

# CAP 1000+™ & CAP 2000+™

## Cone & Plate Viscometers

**Keypad** for direct input of test parameters

**Cone Spindle** is easily removed for cleaning

**Easy-to-Use Control Handle** for accurate, automatic cone positioning

**Designed to handle repetitive testing** in production environments with easy setup and cleaning

**4-Line Display** allows simultaneous viewing of all test parameters

**Choice of instruments:**  
CAP1000+ (single speed)  
CAP2000+ (variable speed)

**Automatic cone/gap positioning**

**Small sample size**  
less than 1 mL

**Built-in Peltier Plate** for temperature control of sample:  
L Series: 5°C — 75°C  
H Series: 50°C — 235°C



### What's Included?

Instrument

Choice of Torque Range:

High Torque (ICI Specification): 181,000 dyne • cm

Low Torque: 7,970 dyne • cm

Choice of One Cone Spindle (p42)

Choice of Temperature Control: L or H

### Optional Accessories

CAP Viscosity Standards (p53)

Additional Cone Spindle (p46)

Capcalc32 Software ►

Protective Keypad Covers (p51)

### CAP1000+

Single speed 750 or 900 rpm instrument, ideal for QC. Optional choice of alternative speed is available upon request. See examples below at 400 rpm and 100 rpm.

### CAP2000+

Variable speed 5-1000 rpm instrument ideal for R&D as well as more detailed QC testing. Automated PC control (using optional Capcalc32 software).

| MODEL     | VISCOSITY RANGE<br>cP(mPa•s) |      | SPEEDS  |                      |
|-----------|------------------------------|------|---------|----------------------|
|           | Min.                         | Max. | RPM     | Number of Increments |
| CAP 1000+ | see chart on                 |      | 900/750 | 2                    |
| CAP 2000+ | (p15)                        |      | 5-1K    | 995                  |

\* Dependant on cone selected.

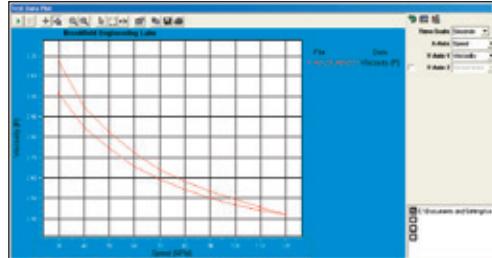
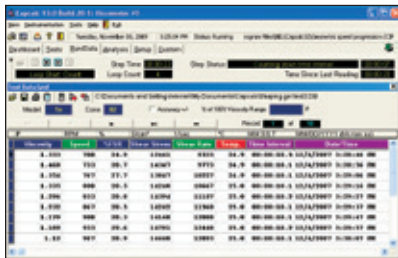
M = 1 million K = 1 thousand cP = Centipoise mPa•s = Millipascal•seconds

## Capcalc32 Software Optional

TURN YOUR CAP2000+ VISCOMETER INTO A MORE POWERFUL RHEOMETER

Capcalc32 allows control of the CAP2000+ Viscometer while providing automatic data capture and graphical display. Automate your CAP 2000+ Viscometer and generate flow curves quickly and easily.

- Controls test parameters with powerful scripting capabilities
- Looping functions for repetitive tasks
- Automates data collection to save time
- Reduces operator error
- Math modeling for yield stress calculations, plastic index
- Plot up to four data sets for comparisons



## Applications

### MEDIUM VISCOSITY

|                            |                        |             |
|----------------------------|------------------------|-------------|
| Adhesives (hot melt)       | Coatings               | Resins      |
| Architectural Coatings     | Industrial Coatings    | Starches    |
| Autocoats (Hi-performance) | Inks (screen printing) | Surface     |
| Creams                     | Organisols             | UV Coatings |
| Food Products              | Paints                 | Varnish     |
| Gels                       | Paper Coatings         |             |
| Gums                       | Plastisols             |             |

### HIGH VISCOSITY

|                    |                                        |               |
|--------------------|----------------------------------------|---------------|
| Adhesives          | Gels                                   | Sealants      |
| Asphalt            | Inks (ballpoint, offset, lithographic) | Sheet Molding |
| Compound           |                                        |               |
| Chocolate          | Molasses                               | Tars          |
| Composite Polymers | Pastes                                 | Vinyl Esters  |
| Epoxyes            | Roofing Compounds                      |               |

