

Model:

DVNXLV(Threaded)+SSA+W+RheocalcT

DVNXLV-viscometer

Threaded: spindle connection

SSA: Small Sample Adapter

W-water Bath

RheocalcT : control software



AMETEK Brookfield's Latest, Full-Featured Rheometer, with Optional 21 CFR Part 11 Compliant Version.



Quick Set-up with New Viscosity Wizard and Digital Leveling



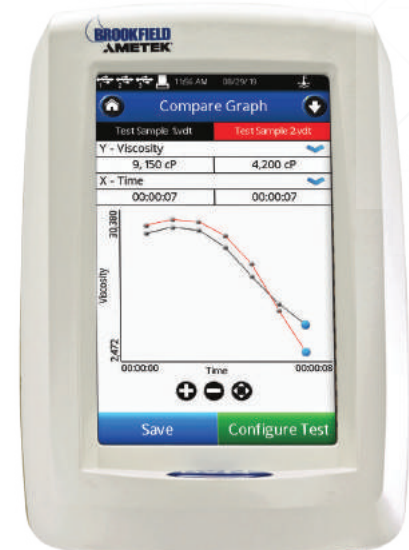
Compliant Versions Include Ethernet and LIMS Connectivity



Single-handed Spindle Installation and Removal



Optional Compliance to 21 CFR Part 11 in Stand-alone Mode



MODEL COMPARISON	Standard	Compliant
Viscosity Wizard	Included	Included
Digital Leveling	Included	Included
Automated Oscillation Test	Included	Included
Updated Gap Setting	Included	Included
Gel Timer Functions	Included	Included
Magnetic Coupling System	Optional	Included
Barcode Scanning*	Optional	Included
Ethernet Connectivity	N/A	Included
LIMS Connectivity	N/A	Included
Compliance to 21 CFR Part 11	N/A	Included

\*Spindle recognition with barcode reader

# DVNext Viscometer/Rheometer

The all-in-one instrument for measuring viscosity and yield stress. Also available in Cone/Plate version.

## Features

### 7-inch Full-Color - Touch Screen Display

- Enhanced Controls
- Real-Time Graphing
- Supports Multiple Languages

### Displayed Info:

- Viscosity (cP or mPa·s)
- Temperature (°C or °F)
- Shear Rate/Stress
- % Torque
- Speed/Spindle
- Step Program Status
- Math Model Calculations

### Viscosity Wizard

Built-in math models for data analysis in stand-alone mode. E.g. Casson, Bingham, Power Law, Thix Index.

### Integrated Temperature Control

Connected to AMETEK Brookfield TC series Baths with AP/SD Controllers or AMETEK Brookfield Thermosel System.

### Stand-alone Programming

#### RTD Temperature Probe

Accuracy: ±1.0% of Range

- Displayed with test data

Repeatability: ±0.2%

Analyze characteristics such as yield stress, flow curves (mixing, pumping, spraying), leveling, recovery.

USB PC Interface provides optional computer control and automatic data collection capability

### Digital Leveling

Internal Data Storage: 150 MB

### Date and Time Stamp File

### Built-In Options

- Math Modeling
- Temperature Control
- Yield Tests
- Programmable QC Limits, Alarms, End Conditions

Optional Gel Timer functionality using unique magnetic coupling

### GAMP\*

#### 21 CFR Part 11 Compliant\*

- Customizable User Access
- Electronic Signatures
- Uneditable PDFs
- Automated Archived
- Audit Trail

\*Only available in Compliant Versions

## Optional Accessories

- RheocalcT Software
- Label Printer
- Barcode Scanner
- Vane Spindles
- Ball Bearing Suspension (Standard in high torque instruments)
- Viscosity Standards
- RV/HA/HB-1 Spindle
- Magnetic Coupling System
- Quick Action Lab Stand
- Small Sample Adapter
- UL Adapter
- Spiral Adapter
- DIN Adapter
- Temperature Bath
- Thermosel
- Helipath Stand with T-bar
- Spindles
- Gel Timer Specific Coupling
- Assembly

VISCOSITY RANGE cP(mPa·s)		SPEEDS (2600 available)	
MODEL	Min.	Max.	RPM Number of Increments
DVNXLV(Threaded) +SSA+W+RheocalcT	†1	6M	.01-250 2.6K

†1 cP achieved with UL SSA Adapter accessory. 15 cP on LV with standard spindles.

