



Leading viscosimetry technology

## ROTATIONAL VISCOMETERS

# Alpha series

Alpha series rotational viscometers allow fast and accurate viscosity readings. They are low budget and easy to use.

**2 YEARS WARRANTY**

## Standard Delivery

Viscometer head with serial number / Stand, 3 levelling adjustment for stand / Boss head / Standard spindles / Spindle protector / Spindle rack / Power supply cable / Calibration Certificate / Operating manual

## Extra Accessories

APM (Small Sample Adapter) / LCP (Low Viscosity Adapters) / Heldal unit (High Viscosity Adapter) / Silicon Standard Oils / Thermostatic Bath / Universal adapter for all accessories such as Brookfield (Optional) / PPR Plugging System (Optional)

**NOTE:** The material of the accessories including the temperature probe can be changed under customer specification (High Temperature Resistance).

Smart Series



Expert Series



Premium Series



4 LINES LCD DISPLAY AND KEYBOARD CONTROLS

**LANGUAGE OPTIONS:**  
English / French / German / Catalan / Spanish / Italian / Japanese / Polish / Dutch / Portuguese

**SOUND ALARM**  
Under or over range

**UNIVERSAL ADAPTER**  
All accessories such as Brookfield (Optional)

FRIENDLY USER

**AUTO RANGE**  
Display of maximum measurable limits

**DISPLAYED INFO**  
Viscosity (cP or mPa·s)  
% Torque  
Spindle  
Speed

**AUTO-TEST**  
It checks the internal function in order to make the unit ready to use



## Main Features

- > Data displayed
 

|                          |            |
|--------------------------|------------|
| Selected speed           | r.p.m      |
| Selected spindle         | SP         |
| Viscosity reading        | cP (mPa·s) |
| Percentage of full scale | %          |
- > Relative and absolute viscosity.
- > Unit converter SI to CGS.
- > AUTO-TEST with sound and visual malfunction alarm.
- > AUTO-RANGE function.
- > User-enabled calibration.
- > 10 language options.

Standard delivery: The equipment is supplied complete with standard spindles (4 spindles for L model, and 6 spindles for R and H models), viscometer stand and spindle protector.

## Technical File

- > Precision:  $\pm 1\%$  of full scale.

- > Resolution:
  - Using low viscosity adapter: 0.01
  - For lower than 10.000 viscosity cP: 0.1
  - For viscosity equal to or above 10.000 cP: 1
- > Repeatability: 0.2%
- > Supplied at 100-240 VAC, 50/60 Hz

## Spindles

AISI 316 stainless steel spindles, easily identified by number and letter when changed according to range of viscosity.

These are the standards our units follow:

- BS: 6075, 5350
- ISO: 2555, 1652
- ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716



Easy identification, on your first look at the equipment, you identify it.



Detail of the 4 lines LCD and the keyboard controls. Unit menu is clearly showed.

| Code    | Model   | Measuring Range (cP) | Speed (r.p.m.) | Number of speeds |
|---------|---------|----------------------|----------------|------------------|
| V100003 | ALPHA L | 20 - 2.000.000       | 0.3 - 100      | 18               |
| V100002 | ALPHA R | 100 - 13.000.000     | 0.3 - 100      | 18               |
| V100001 | ALPHA H | 200 - 106.000.000    | 0.3 - 100      | 18               |



Leading viscosimetry technology

## ROTATIONAL VISCOMETERS

# Smart series

Indispensable in QC and R&D laboratories.

**2 YEARS WARRANTY**

## Standard Delivery

Viscometer head with serial number / Stand, 3 levelling adjustment for stand / Boss head / Standard spindles / Spindle protector / Spindle rack / PT100 probe (optional) / Power supply cable / Datalogger software in a CD / USB cable / Carrying case / Calibration Certificate / Operating manual

**NOTE:** All parts (including the viscometer stand) find room in the Carrying case.

## Extra Accessories

APM (Small Sample Adapter) / LCP (Low Viscosity Adapters) / Haldal unit (High Viscosity Adapter) / Silicon Standard Oils / Thermostatic Bath / Universal adapter for all accessories such as Brookfield (Optional) / PPR Plugging System (Optional)

**NOTE:** The material of the accessories including the temperature probe can be changed under customer specification (High Temperature Resistance).