## Perfect for Paints & Coatings

Meets Industry Standards:  
ASTM D4287, ISO 2884, BS 3900  
High Shear Rate Cone & Plate  
(10,000 sec<sup>-1</sup>)

### CAP Cone Viscosity Ranges (Poise)

| MODEL                                                                                                                                                              | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 67µL<br>Cone Spindle: CAP-01 | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 34µL<br>Cone Spindle: CAP-02 | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 24µL<br>Cone Spindle: CAP-03 | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 134µL<br>Cone Spindle: CAP-04 | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 67µL<br>Cone Spindle: CAP-05 | Shear Rate (sec <sup>-1</sup> ): 13.3N<br>Sample Volume: 34µL<br>Cone Spindle: CAP-06 | Shear Rate (sec <sup>-1</sup> ): 2.0N<br>Sample Volume: 170µL<br>Cone Spindle: CAP-07 | Shear Rate (sec <sup>-1</sup> ): 2.0N<br>Sample Volume: 40µL<br>Cone Spindle: CAP-08 | Shear Rate (sec <sup>-1</sup> ): 2.0N<br>Sample Volume: 100µL<br>Cone Spindle: CAP-09 | Shear Rate (sec <sup>-1</sup> ): 5.0N<br>Sample Volume: 170µL<br>Cone Spindle: CAP-10 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| <b>HIGH TORQUE</b>                                                                                                                                                 |                                                                                       |                                                                                       |                                                                                       |                                                                                        |                                                                                       |                                                                                       |                                                                                       |                                                                                      |                                                                                       |                                                                                       |
| 1000+ @750rpm                                                                                                                                                      | .25-2.5                                                                               | .5-5                                                                                  | 1-10                                                                                  | 2-20                                                                                   | 4-40                                                                                  | 10-100                                                                                | N/A                                                                                   | N/A                                                                                  | N/A                                                                                   | N/A                                                                                   |
| 1000+ @900rpm                                                                                                                                                      | .2-2                                                                                  | .4-4                                                                                  | .8-8                                                                                  | 1-16                                                                                   | 3-33                                                                                  | 8-83                                                                                  | N/A                                                                                   | N/A                                                                                  | N/A                                                                                   | N/A                                                                                   |
| 1000+ @400rpm                                                                                                                                                      | .375-4.6                                                                              | .75-9.3                                                                               | 1.5-18.7                                                                              | 3-37.5                                                                                 | 6-75                                                                                  | 15-187                                                                                | .78-7.81*                                                                             | 3.13-31.3*                                                                           | 12.5-125*                                                                             | 1-10*                                                                                 |
| 2000+ @5-1000rpm                                                                                                                                                   | .2-375                                                                                | .4-750                                                                                | .8-1.5K                                                                               | 1-3K                                                                                   | 3-6K                                                                                  | 8-15K                                                                                 | .78-625*                                                                              | 3.13-2.5K*                                                                           | 12.5-10K*                                                                             | 1-1K*                                                                                 |
| <b>LOW TORQUE</b> (for applications requiring low shear rates for low/medium viscosity fluids, an optional low torque 797-7,970 dyne•cm instrument can be ordered) |                                                                                       |                                                                                       |                                                                                       |                                                                                        |                                                                                       |                                                                                       |                                                                                       |                                                                                      |                                                                                       |                                                                                       |
| 1000+ @100rpm†                                                                                                                                                     | .2-.81                                                                                | .2-1.6                                                                                | .33-3.3                                                                               | .65-6.5                                                                                | 1.3-13                                                                                | 3.3-33                                                                                | .13-1.3                                                                               | .54-5.4                                                                              | 2.2-22                                                                                | .22-2.2                                                                               |
| 2000+ @5-1000rpm                                                                                                                                                   | .2-16                                                                                 | .2-32                                                                                 | .2-66                                                                                 | .2-130                                                                                 | .2-260                                                                                | .2-660                                                                                | .2-26                                                                                 | .2-108                                                                               | .2-440                                                                                | .2-44                                                                                 |

µL = microLiter K = 1 thousand P = poise 1 Pa•s = 10 poise N = RPM e.g. Cone CAP-01 13.3 x 10 (rpm) = 133 sec<sup>-1</sup>

\*Maximum speed recommended with this spindle is 400 rpm. Viscosity range indicated is for operation at 400 rpm. †Special speed instrument.

Note: Viscosity ranges shown above are for illustration. The exact range will depend upon instrument configuration.