B = 1 billion M = 1 million K = 1 thousand  
cP = Centipoise mPa·s = Millipascal·seconds ††  
Minimum viscosity is achieved with optional RV/HA/HB-1 spindle

# Small Sample Adapter™

For rheological evaluation where sample volume is limited

## What's Included

- Water Jacket
- Locating Channel Assembly
- Choice of one SC4 Spindle\*
- Choice of one SC4 Sample Chamber\*
- Insulating Cap
- Extension Link with Coupling Nut (for non-magnetic coupling)

\*Specify when ordering

## Optional Accessories

- Embedded RTD Temperature Probe in Chamber
- SC4-13RD-100 (100/box) Disposable Sample Chambers (requires special water jacket)
- SC4-27D-100 (100/box) Disposable Spindles
- SSA-DCU Special Water Jacket and SC4-13RD Disposable Chambers (100/box)
- SSA27D-13RD-100 Includes SSA-DCU items (above) plus SC4-27D Disposable Spindles (100/box)
- Temperature Bath
- Magnetic Spindle Coupling

For more info on Small Sample Adapter Accessory Kits, visit our website at [brookfieldengineering.com](http://brookfieldengineering.com)

The Small Sample Adapter provides a defined geometry system for accurate viscosity measurements at precise shear rates. Consisting of a cylindrical sample chamber and spindle, the Small Sample Adapter is designed to measure small sample volumes of 2 to 16 mL, and easily attaches to all standard AMETEK Brookfield Viscometers/Rheometers.



Complete system shows the DV2T Viscometer and Small Sample Adapter with Circulating Water Bath for temperature control.



Standard Sample Chamber with embedded temperature probe provides direct temperature measurement of sample



Disposable Sample Chamber (Requires SSA-DCU Water Jacket)

Small Sample Adapter Viscosity Ranges cP(mPa•s)

SPINDLE SAMPLE CHAMBER SAMPLE VOLUME SHEAR RATE (sec-1) MODEL	SC4-18 *SC4-13R(P)	SC4-31 *SC4-13R(P)	SC4-34 *SC4-13R(P)	SC4-16 *SC4-13R(P)	(316 s/s only) SC4-25Z *SC4-13R(P)	SC4-21 *SC4-13R(P)	SC4-27(D) *SC4-13R(P)	SC4-15 *SC4-7R(P)	SC4-28 *SC4-13R(P)	SC4-29 *SC4-13R(P)	SC4-18 *SC4-13R(P)
DV3TLV/DVNextLV	1.2-30K	12-300K	24-600K	48-1.2M	192-4.8M	It is possible to use the above spindles with any of these instruments. However, it is not recommended. Digital Viscometers/Rheometers will automatically calculate viscosity. Please contact AMETEK Brookfield or an authorized dealer if you require information on viscosity range.					
DV2TLV	1.5-30K	15-300K	30-600K	60-1.2M	240-4.8M						
DV1LV	3-10K	30-100K	60-200K	120-400K	800-1.6M						
DVELV	3-10K	30-100K	60-200K	120-400K	800-1.6M						
LVT	5-10K	50-100K	100-200K	200-400K	800-1.6M						
DV3TRV/DVNextRV											
DV2TRV						25-500K	125-2.5M	250-5M	250-5M	500-10M	625-12.5M
DV1RV						50-170K	250-830K	500-1.7M	500-1.7M	1K-3.3M	1.25K-4.2M
DVERV						50-170K	250-830K	500-1.7M	500-1.7M	1K-3.3M	1.25K-4.2M
RVT						50-100K	250-500K	500-1M	500-1M	1K-2M	1.25K-2.5M
DV3THA/DVNextHA						40-1M	200-5M	400-10M	400-10M	800-20M	1K-25M
DV2THA						50-1M	250-5M	500-10M	500-10M	1K-20M	1.25K-25M
DV1HA						100-300K	500-1.7M	1K-3.3M	1K-3.3M	2K-6.7M	2.5K-8.3M
DVEHA						100-300K	500-1.7M	1K-3.3M	1K-3.3M	2K-6.7M	2.5K-8.3M
HAT						100-200K	500-1M	1K-2M	1K-2M	2K-4M	2.5K-5M
DV3THB/DVNextHB						160-4M	800-20M	1.6K-40M	1.6K-40M	3.2K-80M	4K-100M
DV2THB						200-4M	1K-20M	2K-40M	2K-40M	4K-80M	5K-100M
DV1HB						400-1.3M	2K-6.7M	4K-13.3M	4K-13.3M	8K-26.7M	10K-33.3M
DVEHB						400-1.3M	2K-6.7M	4K-13.3M	4K-13.3M	8K-26.7M	10K-33.3M
HBT						400-800K	2K-4M	4K-8M	4K-8M	8K-16M	10K-20M

