

Optional Accessories

Part No.	Part name
< Container >	
RE-79100	15mL Beaker
RE-79101	100mL Beaker
RE-78141	Cup Adapter (with 100pcs cups) * 50pcs of paper cups and 50pcs of plastic cups are included.
RE-79102	Paper Cup (90mL, 100pcs)
RE-79103	Plastic Cup (90mL, 100pcs)
< Ultra Low Adapter (ULA)>	
RE-77120	Ultra Low Adapter (ULA) - Sample Adapter for Low Viscosity Sample <ul style="list-style-type: none"> • Sample cylinder • Hook • UL spindle • Extension (threaded tip)
	<ul style="list-style-type: none"> • Cylinder holder • Hook holder • UL stand
RE-77107	UL spindle (with hook and hook holder)
RE-77121	Sample cylinder (with cap and o-ring)
RE-77117	UL spindle 3pcs (with hook and hook holder)
< Temperature sensor >	
RE-75540	Temperature sensor

Part No.	Part name
< Spindle >	
RE-77104	A1 Spindle
RE-77105	A2 Spindle
RE-77106	A3 Spindle
RE-77114	A1 Spindle 5pcs
RE-77115	A2 Spindle 5pcs
RE-77116	A3 Spindle 5pcs
RE-77100	Set of spindles (A1,A2,A3)
< Viscosity Standard Liquid >	
RE-89030	Viscosity Standard Liquid 2 100mL
RE-89031	Viscosity Standard Liquid 5 100mL
RE-89036	Viscosity Standard Liquid 200 100mL
RE-89037	Viscosity Standard Liquid 500 100mL
RE-89038	Viscosity Standard Liquid 1000 100mL
RE-89039	Viscosity Standard Liquid 2000 100mL

* Standard liquid with JCSS calibration certificates are available (JS2.5 to JS160000).
Contact ATAGO for further details.

Specifications

Measurement range 1 to 350,000,000mPa·s, 1 to 350,000,000cP

Model	VISCO™	VISCO™-895
Cat.No.	6800	6820
Materials	Housing: SUS, Aluminum · Legs, and stand + screw: SUS	Housing, legs, and stand + screw: Aluminum
Dimensions and Weight	12x12x20cm, 1.2kg (main unit only), Stand+screw : 0.5kg Small volume beaker attachment: 0.1kg	12x12x20cm, 895g (main unit only), Stand+screw : 275g Small volume beaker attachment: 0.1kg

Common Specifications

Measurement Scales	Viscosity · Temperature · Torque%
Measurement Range	Viscosity A1 50 to 200,000mPa·s, 50 to 200,000cP A2 100 to 600,000mPa·s, 100 to 600,000cP A3 500 to 2,000,000mPa·s, 500 to 2,000,000cP (1mPa·s=1cP)
Torque	0.0 to 100.0% (recommended torque : 10.0 to 100.0%)
Temperature	0.0 to 100.0°C / 32.0 to 212.0°F
Resolution	Viscosity lower than 100mPa·s : 0.01mPa·s 100mPa·s or higher lower than 10,000mPa·s : 0.1mPa·s 10,000mPa·s or higher : 1mPa·s
Torque	Lower than 10% : 0.01% 10% or higher : 0.1%
Temperature	0.1°C / 0.1°F
Measurement Accuracy	Viscosity ±1% (Full scale) Temperature ±0.2°C / ±0.4°F
Speed	0.5 to 250 rpm, Number of speeds : 20
Sample Temperature Range	10.0 to 40.0°C / 50.0 to 104.0°F
Ambient Temperature	10 to 40°C
Computer Output	Output : USB - PC
Battery Life (Approx.)	Approx. 7 hours (continuous operation at 60rpm)
Power Supply	DC6V (AA alkaline batteries 1.5V x 4) AC adapter : AC100 to 240V, 50/60Hz

The body, legs and stage of the VISCO™-895 are made from light-weight aluminum.



Contents

· Main unit	1
· Stand:	1
· S Beaker (15mL)	1
· L Beaker (100mL)	1
· AC adapter	1
· Spindles (A1, A2 and A3)	one each
· Temperature sensor	1
· Small volume beaker attachment	1
· USB Mini-B cable (1m)	1
· 1.5V AA alkaline batteries	4
· Instruction manual	1
· Inspection certificate	1
· Spindle stand	1
· Protective cap	1
· Carrying case	1

All ATAGO products are designed and manufactured in Japan.

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HACCP GMP GLP

ATAGO products comply with HACCP, GMP, and GLP system standards.