Alpha Series



Expert Series



Premium Series



### TOUCH KEYBOARD

Latest keyboarding technology, comfortable and easy to handle (6 keys)

### PROGRAM FEATURES

Time to Torque  
Time to Stop

### DATA DISPLAYED

Selected Speed  
Selected Spindle  
Viscosity readings (cP or mPa-s or cSt)  
Percentage of Full Scale Range (%)  
Sample Temperature (Optional, °C or °F)  
Shear rate (with coaxial spindles) (s-1)  
Shear Stress (with coaxial spindles) (N/m<sup>2</sup>)  
Density (introduced by the user)(g/cm<sup>3</sup>)

### TEMPERATURE READING

BY PT100 (Optional)

### UNIVERSAL ADAPTER

All accessories such as Brookfield (Optional)

### GRAPHIC DISPLAY

Provides huge range of graphical options

### 10 WORKING MEMORIES

Set up the unit and get it ready to be used every day choosing the memory you need

### VISCOSITY READINGS:

Absolute viscosity (cP or mPa-s)  
Apparent Viscosity (cP or mPa-s)  
Kinematic viscosity (cSt, mm<sup>2</sup>/sec)  
(Density introduced by the user)

### USB INTERFACE

Faster transfer data to the computer

### DATALOGGER SOFTWARE INCLUDED

USB allows data transfer to a Excel format



## Main Features

- > Touch key board 6 keys.
- > Direct readout on a graphic display.
- > Data displayed:
 

|                                      |                        |
|--------------------------------------|------------------------|
| Selected speed                       | r.p.m.                 |
| Selected spindle                     | SP                     |
| Viscosity reading                    | cP (mPa·s) or cSt      |
| Percentage of full scale             | %                      |
| Sample temperature                   | °C or °F (Optional)    |
| Shear Rate (with coaxial spindles)   | SR (s <sup>-1</sup> )  |
| Shear Stress (with coaxial spindles) | SS (N/m <sup>2</sup> ) |
| Density (introduced by the user)     | g/cm <sup>3</sup>      |
- > Viscosity reading: dynamic viscosity (cP or mPa·s) or kinematics viscosity (cSt).
- > Unit converter SI to CGS.
- > Program features:
  - Time to torque: target torque pre-setting device.
  - Time to stop: target time pre-setting device.
  - 10 working memories.
- > AUTO-TEST with sound and visual malfunction alarm.
- > AUTO-RANGE function.
- > Temperature reading by PT100 (optional).
- > User-enabled viscosity and temperature (optional) calibration.
- > 10 language options.
- > Interface: USB.
- > Datalogger Software: USB allows data transfer to a PC Excel format.

Standard delivery: The equipment is supplied complete with standard spindles (4 spindles for L model, and 6 spindles for R and H models), viscometer stand and spindle protector, carrying case, USB cable and Datalogger Software.

| Code    | Model   | Measuring Range (cP) | Speed (r.p.m.) | Number of speeds |
|---------|---------|----------------------|----------------|------------------|
| V200003 | SMART L | 20 - 2.000.000       | 0.3 - 100      | 18               |
| V200002 | SMART R | 100 - 13.000.000     | 0.3 - 100      | 18               |
| V200001 | SMART H | 200 - 106.000.000    | 0.3 - 100      | 18               |

## Technical File

- > Precision: ± 1% of full scale
  - > Resolution:
    - With low viscosity adapter: 0.01
    - For lower than 10.000 viscosity cP: 0.1
    - For viscosity equal to or above 10.000 cP: 1
  - > Repeatability: 0.2%
  - > Thermometer features:
    - Temperature margins: 0°C to +100°C
    - 32°F to 212.0 °F
- Resolution: 0.1°C / 0.1722 °F  
 Precision: +/- 0.1 °C  
 Type of probe: PT100  
 > Supplied at 100-240 VAC, 50/60 Hz

## Spindles

AISI 316 stainless steel spindles, easily identified by number and letter when changed according to range of viscosity.

