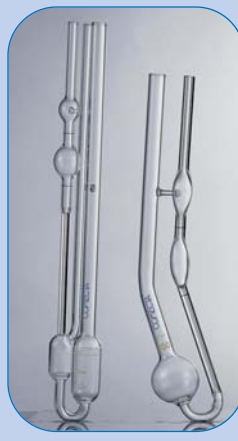




ROTARY VISCOMETERS



FLOW CUPS



GLASS VISCOMETERS



MONITOR AND CONTROL



GLASS THERMOMETERS



REACTORS



LABORATORY FUME CUPBOARDS

**Laboratory fume cupboards**

**Vertical laminar flow cabinets**

**Rotary viscometers**

**Flow cups for measuring liquid viscosity**

**Viscometer precision bath**

**Glass viscometers**

**Monitor and control apparatus**

**Glass thermometers**

**Laboratory reactors**

**Filters**

**Analytical consumables**

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**Viscometers, Monitor and control, safety, Consumables.**

*"True knowledge is rigorous and hard on itself. At the same time is amiable and tolerant."*  
Plutarco

**SAFETY: DESIGNED AND BUILT MEETING EUROPEAN STANDARD UNE-EN 14175-2**

## COMMON FEATURES

Antiacid continuous ceramic worktop with anti-dumping peripheral rim and evacuation sink.

Inner working chamber built in thermo stable compact resins, antiacids and anti-moisture. M1 fire resistance.

Extraction system with perfectly balanced injected polypropylene turbine. Coupled and protected engine outside the fumes way.

Vertical guillotine door with adjustable height in any position and three sections of 3 + 3mm laminated glass slide which creates a high resistance protection shield.

Self-supporting structure, made of structural elements with 2 mm steel tube, degreased, phosphated and coated with a 70 µ layer of epoxy paint vitrified in the oven. This structure is completely isolated from the working cabin and from the gases contact.

External cover in white melamine board or thermo stable resins in high humidity environments.

## ASSEMBLY SYSTEM INTO TWO BODIES

**Upper body** with cabinet and embedded extractor.

**Lower body** with a structure, ceramic worktop and remote control panel for fluids and gases in an horizontal housing.

**Optional:** working system (Walking) at ground level for the input and working with machinery, reactors and organic synthesis appliances. (Request information).

## TECHNICAL FEATURES

Lighting level: More than 500 Lux in working area IP 55 or ATEX\*.

Extraction volume: from 420 to 4,500 m<sup>3</sup>/h.

Engines: from 0,75 to 2 CV - IP55 or ATEX\*.

Voltage: 220V/50Hz. Single phase / three phase.

\*ATEX: if we work with flammable, solvents or hydrocarbons.

**On request:** Automatic control unit for variable flow (motor) depending on door's opening. Failure alarm.

**On request:** Perimeter and ceiling in continuous tiles, for working with sulfuric acid.

**On request:** Perimeter and ceiling in continuous tiles, for working with perchloric acid. It comes with gas washing.

## CONTROL PANEL

ON / OFF push button with green LED and electrical sockets 230V/16A.

Fuel regulator knob (Yellow).

Nitrogen regulator knob (Blue/ green button).

Vacuum regulator knob (Grey/ black button).

Air regulator knob (Blue/ yellow button).

Water regulator knob (Green/ blue button)

Safety locking pin on door for recommended working position.



Can be supplied with custom measurements on demand.

MODELS	Part No.	Height / Weight / Depth Upper body (exterior) cm			Height / Weight / Depth Lower body (exterior) cm			Height / Weight / Depth Upper body (inner) cm			Height / Weight / Depth Lower body (inner) cm			Upper Weight Kg	Lower Weight Kg
		Height	Weight	Depth	Height	Weight	Depth	Height	Weight	Depth	Height	Weight	Depth		
VG-BS-1200	5001613	170	122	90	90	122	90	120	96	62	72	96	55	124	84
VG-BS-1420	5001614	170	142	90	90	142	90	120	116	62	72	116	55	162	116
VG-BS-1720	5001615	170	172	90	90	172	90	120	146	62	72	146	55	200	148
VG-BS-2002	5001616	170	202	90	90	202	90	120	176	62	72	176	55	238	180

