

# Instrument Guide

## Viscometers

Accuracy: +/- 1%  
Repeatability: +/- 0.2%

### DVPlus



#### Entry-Level Viscometer

- For essential viscosity needs
- 5-inch touch screen interface with a real-time test indicator
- 740 speeds for an excellent range capacity
- Temperature offset capability to  $\pm 5^{\circ}\text{C}$
- Displays Viscosity, Temperature, torque, speed/spindle
- USB connectivity and Bluetooth

### DV2Plus



#### Global Standard

- 7-inch full-color PCAP touchscreen
- Ultra-fine control with 740 speeds
- Post-test graphing, torque vs. time
- Automated oscillation testing
- Digital leveling

## When You Need More Than a Standard Viscometer

### Full-Feature Rheometer



#### Advanced Precision

All-in-One Instrument for Viscosity and Yield Stress Measurements

- Leading easy-to-use Full-Featured Rheometer
- Digital leveling
- Start-up wizard
- Gel-timer functionality
- 7" touch screen display
- Built in math models for data analysis in stand-alone mode

### DVNext



#### Cone Plate

Rheometer for Small Sample Sizes

- Small sample size
- Electronic gap adjustment
- Touch screen display
- Precise shear rates to determine a materials' flow curve behavior



#### Compliant Version

- 21 CFR Part 11 Compliant
- Hand-held scanner for bar code detection
- Accessory detection with bar code detection
- Magnetic coupling
- Gel-Timer Enabled

## Special Viscometers

### CAP 2000+



Viscometer Specific for Paints and Coatings

- Cone & Plate Viscometer for high shear tests
- Peltier temperature control
- Small Sample size (<1 ml) for simplified testing
- Viscosity 0.2-15,000 Poise
- Shear Rate 10-13,000 sec<sup>-1</sup>
- 5-1,000 rpm
- Temperature Range: 5-75 °C or 50-235 °C
- Meets Industry standards: ASTM D4287, ISO 2884, and BS 3900

### Dial



Original that set the world standard

- Continuous torque sensing capability
- Torque measurement accuracy: 1% of full scale range
- Repeatability: 0.2% of full scale range
- Easy speed adjustment and on/off control
- Compatible with all Brookfield accessories
- Electronic drive means quiet, reliable operation
- Traditional Brookfield quality

### KU-3



Viscometer for Paints, Coatings, Inks, and Pastes

- ASTM D562 compatible
- LED display in Krebs Units, Grams, and Centipoise
- Magnetic spindle coupling
- Easy to use, no weights, simplifies established test procedure
- Accommodates standard pint, 1/2 pint, and quart cans
- Measurement range 40 to 141 KU, 32 to 1099 g, 27 to 5,274cP

# Rheometers

## RSO



Oscillatory Rheometer for Viscoelasticity measurements

- Air Bearing Motor for Oscillatory measurements
- 7" Touch Screen
- Intuitive user-friendly Interface for simple stand-alone operation
- Auto spindle recognition
- Automatic gap setting
- Rapid temperature control
- Quick connect coupling system
- Integration with Rheo3000 software

## RSX SST



Soft-Solids Tester for pastes, slurries, and materials with particulates

- Designed for controlled rate and controlled stress measurements
- Large, user-friendly 7-inch touch screen
- Quick-connect coupling system

## RSX CP



Ideal for measuring small sample volumes or difficult to clean materials

- Peltier and Fluid Heat (external bath) options available for rapid and accurate temperature control
- Very small sample size for rapid test setup and cleanup
- Controlled shear stress/shear rate operation
- Automatically spindle gap setting with standard one-piece spindles
- Spindles available for both Cone – Plate and Plate – Plate measurements

## RSX CC



Superior Viscosity Profiling and proven design for volatile samples

- Temperature control from -20°C to 180°C with choice of direct immersion in bath or external circulation using the FTKY3 water jacket
- Quantifies properties like Viscosity Profiling, Thixotropic Response, Creep Analysis, and Yield Stress Determination
- Use of cylindric geometries provides the most accurate measurement results, especially in the low-viscosity ranges
- Ideal for samples that readily evaporate and may prove challenging with Cone-Plate geometries