These are the standards our units follow:

- BS: 6075, 5350
- ISO: 2555, 1652
- ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716



Rear view to the viscometer showing the new USB interface that provides a faster transfer of data to the computer.



Easy identification, on your first look at the equipment, you identify it.



Front view of the viscometer, touch keyboard with 6 keys and graphic display.

| DATALOGGER downloaded data           |                   |             |
|--------------------------------------|-------------------|-------------|
| Visco Serial Number:                 | PREL400009        |             |
| Spindle:                             | L2                |             |
| Date:                                | 20/01/2010        |             |
| Init acquisition time:               | 17:43:11          |             |
| End acquisition time:                | 17:44:05          |             |
| Time increment between measurements: | 00:00:01          |             |
| Density:                             | 1.000000          |             |
| RPM:                                 | 50.000000         |             |
| Viscosity units:                     | centiPoise        |             |
| Temperature units:                   | °C                |             |
| Density units:                       | g/cm <sup>3</sup> |             |
| Viscosity                            | % EOS             | Temperature |
| 457.903527                           | 76.3333664        | NO PROBE    |
| 466.417084                           | 77.5883672        | NO PROBE    |
| 466.96521                            | 77.8441391        | 23.0245705  |
| 466.96521                            | 77.8441391        | 23.0245705  |

## DATALOGGER SOFTWARE

Let the viscometer gather measurement data and store them in its internal memory (set these options when configuring a measurement with the keypad). More than 10,000 data points can thus be stored inside the viscometer. Then use this software to export the stored data as Microsoft EXCEL format. (No computer skills needed).





## Leading viscosimetry technology

### ROTATIONAL VISCOMETERS

# Expert series

Add essential performances to determine viscosity and other rheological features to homogenous samples.

**2 YEARS WARRANTY**

## Standard Delivery

Viscometer head with serial number / Stand, 3 levelling adjustment for stand / Boss head / Standard spindles / Spindle protector / Spindle rack / PT100 probe / Power supply cable / Datalogger software in CD / USB cable / Carrying case / Calibration Certificate / Operating manual

**NOTE:** All parts (including the viscometer stand) find room in the Carrying case.

## Extra Accessories

APM (Small Sample Adapter) / LCP (Low Viscosity Adapters) / Heldal unit (High Viscosity Adapter) / Silicon Standard Oils / Thermostatic Bath / Universal adapter for all accesories such as Brookfield (Optional) / PPR Plugging System (Optional)

**NOTE:** The material of the accessories including the temperature probe can be changed under customer specification (High Temperature Resistance).

Alpha Series



Smart Series



Premium Series



**TOUCH KEYBOARD** ◀  
Latest keyboarding technology, comfortable and easy to handle (12 Keys)

**PROGRAM FEATURES** ◀  
Time to torque  
Time to stop  
10 working memories  
Customizable option (54 Speeds)  
Programmable: Multistep/Ramp  
Unit Converter (IS or CGS)

**VISCOSITY READINGS** ◀  
Absolute viscosity (cP or mPa·s)  
Apparent Viscosity (cP or mPa·s)  
Kinematic viscosity (cSt, mm<sup>2</sup>/sec)  
(Density introduced by the user)

**AUTO-TEST** ◀  
It checks the internal function in order to make the unit ready to use

**UNIVERSAL ADAPTER** ◀  
All accessories such as Brookfield (Optional)



▶ **GRAPHIC DISPLAY**  
Provides huge range of graphical options

▶ **10 WORKING MEMORIES**  
Set up the unit and get it ready to be used every day choosing the memory you need