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VISCO™



ATAGO®

ATAGO: Creating the Perfect Fusion of Innovation, Technology and Simplicity

ONE TOUCH™, ONE HAND™ and ONE BUTTON™.

Presenting the VISCO, a brand-new way of measuring viscosity with 3 simple **"ONE's."**

ONE BUTTON™

Operation requires only one dial button. All operations can be performed with the simple act of "sliding" or "pushing" the dial button. No more accidental operations due to pushing the wrong button.

Measurement

ONE TOUCH™

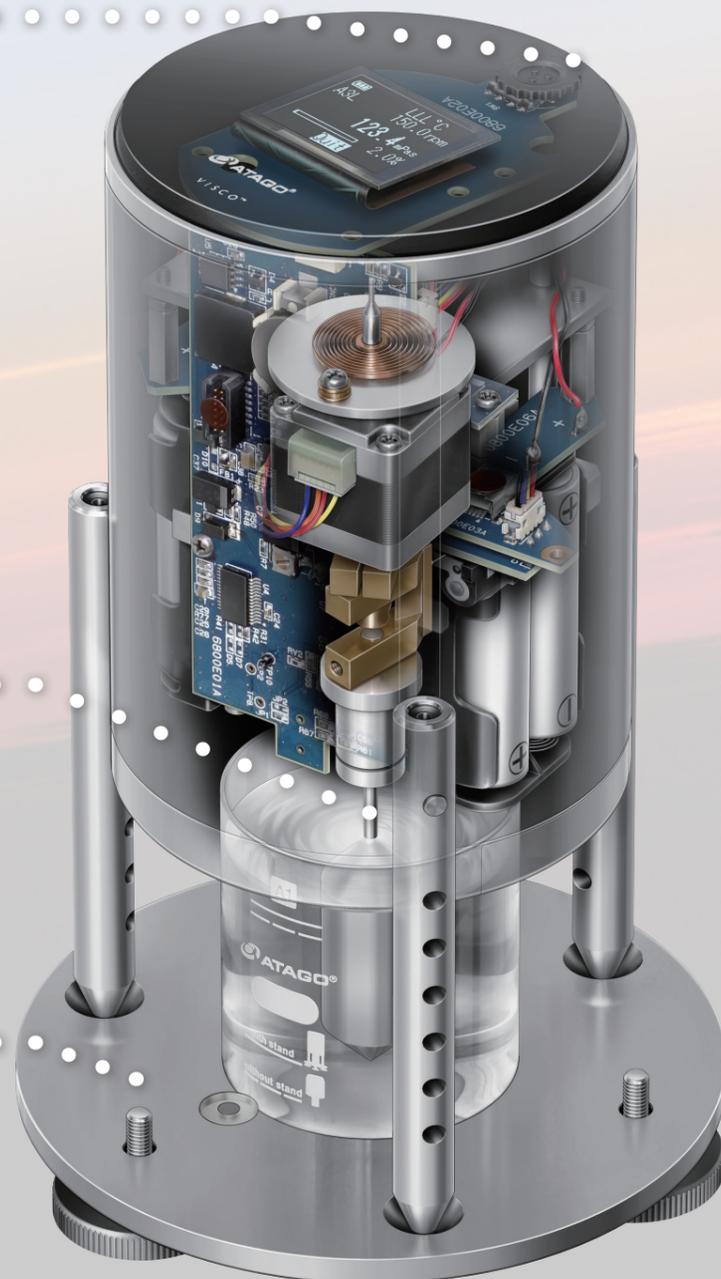
VISCO is very easy to set-up. The spindle can be attached with just "one touch" — simply insert the spindle in the instrument. Absolutely no complicated set-up required.

Set-up

ONE HAND™

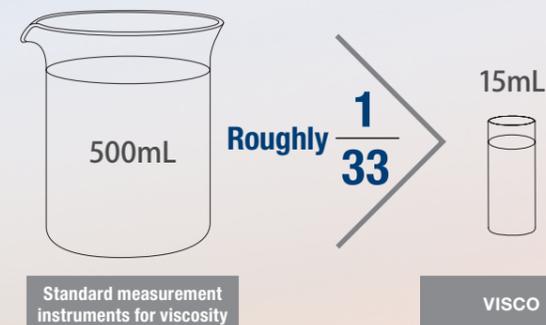
Measurement preparation can easily be done with just one hand. Place the beaker underneath the pre-set area and place the instrument on the stand. No troublesome height adjustment necessary.

