup>3</sup>”.

To obtain the absolute viscosity value, divide the measurement result by the sample density [g/cm<sup>3</sup>].

e.g. SV displayed value when a standard viscosity fluid is used

Standard viscosity fluid	Temperature [°C]	Kinetic viscosity [mm <sup>2</sup> /s]	Viscosity [mPa·s]	Density [g/cm <sup>3</sup> ]	SV displayed value (viscosity x density) [mPa·s x g/cm <sup>3</sup> ]
JS2.5	20	2.504	1.965	0.7847	1.542
JS1000	20	1004	881.1	0.8776	773

### 2. Changes in the specifications

The changes in the specifications of the SV-A, SV-H and SV series viscometers are underlined as shown below.

#### SV-A/SV-H series specifications

(Part of “16. SPECIFICATIONS” on page 87 of the SV-A/SV-H series instruction manual)

		SV-1A/SV-1H	SV-10A/SV-10H	SV-100A/SV-100H
Measurement method	Sine-wave Vibro Viscometer using the Tuning-fork Vibration method Vibration frequency 30 Hz			
<u>Display range</u> See remarks below.	0.3 to 1000 mPa·s		0.3 to 10000 mPa·s	1 to 100 Pa·s (1000 to 100000 mPa·s)
Measurement accuracy *1	Repeatability *2	1% (Standard deviation)		
	Accuracy *3	<u>±5% or ±0.6 mPa·s, whichever is greater</u> (1 to 100 mPa·s)	±3% (1 to 1000 mPa·s)	±5% (1 to 10 Pa·s) (1000 to 100000 mPa·s)

Note: The values for the SV-H series are when the AX-SV-51 (stand set, sold separately) is used.

Please note that bubbles accumulated on the sensor plates will affect the measurement accuracy.

\*1 For the SV-1A/1H when a sample cup of 2 mL is used. For the SV-10A/10H and SV-100A/100H when a sample cup of 45 mL is used.

\*2 Repeated measurement with the sensor plates remaining in the sample

\*3 The value after calibration using a standard viscosity fluid at a temperature range between 20°C and 30°C with no condensation.

In measurement that takes a long time, perform calibration using a standard viscosity fluid or purified water periodically as necessary.

Remarks: The SV-A and SV-H series viscometers display the product of viscosity and density as the measurement result due to measuring principles and the corresponding unit is “mPa·s x g/cm<sup>3</sup>”.  
To obtain the absolute viscosity value, divide the displayed value by the sample density [g/cm<sup>3</sup>].

□ **SV series specifications**

(Part of "15. SPECIFICATIONS" on page 60 of the SV series instruction manual)

		SV-10	SV-100
Measurement method		Sine-wave Vibro Viscometer using the Tuning-fork Vibration method Vibration frequency 30 Hz	
Display range See remarks below.		0.3 to 10000 mPa·s	1 to 100 Pa·s (1000 to 100000 mPa·s)
Measurement accuracy *1	Repeatability *2	1% (Standard deviation)	
	Accuracy *3	±3% (1 to 1000 mPa·s)	±5% (1 to 10 Pa·s) (1000 to 10000 mPa·s)

\*1 When a sample cup of 45 mL is used.

\*2 Repeated measurement with the sensor plates remaining in the sample

\*3 The value after calibration using a standard viscosity fluid at a temperature range between 20°C and 30°C with no condensation.

In measurement that takes a long time, perform calibration using a standard viscosity fluid or purified water periodically as necessary.

Remarks: The SV series viscometers display the product of viscosity and density as the measurement result due to measuring principles and the corresponding unit is "mPa·s x g/cm<sup>3</sup>".

To obtain the absolute viscosity value, divide the displayed value by the sample density [g/cm<sup>3</sup>].

Note: Please note that bubbles accumulated on the sensor plates will affect the measurement accuracy.