▶ **USB INTERFACE**  
Faster transfer data to the computer

▶ **DATA DISPLAYED**  
Selected Speed  
Selected Spindle  
Viscosity readings (cP or mPa·s or cSt)  
Percentage of Full Scale Range (%)  
Sample Temperature (°C or °F)  
Shear rate (with coaxial spindles) (s-1)  
Shear Stress (with coaxial spindles) (N/m<sup>2</sup>)  
Density (introduced by the user) (g/cm<sup>3</sup>)

▶ **DATALOGGER SOFTWARE INCLUDED**  
USB allows data transfer to a Excel format

## Main Features

- > Touch key board 12 keys.
- > Direct readout on a graphic display.
- > Data displayed:
 

|                                      |                        |
|--------------------------------------|------------------------|
| Selected speed                       | r.p.m.                 |
| Selected spindle                     | SP                     |
| Viscosity reading                    | cP (mPa·s) or cSt      |
| Percentage of full scale             | %                      |
| Sample temperature                   | °C or °F               |
| Shear Rate (with coaxial spindles)   | SR (s <sup>-1</sup> )  |
| Shear Stress (with coaxial spindles) | SS (N/m <sup>2</sup> ) |
| Density (introduced by the user)     | g/cm <sup>3</sup>      |
- > Viscosity reading: dynamic viscosity (cP or mPa·s) or kinematics viscosity (cSt).
- > Unit converter SI to CGS.
- > Program features:
  - Time to torque: target torque pre-setting device.
  - Time to stop: target time pre-setting device.
  - 10 working memories.
  - Customizable Options.
  - Programmable.
  - Multistep.
  - Ramp.
- > AUTO-TEST with sound and visual malfunction alarm.
- > AUTO-RANGE function.
- > Temperature reading by PT100.
- > User-enabled viscosity and temperature calibration.
- > 10 language options.
- > Interface: USB.
- > Datalogger Software: USB allows data transfer to a PC Excel format.

Standard delivery: The equipment is supplied complete with standard spindles (4 spindles for L model, and 6 spindles for R and H models),

| Code    | Model    | Measuring Range (cP) | Speed (r.p.m.) | Number of speeds |
|---------|----------|----------------------|----------------|------------------|
| V300003 | EXPERT L | 20 - 6.000.000       | 0.01 - 200     | 54               |
| V300002 | EXPERT R | 100 - 40.000.000     | 0.01 - 200     | 54               |
| V300001 | EXPERT H | 200 - 106.000.000    | 0.01 - 200     | 54               |

viscometer stand and spindle protector, carrying case, USB cable and Datalogger Software.

## Technical File

- > Precision: ± 1% of full scale
- > Resolution:
  - With low viscosity adapter: 0.01
  - For lower than 10.000 viscosity cP: 0.1
  - For viscosity equal to or above 10.000 cP: 1
- > Repeatability: 0.2%
- > Thermometer features:
  - Temperature margins: 0°C to +100°C
  - 32°F to 212.0 °F
- Resolution: 0.1°C / 0.1722 °F
- Precision: +/- 0.1 °C
- Type of probe: PT100
- > Supplied at 100-240 VAC, 50/60 Hz

## Spindles

AISI 316 stainless steel spindles, easily identified by number and letter when changed according to range of viscosity.

These are the standards our units follow:

- BS: 6075, 5350
- ISO: 2555, 1652
- ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716



Easy identification, on your first look at the equipment, you identify it.



PT100 temperature probe is suitable adjusted by a clip which is attached to the spindle protector.