## RSX Rheometer Family

- High-end touchscreen Rheometers
- Provides both Controlled Shear Rate (speed) and Controlled Shear Stress (torque) measurements
- 7" Touch Screen Intuitive user-friendly Interface for simple stand-alone operation
- High torque motor for testing challenging samples
- Quick connect coupling system for easy spindle attachment
- Automatic spindle recognition with integrated barcode reader
- Quick test functionality allows for testing within minutes
- Rugged design for the production floor and industrial use & applications
- Integration with Rheo3000 software

# Moisture Analyzers

## Computrac® Vapor Pro® XL



Chemical-Free Moisture Analysis

- Alternative to Karl Fischer Titration Method
- Zero chemical reagents
- RH-sensor measures moisture content
- Heater allows for control over a wide range of testing temperatures
- Detects as few as 10 micrograms of water
- Determines moisture content as low as 10 ppm
- Touchscreen interface

## Computrac® Vapor Pro® XL Autosampler



Multi-sample Automated Chemical-free Moisture Analyzer

- All the features of the Vapor Pro XL
- Automation to test up to 16 samples with individual test profiles

## Why Choose Computrac® Vapor Pro® XL, VPXL Moisture Analyzer Over Karl Fischer Titration, KFT?

Accurate moisture analysis is crucial in industries like pharmaceuticals, food, chemicals, and manufacturing. Karl Fischer Titration has been the standard for precise moisture measurement, but new technologies like the Computrac® Vapor Pro® XL Moisture Analyzer offer significant advantages.

Speed and Efficiency	Accuracy and Precision	Environmental and Operational Impact	Versatility Across Industries
<b>KFT:</b> Time-consuming with complex sample preparation and reagent handling.	<b>KFT:</b> Highly accurate but can be compromised by environmental conditions and reagent errors.	<b>KFT:</b> Uses toxic chemicals, leading to higher costs and environment concerns.	<b>KFT:</b> Limited versatility, requiring specific solvents and reagents.
<b>VPXL:</b> Fast results without extensive sample preparation or chemical interferences.	<b>VPXL:</b> Comparable precision with reduced errors and contamination risks.	<b>VPXL:</b> Eco-friendly, non-destructive testing without hazardous substances, reducing costs and operator risk.	<b>VPXL:</b> Versatile across various sample types, ideal for multiple industries.

# Texture Analyzer and Powder Flow Tester



## CTX Texture Analyzer

Easy-to-use For Measuring Compression and Tension of Materials

- Deflection compensation for the most accurate measurements
- Interchangeable load cells for optimal flexibility (choices ranging from 100g to 100kg)
- Extended boom for longer reach testing up to 280 mm
- Three adjustable base tables for more versatile sample testing
- Compression and tension testing for rapid QC analysis
- Provides real-life insight into physical properties
- Easy to read display and easy to use intuitive controls
- High precision: 500 Hz data output rate
- 21 CFR Part II Compliant
- Test speeds between 0.01 – 40 mm/s
- Wide variety of probes and fixtures available for testing including foods, cosmetics, pharmaceutical, mechanical devices, packing materials and more



## PFT Powder Flow Tester

Quick and Easy Analysis of Powder Flow Behavior

- Multiple test options
- Tests powders for formulation, characterization, and QA/QC
- Compact design - easily fits on a workbench
- Includes Powder Flow Pro Software
- Accessories available include Vane Lid, Friction Lid, Outer and Inner Catch Trays

# Viscometer Accessories, Spindles, Standard Oils, and More



## Enhanced UL Adapter

Ideal for low viscosity materials and sample sizes (16 mL)

- Reduces measurement to as low as 1 cP
- Quick and easy removal of the chamber
- Unique ULA assembly design
- Magnetic spindle coupling option



## Small Sample Adapter

Ideal for limited sample volumes (2 to 16 mL)

- Disposable sample chambers
- Magnetic spindle coupling option
- (Simultaneous sample temperature measurement is possible by ordering an embedded temperature probe in a sample chamber)



## HPQA Helipath Quick Action Stand

Motorized quick action stand for all viscosity testing

- Helipath action for non-flowing materials such as gels, pastes, and creams
- Quick Action Stand Capabilities
- Simple to set up and clean
- T-Bar Spindles
- Magnetic and Threaded coupling option
- Integrates with DVPlus and DV2Plus for streamlined operation