M = 1 million K = 1 thousand N = RPM e.g. Spindle SC4-18 1.32 x 10 (rpm) = 13.2 sec-1 cP = Centipoise mPa•s = Millipascal•seconds. N/A = Not applicable for historical reasons. However, it is possible to use any spindle/chamber combination with any torque range. Digital viscometers/rheometers will automatically calculate viscosity.

\* Examples

SC4-13R Sample Chamber

SC4-13RPY Sample Chamber with RTD temperature probe and cable to viscometer/rheometer

SC4-27 Stainless Steel Spindle

† Disposable chamber available in 13R size and requires

SC4-45YD water jacket

SC4-13RP Sample Chamber with RTD temperature probe

SC4-13RD-100 Disposable Sample Chamber available in packages of 100

SC4-27D Disposable Spindle

Note: Hastelloy C available for some spindles/chambers. Call for details.

## Removable Sample Chamber

The design of the Small Sample Adapter allows the sample chamber to be easily changed and cleaned without disturbing the set-up of the viscometer or temperature bath. This means that successive measurements can be made under identical conditions.

## Temperature Control

The sample chamber fits into a water jacket so that precise temperature control can be achieved when the AMETEK Brookfield circulating temperature bath is used. The stirring action of the rotating spindle, plus the small sample volume, reduces waiting time to achieve thermal equilibrium. Direct readout of sample temperature is provided using sample chambers with optional embedded RTD sensor connected to the DV1 and DV2T Viscometers and DVNext Rheometer. Working temperature range for the Small Sample Adapter is from 1°C to 100°C.

## Cylindrical Geometry

The Small Sample Adapter's coaxial cylinder geometry provides extremely accurate viscosity measurements at defined shear rates. Option: Solid shaft.

## Disposable Sample Chambers and SC4-27D Spindle

Disposable 13R chambers, for hard-to-clean materials, are available in a kit that comes complete with 100 chambers and special-sized water jacket (Part No. SSA-DCU). Additional disposable chambers can be purchased in quantities of 100 (Part No. SC4-13RD-100).

## Magnetic Coupling Option

Magnetic Spindle Coupling Option allows spindles to be quickly attached and removed, and prevents any damage that can occur from frequent spindle changes or multiple users.



- Water jacket allows rapid and precise temperature control of sample
- Channel Assembly
- SC4 Spindle
- SC4 Sample Chamber is easily changed. Slides into water jacket and locks in place. RTD Temperature Probe allows simultaneous sample temperature measurement when you order embedded temperature probe in sample chamber.

Note: Optional disposable chamber also available.



# Temperature Control Baths

Temperature Bath Systems combine state-of-the-art controller displays with high performance circulating baths to give accurate viscosity test results

(+91-22)26335560-61-62

[www.komalscientific.com](http://www.komalscientific.com)

[info@komalscientific.com](mailto:info@komalscientific.com)

All controllers are swivel-mounted so that user can adjust position for optimum viewing angle



## AP Series Controllers

- Color touch-screen interface
- Standalone programmable or PC control with RheocalcT software
- Variable-speed pump
- Max. temperature up to 200°C
- Multiple languages (English, French, German, Spanish, Chinese available)
- Built-in help menu

## SD Series Controllers

- Best value
- Programmable with PC control using RheocalcT software
- Quick scroll to set temperature in standalone mode
- 2-speed pump
- Maximum temperature up to 170°C

## MX Series Controllers

- Economical
- Large character display
- Single-speed pump
- Maximum temperature up to 135°C

## Step 1: Choosing the controller

CHOOSE THE ONE THAT BEST SUITS YOUR APPLICATION

- Choose the controller by considering factors such as the need for PC control using RheocalcT with DV2T or DV3T, ease of use, pump speed, and foreign language choices (AP series controller only).