Front view of the viscometer, touch keyboard with 12 keys and graphic display.

| DATALOGGER downloaded data           |                       |
|--------------------------------------|-----------------------|
| Visco Serial Number:                 | PREL400009            |
| Spindle:                             | L2                    |
| Date:                                | 20/01/2010            |
| Init acquisition time:               | 17:43:11              |
| End acquisition time:                | 17:44:05              |
| Time increment between measurements: | 00:00:01              |
| Density:                             | 1.000000              |
| RPM:                                 | 50.000000             |
| Viscosity units:                     | centiPoise            |
| Temperature units:                   | °C                    |
| Density units:                       | g/cm3                 |
| Viscosity                            | % EOS Temperature     |
| 457.902527                           | 76.3333664 NO PROBE   |
| 465.417084                           | 77.5960672 NO PROBE   |
| 466.96521                            | 77.8441391 23.0245705 |
| 466.96521                            | 77.8441391 23.0245705 |

## DATALOGGER SOFTWARE

Let the viscometer gather measurement data and store them in its internal memory (set these options when configuring a measurement with the keypad). More than 10,000 data points can thus be stored inside the viscometer. Then use this software to export the stored data as Microsoft EXCEL format. (No computer skills needed).



Leading viscosimetry technology

## ROTATIONAL VISCOMETERS

# Premium series

Viscometer monitored by our Supervisc software, offer a wide and unique range of rheological applications.

**2 YEARS WARRANTY**

## Standard Delivery

Viscometer head with serial number / Stand, 3 levelling adjustment for stand / Boss head / Standard spindles / Spindle protector / Spindle rack / PT100 probe / Power supply cable / Datalogger software in a CD / USB cable / Carrying case / Calibration Certificate / Operating manual

**NOTE:** All parts (including the viscometer stand) find room in the Carrying case.

## Extra Accessories

APM (Small Sample Adapter) / LCP (Low Viscosity Adapters) / Heldal unit (High Viscosity Adapter) / Silicon Standard Oils / Thermostatic Bath / Universal adapter for all accessories such as Brookfield (Optional) / PPR Plugging System (Optional)

**NOTE:** The material of the accessories including the temperature probe can be changed under customer specification (High Temperature Resistance).

Alpha Series



Smart Series



Expert Series



### TOUCH KEYBOARD

Latest keyboarding technology, comfortable and easy to handle (12 Keys)

### PROGRAM FEATURES

Time to torque  
Time to stop  
10 working memories  
Customizable option (Speeds)  
Programmable: Multistep/Ramp  
Unit Converter (IS or CGS)

### SPECIAL FEATURES

Graphic mode allows to analyze & visualize characteristics of the flow curves / 2600 Speeds to measure wide range of viscosity samples / Bidirectional USB interface