## Vane Spindles

Designed for paste-like materials, gels, and fluids

- 3-piece spindle set (V-71, V-72, and V-73) for versatile range capability
- Minimal disruption of the sample during spindle immersion
- Provides data including:
  - Complete flow curve analysis
  - Yield behavior at low rotational speeds
  - Magnetic spindle coupling option



## DIN Adapter

Ideal for Small Sample Volumes

- Complies with DIN 53019
- Can measure small sample volumes
- Cylindrical geometry provides defined shear rates



## Thermosel System

- Sample temperature control up to 300°C

(AMETEK Brookfield offers A variety of spindles and chambers, including disposable spindles for hard-to-clean materials.)



## Water Baths

- Refrigerated water baths, circular water baths, and more
- Bath accessories are also available for optimum performance

(Choice of bath model is determined by temperature range, cooling requirements, flow speeds, and reservoir capacity.)



## Viscosity Standards

Calibration kits, Oil fluids, Silicone fluids, and more

- Accuracy: +/- 1% with excellent temperature stability
- NIST methods certified
- Special order Silicone fluids are available

# Navigating Lab Instruments

## OVERVIEW OF INSTRUMENT OFFERINGS

Price

### Instrumentation Choices

Laboratory Viscometers & Rheometers overview to assist with decision making. The horizontal axis indicates performance capability and features. The vertical axis indicates pricing level



**Dial**  
Original that set the Worldwide Standard

- Original Viscometer



**DVPlus**  
Entry-Level Viscometer

- Advanced User Interface
- Best-in-Class Features



**DV2Plus**  
Global Viscosity Standard

- Real-Time Test Insights
- Advanced Data Management



**DVNext Cone/Plate**  
Advanced Rheometer

- Magnetic Cone/Plate
- Absolute Viscosity in Small Samples



**DVNext**  
Advanced Precision

- Easy-to-Use
- Stand-Alone
- Viscosity & Yield Stress
- 21 CFR Part 11 Compliance



**RSX Cone/Plate**  
Advanced Rheometer

- Controlled Rate & Stress Measurements
- Small Sample Size
- Rapid Set-Up & Cleanup



**RSX Coaxial Cylinder**  
Advanced Rheometer

- Concentric Cylinder Measurement
- Low Viscosity Fluids



**RSX SST Rheometer**

- Designed for controlled rate and controlled stress measurements
- Large, user-friendly 7-inch touch screen
- Quick-connect coupling system

Performance

### SPECIAL PURPOSE INSTRUMENTS



**KU-3 Viscometer**  
Paints, Coatings & Ink Applications

- Krebs Units, Gram Units & Centipoise



**CAP 2000+**  
Durable Variable Speed Viscometer

- Small Sample Volumes
- Accurate Temperature Control



**PFT**  
Powder Flow Behavior

- Quick & Easy Analysis
- Industrial Processing Equipment



**CTX**  
Advanced Compression & Tension Testing

- Interchangeable Load Cells
- Deflection Compensation



**MAX 4000XL**  
Rapid, Reliable Moisture & Solids Analysis

- Loss-on-Drying Analyzer
- High-Performan



**MAX 5000XL**  
Moisture, Solids & Ash Analyzer

- Accurate Readings from a Single Sample



**Vapor Pro XL**  
Moisture Analyzer

- Chemical Free
- Alternative to Karl Fischer Titration

### Calibration & Repair

#### Professional Instrument Maintenance

Annual calibration is recommended to ensure quality performance and includes inspection of all electronic components. AMETEK Brookfield's team of experienced, certified engineers and technicians perform calibration and repair services in our facilities with a defined operating procedure.

- Annual Calibration Certification Service, CSS
- NIST traceable documents with Certification
- Loaner instruments are available in some locations
- Validation – IQ/OQ/PQ
- NIST Traceability Certificate
- 17025 Calibration for Select Instruments
- Detailed report of services performed on each instrument
- Customer On-Site Services available



**AMETEK Brookfield**

11 Commerce Blvd. Middleboro, MA 02346 USA | Phone: 1-800-628-8139, 1-508-946-6200  
[www.brookfieldengineering.com](http://www.brookfieldengineering.com)

Repeatable

Reliable

Accurate