### Temperature Baths Features

MODEL	Temperature Range Low	Temperature Range High	Controller	Cooling	Temperature Stability†	Digital Type/Resolution (Set / Read)	Reservoir Capacity	Pump Speed	Maximum Flow Rate	Internal Work Area (inches)	Overall Dimensions (inches)	Weight (Gross)
TC-650AP	-20°C	+200°C	AP	Refrigerated	0.01°C	0.01 / 0.001	7.0 liters	Variable	16 LPM	6.18 x 5.59 x 5.0	21.3 x 8.7 x 24.3	90 lbs
TC-650SD	-20°C	+170°C	SD	Refrigerated	0.04°C	0.1 / 0.1	7.0 liters	2-speed	11 LPM	6.18 x 5.59 x 5.0	21.3 x 8.7 x 24.3	90 lbs
TC-650MX	-20°C	+135°C	MX	Refrigerated	0.07°C	0.1 / 0.1	7.0 liters	1-speed	12 LPM	6.18 x 5.59 x 5.0	21.3 x 8.7 x 25.4	84 lbs
TC-550AP	-20°C	+200°C	AP	Refrigerated	0.01°C	0.01 / 0.001	7.0 liters	Variable	16 LPM	6.18 x 5.59 x 5.0	23.2 x 16.2 x 16.2	90 lbs
TC-550SD	-20°C	+170°C	SD	Refrigerated	0.04°C	0.1 / 0.1	7.0 liters	2-speed	11 LPM	6.18 x 5.59 x 5.0	23.2 x 16.2 x 16.2	90 lbs
TC-550MX	-20°C	+135°C	MX	Refrigerated	0.07°C	0.1 / 0.1	7.0 liters	1-speed	12 LPM	6.18 x 5.59 x 5.0	23.2 x 16.2 x 17.3	84 lbs
TC-250AP*	ambient +10°C†	+150°C	AP	Tap Water	0.01°C	0.01 / 0.001	10.0 liters	Variable	16 LPM	5.0 x 11.0 x 6.0	13.9 x 13.5 x 14.9	45 lbs
TC-250SD*	ambient +10°C†	+150°C	SD	Tap Water	0.04°C	0.1 / 0.1	10.0 liters	2-speed	11 LPM	5.0 x 11.0 x 6.0	13.9 x 13.5 x 14.9	45 lbs
TC-250MX*	ambient +10°C†	+135°C	MX	Tap Water	0.07°C	0.1 / 0.1	10.0 liters	1-speed	12 LPM	5.0 x 11.0 x 6.0	13.9 x 13.5 x 16.0	39 lbs
TC-150AP*	ambient +10°C†	+150°C	AP	Tap Water	0.01°C	0.01 / 0.001	6.0 liters	Variable	16 LPM	4.5 x 4.0 x 6.0	13.4 x 8.1 x 14.9	26 lbs
TC-150SD*	ambient +10°C†	+150°C	SD	Tap Water	0.04°C	0.1 / 0.1	6.0 liters	2-speed	11 LPM	4.5 x 4.0 x 6.0	13.4 x 8.1 x 14.9	26 lbs
TC-150MX*	ambient +10°C†	+135°C	MX	Tap Water	0.07°C	0.1 / 0.1	6.0 liters	1-speed	12 LPM	4.5 x 4.0 x 6.0	13.4 x 8.1 x 16.0	20 lbs
TC-351	-20°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14.0 x 14.0 x 14.0	72 lbs

\* For use at lower temperatures, use the built-in tap water cooling, or use model TC-351 Cooler for control to -20°C.

† Low temperature limit 10°C above ambient unless external cooling is used.

‡ Temperature stability may vary depending on bath volume, surface area, insulation and type of fluid

N/A - Not Applicable

FOR OPERATING TEMPERATURES HIGHER THAN 80°C, PLEASE CONTACT BROOKFIELD FOR BATH FLUID RECOMMENDATIONS.

## Step 2: Choosing the bath

CHOOSE THE CIRCULATING BATH THAT MEETS YOUR NEEDS

Determine the type of circulating bath needed by considering temperature range, cooling requirements, reservoir capacity, flow speeds and built-in drains (Models TC-550 and TC-650).