### USB INTERFACE

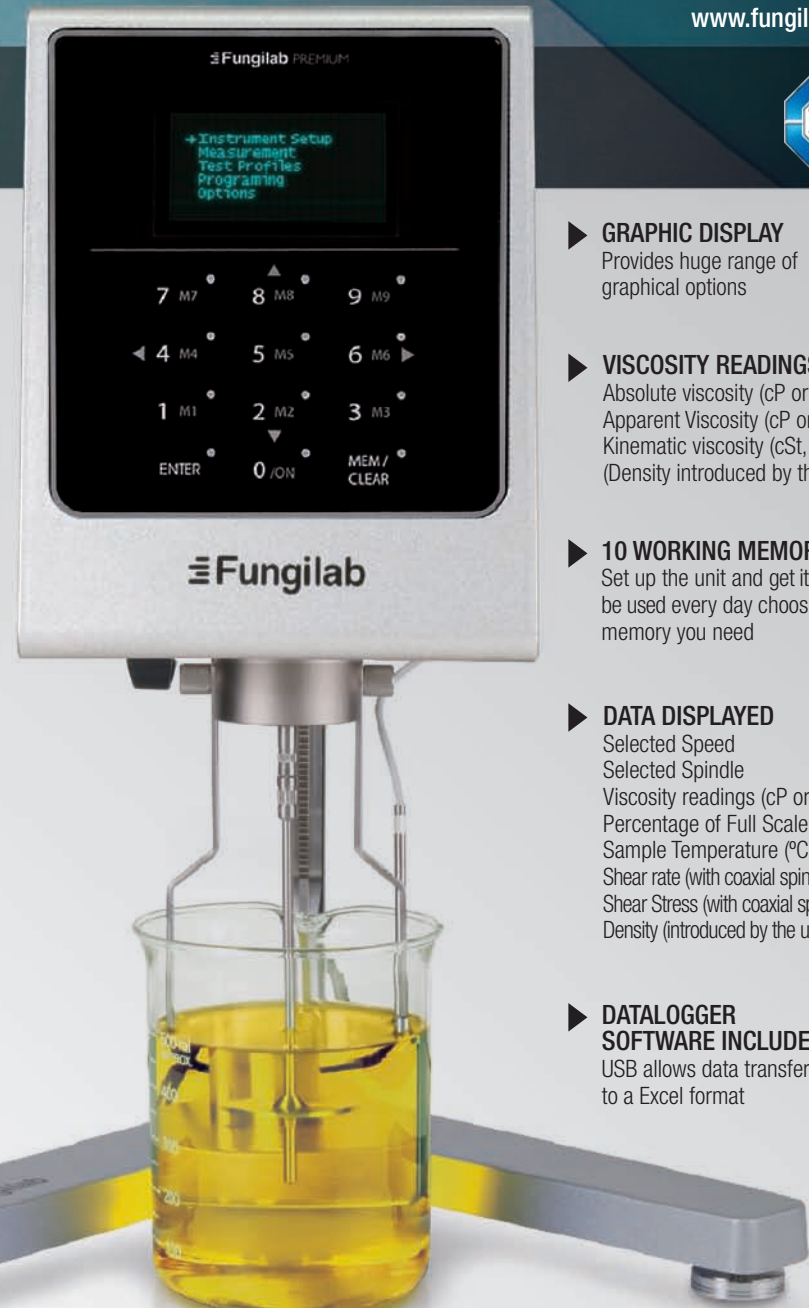
Faster transfer data to the computer

### AUTO-TEST

It checks the internal function in order to make the unit ready to use

### UNIVERSAL ADAPTER

All accessories such as Brookfield (Optional)



### GRAPHIC DISPLAY

Provides huge range of graphical options

### VISCOSITY READINGS

Absolute viscosity (cP or mPa·s)  
Apparent Viscosity (cP or mPa·s)  
Kinematic viscosity (cSt, mm<sup>2</sup>/sec)  
(Density introduced by the user)

### 10 WORKING MEMORIES

Set up the unit and get it ready to be used every day choosing the memory you need

### DATA DISPLAYED

Selected Speed  
Selected Spindle  
Viscosity readings (cP or mPa·s or cSt)  
Percentage of Full Scale Range (%)  
Sample Temperature (°C or °F)  
Shear rate (with coaxial spindles) (s<sup>-1</sup>)  
Shear Stress (with coaxial spindles) (N/m<sup>2</sup>)  
Density (introduced by the user) (g/cm<sup>3</sup>)

### DATALOGGER SOFTWARE INCLUDED

USB allows data transfer to a Excel format



## Main Features

- > Touch key board 12 keys.
- > Direct readout on a graphic display.
- > Data displayed:
 

