

# High Speed Viscometer

## Model 802



*“A fast, cost-effective ASTM D445 based instrument for the measurement of kinematic viscosity of used oil and other fluids.”*

The High Speed Viscometer (HSV) was designed by people in the used oil analysis business for people in the used oil analysis business. It provides the used oil analysis laboratory with a cost effective, fast and accurate automatic viscosity measurement. By combining established principles of viscosity measurement, the HSV provides automatic measurements at 40°C and 100°C to yield the true viscosity index; a valuable tool for the determination of lubricant condition.

### Benefits

- **Capable** - Measures kinematic viscosity at two temperatures and computes actual viscosity index.
- **Easy To Use** - Measurement and cleaning are completely automatic. All the operator has to do is introduce the sample using a spring loaded syringe.
- **High Throughput** - Measures 48 samples per hour at two temperatures, or 96 samples per hour at one temperature. Multiple instruments can easily be connected for even higher throughput requirements.
- **Accurate** - Patented tube design and built-in diagnostics check every sample for accuracy. The right results every time.
- **Wide Range** - Each wide range capillary tube combined with specialized software allow one size to be used for almost any lubricating fluid. No viscosity expectations or tube selection required.

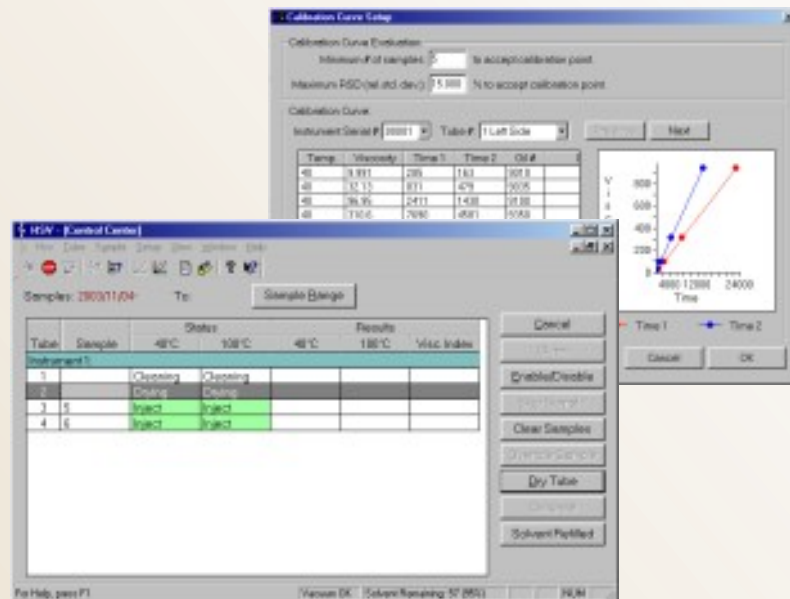
The HSV is ideal for used oil analysis laboratories needing to test a wide range of lubricant viscosities. Each HSV contains 4 pairs of capillary tubes. Each pair makes a low temperature and a high temperature measurement. There is no need to change capillary tubes or select the correct tube to use, and typically 48 samples can be analyzed per hour at two temperatures. The throughput can be doubled to 96 samples per hour for applications where measurements at only one temperature are necessary. This requires four additional capillary tubes and setting the baths to the same temperature. The HSV is also efficient and requires less than 1 milliliter of fluid per capillary tube.

The HSV is accurate and utilizes a patented tube design and built-in diagnostics to monitor all measurement functions. Two measurements are made on each sample at both temperatures under different shear rates. The measurements must closely agree, otherwise the results are rejected as suspect. Incorrect results due to particles, dirty capillary tubes, bubbles, water, immiscible substances, and dissolved gases are thus not reported. Typical problems such as cleaning and plugged capillary tubes are also detected.

The High Speed Viscometer, Model HSV 802 provides the used oil analysis provider with accurate trouble-free operation and the throughput required for an efficient and quality conscious laboratory.

# Features

- Viscosity measurement at two temperatures and calculation of true viscosity index.
- Easy to use Windows software with flexible reporting options.
- Requires less than 1ml of sample per measurement.
- Workplace friendly, solvent vapors do not escape.
- Large access panels for routine cleaning and maintenance.
- Digital temperature controls for each insulated bath.
- Thermometer access port for temperature verification.
- Active drip control prevents solvent from automatic cleaning system from dripping and effecting measurements.
- Positive vent valve cleaning ensures air can easily escape from tube during measurements.
- Independent safety controls cut heating power if an over temperature event occurs.
- Available solvent delivery and vacuum systems simplify installation.



## High Speed Viscometer Specifications

### Viscosity Tubes per Unit:

Temperature #1 (typically 40°C): 4

Temperature #2 (typically 100°C): 4

### Sample Throughput:

2 Temperature Operation: 40 - 50 / hr

1 Temperature Operation: 80 - 100 / hr

### Temperature Range:

Min: Ambient + 10°C

Max: 105°C

### Sample Size (per temperature):

0.8ml

### Usable Viscosity Range:

40°C: 10 - 2000 cSt

100°C: 2.5 - 100 cSt

### Repeatability\*:

less than 0.9% 19 times out of 20

### Solvent System Requirements:

Toluene: approx. 4 liters per 100 samples

Inert Gas: 15 psi regulated

### Cleaning Cycle:

Each Sample: Software controlled automatic

Manual, as required: Chromic acid glassware cleaning solution

### Viscosity Bath Fluid:

Type: Silicone SIL50

Quantity: 10 liters per bath

### Power Requirement:

Voltage/Freq: 120@60Hz or 240@50-60Hz

Max Draw: 1500 Watts

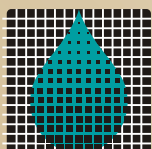
### Dimensions, approximate:

25" x 17" x 25"  
(63 x 43 x 63 cm)

### Shipping Weight, approximate:

100 lbs (46kg)

\*As defined in ASTM D445



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This instrument is covered by US Patent 5,756,883.