

The Ravenfield® HTHS BS/C+ Viscometer is a compact, high precision, tapered plug viscometer that measures the high temperature, high shear viscosity of engine lubricants and other oils according to ASTM D4741, CEC L-36-A-90 and IP 370 as specified by SAE J300 and ACEA. The BS/C+ HTHS Tapered Plug Viscometer also correlates to ASTM D4683 with no bias and is capable of testing across a wide range of temperatures and shear rates.

Common Applications

- Engine lubricants
- Pre-filtered used oils

Ravenfield® by CANNON BS/C+ HTHS Tapered Plug Viscometer

For High Temperature, High Shear Viscosity of Engine Lubricants
ASTM D4741, CEC L-36-A-90 and IP 370

Product Features & Benefits

Simple, automated operation and data analysis

- Complies with SAE J300 and ACEA specifications. Meets ASTM D4741 and correlates to ASTM D4683 with no bias
- Computer controlled user interface guides the operator through calibration and testing
- Onboard viscosity calculator measures flow curve and computes results automatically
- Optional Model DR Autosampler (with built in computer control) allows unattended testing of up to 22 samples
- Simple sample introduction

Fast and precise measurements

- Total test time <5 minutes per sample
- Sample processing of >12 tests/hour
- Repeatability within 1-2%

Versatile test options

- Temperature range: 40 °C to 180 °C (adjustable in 0.1 °C increments)
- Variable speed motor permits simple shear rate adjustment across a wide range (100,000 sec⁻¹ to 2,000,000 sec⁻¹)
- Customizable gap control

Compact, convenient design

- No external utilities or high pressure gases are required
- Instrument provides internal storage of measurement results and offers optional LIMS connectivity
- Model DR Autosampler features a built in printer for hardcopy documentation of test results



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Ravenfield® BS/C+ HTHS Viscometer

Ordering Information

The Ravenfield® BS/C+ HTHS Viscometer comes with an ultrasonic bath, vacuum pump assembly with constant-level pipe, platinum resistance thermometer (PRT), temperature controlled hot oil bath, 1 gallon of bath oil, one set of calibration oils, a one year warranty and professional installation/training. Additional charges may apply for installation outside the domestic U.S.

Description	Part #
100/115 VAC, 50/60 Hz	9728-C51
230 VAC, 50/60 Hz	9728-C52

Options

Description	Part #
Model DR Autosampler*	
100/115 VAC, 50/60 Hz	9728-C55
230 VAC, 50/60 Hz	9728-C54

* Field-installable

Accessories & Consumables

Description	Part #
Ultrasonic bath (replacement)	
110/115 VAC, 50/60 Hz	80.5020
220/230 VAC, 50/60 Hz	80.5457
Rotor/stator replacement (complete)	80.5002
20 cSt bath oil (3.8 L/1 gal)	9726-L38
Plastic vials (3 oz. for use with Autosampler)	80.5633
Ravenfield RL102 Calibration Oil (1L)	9727-R10.032
Ravenfield RL103 Calibration Oil (1L)	9727-R15.032
Ravenfield RL104 Calibration Oil (1L)	9727-R20.032
Ravenfield RL105 Calibration Oil (1L)	9727-R25.032
Ravenfield RL106 Calibration Oil (1L)	9727-R30.032
Ravenfield RL107 Calibration Oil (1L)	9727-R35.032
Ravenfield RL232 Calibration Oil (1L)	9727-R62.032
Service kit	80.5675
Printer paper for Model DR autosampler	80.5634

CANNON Instrument Company® provides a variety of physical property testing equipment and consumables (vials, bath fluids, and reference materials) for your testing needs. To learn more, contact sales@cannoninstrument.com.

Product Specifications

Dimensions (W x D x H)	Without Autosampler: 62.2 cm x 38.1 cm x 64.8 cm (24.5 in x 15 in x 25.5 in) With DR Autosampler: 83.3 cm x 41.9 cm x 64.8 cm (32.8 in x 16.5 in x 25.5 in)
Weight	Without Autosampler: 30.0 kg (66 lb) With DR Autosampler: 50.0 kg (110 lb)
Shipping dimensions (W x D x H)	Without Autosampler: 81.0 cm x 92.0 cm x 64.8 cm (31.9 in x 36.2 in x 25.5 in) With DR Autosampler: 122.0 cm x 92.0 cm x 64.8 cm (48.0 in x 36.2 in x 25.5 in)
Shipping weight (with all items)	Without Autosampler: 50.0 kg (110.0 lb) With DR Autosampler: 70.0 kg (154.0 lb)
Max throughput	>12 tests per hour
Automated sample capacity	1 (without Autosampler); 22 (with Model DR Autosampler)
Viscosity range	Up to 30 mPa·s (cP)* *depending on temperature and shear rate
Temperature range & accuracy	40 °C to 180 °C Accuracy at 150 °C, ± 0.02 °C for viscosity range 1.5 mPa·s (cP) to 5.9 mPa·s (cP) at 10 ⁶ sec ⁻¹ shear rate Accuracy at 100 °C, ± 0.02 °C for viscosity range 4.2 mPa·s (cP) to 18.9 mPa·s (cP) at 10 ⁶ sec ⁻¹ shear rate
Shear rate range	100,000 sec ⁻¹ to 2,000,000 sec ⁻¹ depending on sample viscosity and temperature
Rotor height adjustment	0.002 mm. Position resolution ± 0.01 mm
Minimum sample/solvent volume	10 mL sample/20 mL solvent per test
Operating conditions	10% to 75% relative humidity, non-condensing. Installation category II; pollution degree 2
Electrical specifications	100/115 VAC, 50/60 Hz; 230 VAC, 50/60 Hz; 120 watts power consumption
Compliance	CE Mark; EMC directive (89/336/EEC); Low voltage directive (73/23/EEC); HI-POT (1900 VDC, 60 sec.)



Ravenfield® BS/C+ HTHS Viscometer shown with Model DR Autosampler and temperature controlled bath