



# Relative Viscometer

[Shown below with Full Automation Package]



*HMJ's Relative Viscometer  
mates seamlessly with  
an autosampler to create  
a complete dilute  
solution viscosity system.*

The Relative Viscometer was specifically developed to measure the viscosities of dilute polymer solutions. It provides faster analysis, greater precision, and less solvent exposure compared to conventional glass tubes. The Relative Viscometer is ASTM-approved, and its closed-loop system provides greater operator safety.

Solution viscosities are determined by the viscosity of the sample relative to the reference solvent. The Relative Viscometer measures the solvent and sample viscosities simultaneously, avoiding errors due to temperature fluctuation and solvent variations.

It's the only solution viscometer that can provide **Relative, Intrinsic, Inherent, Specific, and Absolute Viscosity**, as well as **Molecular Weight** in a single experiment.

Typical applications include, but are not limited to:

- Polyethylene Terephthalate (PET)
- Polyvinyl Chloride (PVC)
- Polyolefins (PE, PP)
- Polyamides (Nylon)
- Synthetic Rubber (EPDM)
- Hyaluronic Acid (HA)

Example applications are provided in the Learning section of our website, [www.hmjassociates.com](http://www.hmjassociates.com). Operated using HMJ's ARV™ software, the Relative Viscometer can be configured with various levels of automation. See the other side for package details.



### Dimensions

Width: 17.5 in. (42 cm)  
 Height: 9.5 in. (23 cm)  
 Depth: 17.5 in. (42 cm)

### Weight

40 lbs. (18 kg)

### Power

120 V, 50-60 Hz, 5 A  
 or  
 230 V, 50-60 Hz, 3 A

### Output Signals

0-10 V

## Technical Specifications

### Measuring Principle

Dual capillary bridge

### Measuring Ranges

0–20 cp (mPa s) or  
 1–2 Relative viscosity

### Sensitivity

$1.0 \times 10^{-4}$  Specific viscosity

### Precision of IV Measurement

$\pm 1.0\%$  Rel. std deviation

### Capillary Dimensions

0.02 in. ID

### Typical Flow Rate

1–3 mL/min.

### Typical Analysis Time

2–4 min.

### Shear Rate

1000 sec<sup>-1</sup>

### Temperature Range

15–150°C

### Typical Sample Volume

30–35 mL for two injections

## Product Packages

The Relative Viscometer is available for order in four configurations:

	Manual	Auto-sampler	Semi-Automation	Full Automation
Y501 Viscometer	X	X	X	X
Installation & Training	X	X	X	X
Data System	X	X	X	X
Degasser	X	X	X	X
Single Syringe Pump	X	X		
Dual Syringe Pump			X	X
Vortex Autosampler				X
Autosampler		X	X	
Analytical Balance			X	X

## DSV Service and Support

HMJ Associates supports the DSV customer with the following:

- Instrument maintenance, repair, and spare parts
- Routine and consultative sample analyses for polymers
- Method development



## Automation Summary

The following table summarizes the level of automation that each DSV package provides:

	Manual	Auto-sampler	Semi-Automation	Full Automation
Assistance with weighing sample			X	X
Dispensing Solvent			X	X
Heat & Stir the Sample				X
Move Between Vials		X	X	X
Sample Injection	X	X	X	X
Sample Analysis	X	X	X	X
Data Recording	X	X	X	X