|                                      |                        |
|--------------------------------------|------------------------|
| Selected speed                       | r.p.m.                 |
| Selected spindle                     | SP                     |
| Viscosity reading                    | cP (mPa·s) or cSt      |
| Percentage of full scale             | %                      |
| Sample temperature                   | °C or °F               |
| Shear Rate (with coaxial spindles)   | SR (s-1)               |
| Shear Stress (with coaxial spindles) | SS (N/m <sup>2</sup> ) |
| Density (introduced by the user)     | g/cm <sup>3</sup>      |
- > Step Program Status
  - Analyze & visual characteristics (flow curves)
- > Viscosity reading: dynamic viscosity (cP or mPa·s) or kinematics viscosity (cSt).
- > Program features:
  - Time to torque: target torque pre-setting device.
  - Time to stop: target time pre-setting device.
  - 10 working memories.
  - Customizable Options.
  - Programmable.
  - Multistep.
  - Ramp.
- > AUTO-TEST with sound and visual malfunction alarm.
- > AUTO-RANGE function.
- > Temperature reading by PT100.
- > User-enabled viscosity and temperature calibration.
- > 10 language options.

Standard delivery: The equipment is supplied complete with standard spindles (4 spindles for L model, and 6 spindles for R and H models),

| Code    | Model     | Measuring Range (cP) | Speed (r.p.m.) | Number of speeds |
|---------|-----------|----------------------|----------------|------------------|
| V400003 | PREMIUM L | 20 - 6.000.000       | 0.01 - 250     | 2,600            |
| V400002 | PREMIUM R | 100 - 40.000.000     | 0.01 - 250     | 2,600            |
| V400001 | PREMIUM H | 200 - 106.000.000    | 0.01 - 250     | 2,600            |

viscometer stand and spindle protector, carrying case, USB cable and Datalogger Software.

## Technical File

- > Precision: ± 1% of full scale
- > Resolution:
  - With low viscosity adapter: 0.01
  - For lower than 10.000 viscosity cP: 0.1
  - For viscosity equal to or above 10.000 cP: 1
- > Repeatability: 0.2%
- > Thermometer features:
  - Temperature margins: 0°C to +100°C
  - 32°F to 212.0 °F

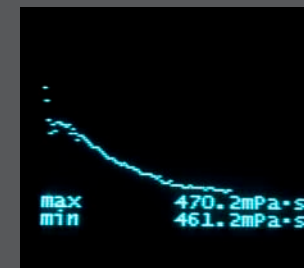
- Resolution: 0.1°C / 0.1722 °F
- Precision: +/- 0.1 °C
- Type of probe: PT100
- > Supplied at 100-240 VAC, 50/60 Hz

## Spindles

AISI 316 stainless steel spindles, easily identified by number and letter when changed according to range of viscosity.

These are the standards our units follow:

- BS: 6075, 5350
- ISO: 2555, 1652
- ASTM: 115, 789, 1076, 1084, 1286, 1417, 1439, 1638, 1824, 2196, 2336, 2364, 2393, 2556, 2669, 2849, 2983, 2994, 3232, 3236, 3716



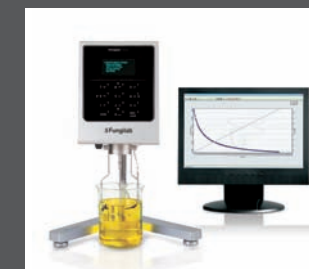
See in detail the new graphic display showing the flow curve using the graphic mode program.



Easy identification, on your first look at the equipment, you identify it.



- See the program options in detail:
- > TTT & TTS
  - > Speed settings
  - > Multistep
  - > Ramp



## SUPERVISIC

Provides instantaneous viscosity flows curves. Up to four data sets may be plotted simultaneously. Math modelling for yield stress calculations (Bingham Plastic, Casson, Power Law, IPC Paste analysis). More than 12 viscosity plots can be configured. Offers very easy graphic presentation of data and stores the data in a Microsoft Access database.





## Viscoball

The Viscoball measures accurately the viscosity of transparent Newtonian liquids and gases (with a special glass ball).

