

Precision Capillary Viscometer System

Full method compliance combined with the convenience of completely automated measurement.

Suitable for measuring the viscosity of new oils, residual fuels and distillate fuels, as well as used oils in full compliance with IP 543. Instrument performance meets precision criteria of ASTM D 445, IP 71, ISO 3104, ASTM D445, ASTM D 2270 & ASTM D2161.



Autosampler can be accommodated on top or to one side.

ANALYZER FEATURES:

- Precise NIR detection
- Transparent, opaque & black oils
- Wide viscosity range
- Two measuring positions
- Viscosity Index
- 54 position RSS Autosampler
- Built in PC with powerful database

ADVANTAGES:

- IP & ASTM Round Robin precision
- Automatic sample handling
- Automatic flow time measurement
- Automatic cleaning & drying
- User friendly WINDOWS software
- Large database capability, LIMS ready
- No oil baths
- No expensive glassware

APPLICATION FEATURES:

- 2 separate sample paths
- Plastic or glass sample vials
- Sample pre-heating
- Simultaneous analysis at 40°C & 100°C
- Distillates & residuals in the same rack
- ASTM viscosity standard calibration
- Entire sample path solvent cleaned
- Graphic diagnostics screens

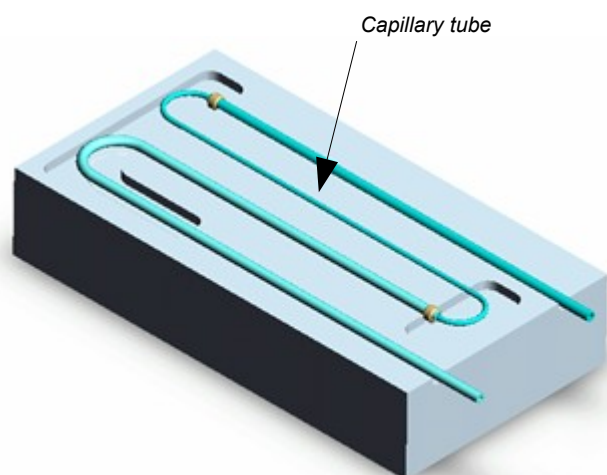


PRINCIPLE OF OPERATION

At the heart of the AV-2 RSS is a traditional capillary tube, which determines viscosity by measuring flow times. This ensures optimal precision of measurement but without the inconvenience of maintaining a liquid bath. Instead, the AV-2 RSS combines advanced multi-processor systems, accurate thermal control, super sensitive micro-detectors and very efficient in-situ automatic cleaning system. The instrument is specially well suited to measure black oils and residual fuels.

PRECISION

The RHEOTEK AV-2 RSS is fully compliant with standard test method IP 543 - *Determination of the dynamic viscosity of distillate & residual fuel oils and calculation of kinematic viscosity - Automatic capillary tube method*. This method shows that there is good correlation between viscosities determined by the automatic capillary tube method and IP 71, ISO 3104 & ASTM D 445 manual kinematic viscosity results.



The AV-2 RSS measures the flow time of a sample through a reverse flow capillary tube. Each viscometer is housed in an electronically heated/cooled module controlled to $\pm 0.01^{\circ}\text{C}$. This image shows the bottom half of a measuring block.

VISCOSITY & DENSITY

The AV-2 RSS measures flow times & determines viscosity in mPa.s. In addition “KV” models determine density to a precision of four decimal places. The two measured values are used to report kinematic viscosity in mm^2/s , cSt. The result database records all measurements and calculations in order to provide complete traceability of results.

RESULTS DATABASE

The RHEOTEK AV-2 RSS is equipped with a very powerful database for extensive management of measurement results. A number of different filtering and sorting options are available for automatic generation of reports. The flexible software allows for the PSL installation engineer to configure this function according to the practices in the individual laboratory.



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AV-2 LUBRICANTS

Configured to measure new/used lubricants at 40°C & 100°C (Dual temperature) simultaneously. Reported results include kinematic viscosity & Viscosity Index.

Model Reference: AV-2 RSS-DT

AV-2 FUELS

Configured to measure diesel fuels at 40°C, as well as residual fuels at 50°C (optionally 80°C or 100°C). Two viscometer measuring positions. Kinematic viscosity results reported.

Model Reference: AV-2 RSS-KV

AV-2 USED OILS

Configured in "fast mode" to measure used oils. Two viscometer measuring positions can be used at 40°C/40°C, 100°C/100°C or 40°C/100°C. Kinematic viscosity results reported.

Model Reference: AV-2 RSS-FM

Technical specifications AV-2 RSS

Operating temperature	20....100°C
Kinematic Viscosity test methods	IP 543 full compliance, ASTM D 445 precision
Viscometer tube	AV-2 Reverse flow suitable for transparent & opaque liquids, including black oils.
Sample volume (new oils) Sample volume (used oils)	22 ml or less for dual temperature analysis, < 5ml for used oil measurement (fast mode)
Cleaning	In-situ automatic cleaning. Cleaning solvent miscible with sample followed by drying solvent. Optimized cleaning parameters to minimize solvent usage whilst providing a thorough cleaning
LIMS	Compatible
Electrical:	220-240V, 50Hz or 110V, 60Hz. Other on application
Dimensions:	AV-2 Analyzer: w x d x h: 80 x 69 x 40 cm Autosampler: w x d x h: 54 x 44 x 60 cm
Weight:	AV-2 Analyzer: 45 Kg Autosampler: 19 Kg
Utilities:	Compressed air required

Temperature °C	Standard Viscosity Range
40	1 to 1000 mm ² /s, cSt
50	1 to 900 mm ² /s, cSt
100	1 to 75 mm ² /s, cSt



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