Preparation



Uses Only 1/33 of the Standard Sample Amount

Standard measurement instruments for viscosity require a large amount of sample (500mL). VISCO is capable of taking measurements with just 15mL of sample. This is roughly 1/33 of the standard sample amount. Measurement can be done with only a small amount of sample, resulting in less waste of valuable sample and a significant reduction in cost.



Easy to Read, Fully Digital Display

A fully digital display allows for anyone to quickly and easily read results. The simple display is easily and readily understood.



Never Take Any Glassware (on site) Ever Again

Measurement can also be taken using paper cups other than those that come with the instrument. A disposable container requires no washing after each measurements. This makes it possible to safely measure even on site where no glassware is allowed.

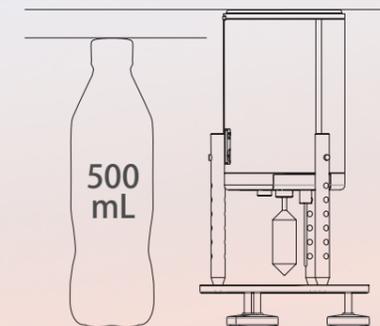
- VISCO Package: Package A [P.4](#)
- Disposable container can be purchased independently. [P.8](#)



Compact and Easily Carried with One Hand

VISCO's sleek dimensions and weight (main unit: 12x12x20cm, 1.2kg) make it compact and easily carried with one hand.

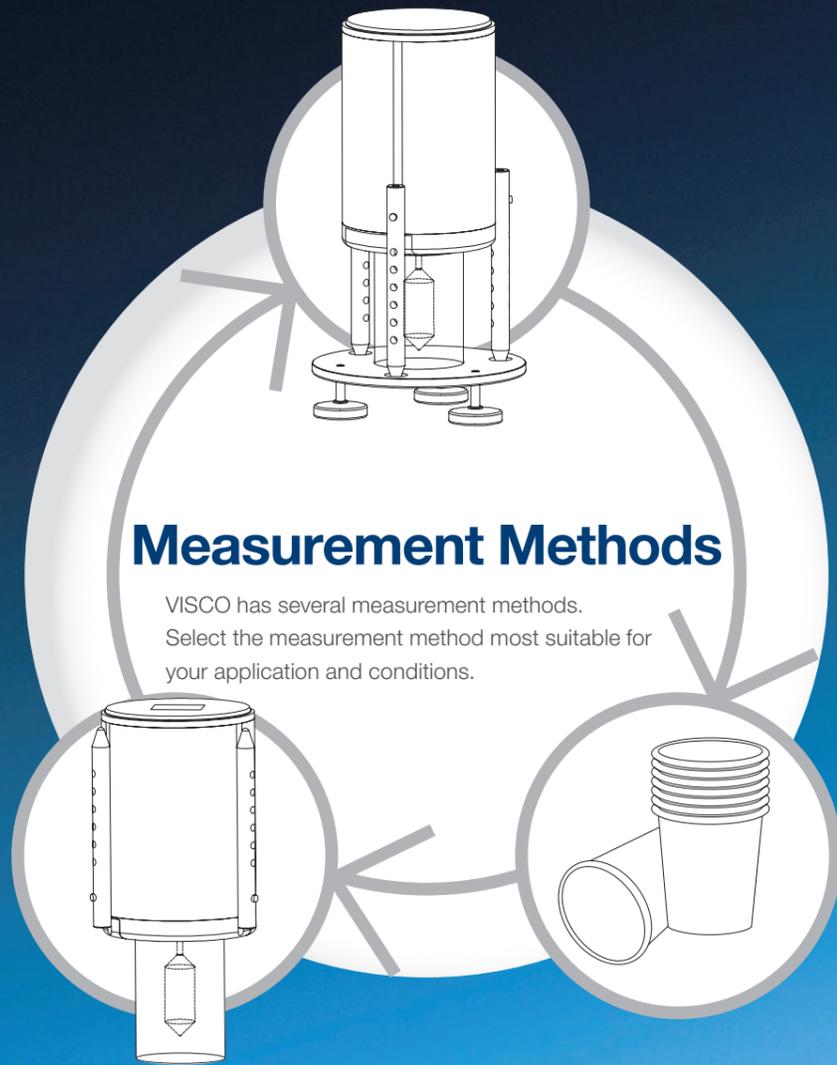
The instrument's legs can be folded up, making it further compact and allowing for even greater storage capabilities.