### 2 YEARS WARRANTY

### Standard Delivery

Set of 6 balls / Control thermometer (-1° a 26°) / Cleaning tools / Calibration sheet / User manual

### Extra Accessories

Circulating temperature bath / Viscosity standard fluids for calibration / Special temperature probes

Changeable angle



Fixed angle



**NEW** ◀  
**CHANGEABLE ANGLE**

**FIXED ANGLE** ◀  
Complies with  
DIN 53015 / ISO 12058

**KIT OF 6 BALLS** ◀  
Wide viscosity range covered

**FAST AND HANDY TUBE** ◀

▶ **SIMPLE THERMOSTATIC**  
Measuring with easy connection to our thermovisc series.

▶ **VISCOSITY READINGS**  
Dynamic (cP or mPa·s)  
Kinematic (cSt)

▶ **REPRODUCIBILITY: 0.5%**  
**COMPARABILITY: 1%**

▶ **VISCOSITY RANGE**  
0.5 - 10<sup>6</sup> mPa·s (cP)  
(Fixed Angle Unit)



Fungilab

## Main Features

- > High accuracy through improved visibility of falling ball.
- > Minimized test time due to accurate return run of the ball.
- > Reduced cost of ownership through increased life time of falling tube.
- > Extended re-calibration periods through improved bearing support.

The VISCO BALL viscometer is mainly used for low viscosity substances such as used in:

- > Mineral oil industry (oils, liquid hydrocarbons, ...).
- > Food industry (sugar solution, honey, beer, milk, gelatine, fruit juice, ...).
- > Chemical industry (polymer solutions, solvents, resin solutions, latex dispersions, adhesive solutions, ...).
- > Cosmetic/Pharmaceutical industry (raw materials, glycerine, emulsions, suspensions, solutions, extracts, ...).
- > Petroleum industry (light crude, machine oil, crude petroleum,...).
- > Fuels (petrol, diesel oil, paraffin, ...).
- > Paper industry (emulsions, pigment dispersion, paper additives, ...).
- > Paints and varnishes (printing inks, varnishes, water lacquers, inks,...).
- > Detergents (liquid washing agents, washing-up liquids, tenside solutions,...).

## Measuring principle

The rolling and sliding movements of a ball through the sample liquid are timed in an inclined cylindrical measuring tube. The sample viscosity is correlated to the time a ball requires to traverse a definite distance. By turning the measuring tube upside down again the return of the ball may also be used for an additional measurement applying the return constant. The test results are given as dynamic viscosity in the internationally standardized, absolute units of mPa·s.

## Technical data

- > Viscosity range 0.5-105 mPas·s (cP)
- > Temperature range -20°C up to +120°C
- > Reproducibility Better than 0.5%
- > Comparability Better than 1%

## > Materials

- Balls 1,2 and G, Borosilicate glass
- Balls 3 and 4, Nickel iron alloy
- Balls 5 and 6, stainless steel

The instrument is supplied with 6 balls, control thermometer (-1 to +26°C) cleaning tools, calibration sheet and instruction manual.

## > On request:

- Glass thermometer for different temperature ranges
    - V91002 Glass thermometer +24 to +51 °C, div. 0.1 °C
    - V91003 Glass thermometer +49 to +76 °C, div. 0.1 °C
    - V91004 Glass thermometer +74 to +101 °C, div. 0.1 °C
    - V91005 Glass thermometer +99 to +126 °C, div. 0.1 °C
  - V91107 Ball G for gas measurements
- Standard oils of different viscosities are available for calibration.

Complies with DIN 53015 / ISO 12058

## Measuring Range

| Ball | n° Viscosity range (mPa·s) |
|------|----------------------------|
| 1    | 0.6 to 10                  |
| 2    | 7 to 130                   |
| 3    | 30 to 700                  |
| 4    | 200 to 4,800               |
| 5    | 1,500 to 45,000            |
| 6    | > 7,500                    |



Kit of 6 balls supplied in the case.



Glass Thermometer detail included in the standard delivery.



Cleaning tool detail is also added in the standard delivery.



Pincers to grab up the balls after the set is used.