# TC-550

PC control capable  
with RheocalcT software

## Circulating Water Bath Refrigerated

- Most popular choice with widest temperature control capability
- 7-liter reservoir capacity
- Configured to measure viscosity directly in the bath or circulate to external water-jacketed devices\*\*
- Accommodates one 600 mL beaker
- Provides stand-alone operation with no tap water required and easy control of set-point
- Available with MX, SD or AP Controllers
- Automated sample temperature control available with SD and AP Controllers



AP Controller shown

# TC-650

PC control capable  
with RheocalcT software

## Circulating Water Bath Refrigerated

- Compact — small “footprint” on your lab bench or can be placed underneath lab bench
- 7-liter reservoir capacity
- Specifically designed for circulating to external water-jacketed devices\*\*
- Accommodates one 600 mL beaker
- Provides stand-alone operation with no tap water required and easy control of set-point
- Available with MX, SD or AP Controllers
- Automated sample temperature control available with SD and AP Controllers



AP Controller shown

\*Provided tap water temperature is 15°C or lower

\*\*All baths can be used with Brookfield water jacketed devices; Wells-Brookfield Cone/Plate Viscometer, R/S-CC and R/S-CPS Rheometers and Small Sample Adapter, Ultra-Low Adapter and DIN Adapter accessories

# TC-150

## Circulating Water Bath Non-Refrigerated

Compact – smallest “footprint” available  
6-liter reservoir capacity  
Removable deck lid accommodates one 600 mL beaker to measure viscosity directly in the bath  
Tap water cooling coil for temperature control at 25°C\*  
Built-in circulator pump for use with external water-jacketed devices\*\*  
Available with MX, SD or AP Controller



## Water Bath Accessories

Algicide 8 oz.

TC-Fluid 1A

Keeps circulator baths clean, odor free and resists black algae

50/50 Premix Ethylene Glycol 1 gal.

TC-Fluid 2 -20°C to +100°C

Ethylene glycol 1:1 solution, ready to use

High Temperature Fluid 1 gal.

TC-Fluid 3 +50°C to +150°C

TC-Fluid 4 +100°C to +200°C

PVS-152 +25°C to +200°C

These heat transfer fluids provide superior thermal stability

Low Temperature Fluid 1 gal.

TC-Fluid 5 -50°C to +58°C

Excellent low temperature performance  
Little or no evaporation

Bath Cleaner 8 oz.

TC-Fluid 6A

Removes rust and mineral deposits  
Concentrated liquid

18" Lab Stand Rod

VS-CRA-18S

Designed for increasing viscometer height when measuring in a TC-150, TC-250 or TC-550 Bath

# TC-250

PC control capable with RheocalT software

## Circulating Water Bath Non-Refrigerated

Largest work area available for conditioning multiple samples directly in the bath  
10-liter reservoir capacity  
Accommodates 600 mL and 1000 mL beakers (cover is removable for large sample container requirements)  
Built-in tap water cooling coil for temperature control at 25°C\*  
Built-in circulator pump for use with external water-jacket devices\*\*  
Available with MX, SD or AP Controller



# TC-351

Cooler (not shown) for use with TC-150 & TC-250 Circulating Baths

Eliminates tap water requirements on non-refrigerated baths  
Increases lower range of most baths to -20°C

## Step 3: Comparing bath features

Once you've familiarized yourself with the Brookfield Circulating Water Bath Series you can easily compare models to find the bath that best suits your requirements.



## Accessories

Additional benches for elevating the position of beakers, metal lids for anchoring beakers, hoses, and deck lid covers are available. Contact us for details.



# RheocalcT Software

When used with the AMETEK Brookfield DV2T Viscometer, DV3T Rheometer, or DVNext Rheometer, RheocalcT can analyze data, generate multiple plot overlays, print tabular data, run math models and perform other time-saving routines. In addition, the Advanced Edition offers a complete set of tools for 21 CFR Part 11 compliance.



## FEATURES & BENEFITS

### Testing & Analysis Features

- Wizards to guide you through the creation of common tests
- Up to twenty comparison data sets can be plotted at once
- Yield testing alone or in conjunction with other viscosity measurements
- Looping functions for repetitive tasks
- Averaging of collected data by step or whole test
- Math models: Bingham, Casson, Casson NCA/CMA, Power Law, IPC Paste, Herschel-Bulkley, Thix Index

### 21 CFR Part 11 Tools (for Advanced Edition)

- Multiple logins and multiple access levels
- Digital signatures
- Audit trail
- Printing to non-editable PDF
- Data storage in a password-protected database
- LIMS compatibility

### Minimum System Requirements

- Windows 8 64-bit, Windows 10 64-bit
- 2 GHz processor
- 4 GB RAM
- One USB port. If using a temperature controller, an RS-232 port is also required
- 1280x800 resolution display with 128 MB of graphics memory