Quick Measurements Anywhere

Not only does VISCO run on AC power, but it can also operate on battery power. This allows for measurements to be taken anywhere, even in places lacking a power source. The instrument can also be placed directly on the beaker, making it possible for quick and simple measurements to be taken. No need to establish a specific location for measurement — with VISCO, you can take measurements anytime, anywhere.

Using the included stand and beaker



Measurement Methods

VISCO has several measurement methods. Select the measurement method most suitable for your application and conditions.

Placing the instrument directly on the included beaker

Using a disposable container

VISCO Package

Package A

Using disposable containers eliminates the hassle of cleaning after measurement. Package A, which includes a specialized adapter for use with disposable containers such as paper cups, is available at ATAGO.

- **Cat.No.6810**
 - VISCO™ (main unit)
 - Cup Adapter (with 100pcs cups*): RE-78141
- **Cat.No.6830**
 - VISCO™-895 (main unit)
 - Cup Adapter (with 100pcs cups*): RE-78141

* 50pcs of paper cups and 50pcs of plastic cups are included.



Cup adapter setup example
Cup adapter

Package B

Measurement of low viscosity (1 to 2,000 mPa·s) is possible. A package that comes with Ultra Low Adapter (ULA) for measuring low viscosity sample and VISCO (main unit) is available.

- **Cat.No.6811**
 - VISCO™ (main unit)
 - Ultra Low Adapter (ULA): RE-77120
- **Cat.No.6831**
 - VISCO™-895 (main unit)
 - Ultra Low Adapter (ULA): RE-77120



VISCO APPLICATION

Food and Beverage

Beverages (e.g. juice, etc.)



Viscosity is critical parameter in beverage manufacturing, from the production phase all the way until the product reaches consumers.

Milk



In regards to milk, aside from whole milk (3.25%), there is reduced fat milk (2%), low-fat milk (1%) and nonfat (skim) milk. In general, nonfat milk has the lowest viscosity.

Tomato Juice / Purée



Tomato juice or purée must always flow through the production line under a constant, homogenized state. Viscosity management is indispensable to this process.

Sauce (Worcestershire sauce, thicker Worcester sauce, pork cutlet sauce, etc.)



There are many kinds of sauce. These include (in ascending order of viscosity): Worcestershire sauce, thicker Worcester sauce and pork cutlet sauce. In Japan, there are approximate levels or grades for viscosity determined by JAS.

Ketchup



Ketchup, a pseudoplastic fluid, is characterized by its propensity to remain in its bottle even when turned upside-down. Applying a bit of force (squeezing) to the bottle causes the ketchup to flow out. It is also known for reacting differently at varying temperatures.

Mayonnaise



Mayonnaise also remains in its bottle, even when turned sideways or upside-down and maintains high viscosity. The greater the force applied, the easier it will flow out and the viscosity will decrease.

Olive Oil



There are many vegetable based oils that are Newtonian fluids (a fluid that does not change viscosity even when force is applied). Olive oil is a Newtonian fluid.

Honey



Honey is a Newtonian fluid. Its viscosity is not affected by force and speed. Only temperature can cause a change in viscosity.

Jam



Imagine spreading jam on a piece of toast. The jam easily glides across the toast. Viscosity is a crucial factor in making jam spreadable. Managing the viscosity can be quite difficult, as jam contains solids.

Yogurt



Numerous factors throughout the manufacturing process, such as how much fat is left in the yogurt, pasteurization and pH management affect the final product and texture (viscosity).

Butter / Margarine



Butter is a Bingham plastic (a type of non-Newtonian fluid). It can not flow unless some degree of force is applied, but applying force past a certain degree cause it to become more malleable in proportion to the force.

Japanese Curry (curry roux)



Thickened curry (roux) is quite mainstream in Japan. Thickened curry is made by applying heat to flour, which changes it into a more paste-like consistency, resulting in an increase in viscosity. Even in the final processing stage of being sealed into a retort pouch, the curry roux must maintain the same viscosity to allow the same amount to extrude every time the same amount of force is applied.

Gelatin / Agar



Viscosity measurements can be used to check and manage the gelling process of gelatin or agar. However, if the gelatin or agar completely solidifies during viscosity measurement, a spindle-shaped gap will form, preventing measurements from being taken.

Household Essentials

Toothpaste



Toothpaste with a paste-like consistency is a Bingham plastic. It will not flow out unless the tube is squeezed. It is important for toothpaste to be at optimal viscosity. After applying the appropriate amount onto a toothbrush, toothpaste at just the right viscosity will break cleanly from the tube and retain its shape without flattening.