## ACCESSORIES

### PVC Tubes

Part No.	Type	Ø / Length cm
5001617	Rigide	20 200
5001618	Rigide	25 200
5001619	Flexible	20 100
5001620	Flexible	25 100

### PVC Elbow joint

Part No.	Ø / Degrees
5001621	20 45°
5001622	25 45°
5001623	20 90°
5001624	25 90°

### Safety cabinets

Part No.	Acids & base	Flammables	Doors
5001625	Yes	No	1
5001626	Yes	No	2
5001627	No	Yes	1
5001628	No	Yes	2

**SAFETY:**

US STANDARD ST 209 (CLASS 100)  
EUROPEAN STANDARD ISO 14644 (CLASS 5) HEPA FILTER (HIGH EFFICIENCY PARTICULATE AIR)

**APPLICATIONS**

Water quality control, laboratories and food industries, pharmacies services, haematology and clinical analysis, drug-injecting antibiotics, microscopic analysis, assisted fertilization, cell cultures, etc...

**FEATURES**

- Lower setting made of PMMA transparent methacrylate.
- Working surface made of stainless steel AISI 304.
- Ultraviolet lamp.
- Metallic parts coated with protective polymerization.
- Extraction system with silent turbine.
- Operating hours counter for HEPA filter replacement.

**TECHNICAL SPECIFICATIONS**

- Illumination level (W-Lux): 500.
- Airflow speed (M/S): 0.7 - 1.0.
- Noise level (dB): < 67.
- Power supply (V-Hz): 220/50.
- HEPA filter class H14: 99,999% efficiency for particles of 0.5 microns. Working temperature in °C: between 15 and 35.

**CONTROL PANEL**

**TFT touch screen**

- Stop/start push button.
- Light push button.
- Sterilization push button.
- Ventilation push button.
- Operating hours counter push button.



**NEW**

MODELS	Part No.	Height / Width / Depth (exterior) cm	Height / Width / Depth (interior) cm	Fluorescent Lamp (W)	UV lamp W	Power W	Weight Kg
H1	5609511	55 46 78	54 38 40	15x1	15x1	150	40
H2	5609510	70 55 90	68 45 50	18x1	18x1	160	60

**ACCESSORIES Supporting tables for cabinets**

FOR MODEL	Part No.	Height / Width / Depth (exterior) cm	Weight Kg
H1	5609512	78 55 47	5
H2	5609513	78 70 55	8



# Shoe soles coater “ZA-1”

AUTOMATIC.  
DIGITAL TEMPERATURE CONTROL OF AIR.

**FEATURES**

- Shoe soles coated with a PVC film.
- It cuts the film by thermal contraction providing hot air with temperature control.
- Different sizes shoes coated in seconds.
- It saves on consumables. A roll of film can be coated up to 1000 shoes.
- According with CE and ROHS regulations. Consumables 100% recyclable.

**MODEL**

Part No.	Dimensions cm Height / Width / Depth	Voltage	Power W	Weight Kg
5000051	33 45 80	220V-50Hz	1300	27



**NEW**

**SPARE PARTS**

PVC coil for 1000 coatings.  
Part No. 5000052





# Rotary Viscometers

## Rotary viscosimeters "ST-2020"

### INTRODUCTION

Rheology is the study of the effects experimented in a substance when a mechanical force is applied on it (flow and deformation) under different external conditions. It is used to describe the consistency of different products and is normally defined by the components: **viscosity and elasticity**.

Measuring viscosity is determined by the tangible force required to displace the materials particles with a specific deformation-flow i.e. velocity. The relationship between the tangible force and the deformation flow obtains the viscosity result. Ambient conditions such as temperature and pressure also have an effect on viscosity. The measurement of viscosity is not just limited to the research laboratory, it has progressively entered the field of industrial quality control.

### PRINCIPLES OF VISCOSITY

These instruments operate by means of a cylinder or disk (spindle) that is submerged into the material to be analysed and by measuring the resistance of the substance at a selected known speed. This resistance results is the measurement of the viscosity according to the flow characteristics of the reference spindle; the instrument calculates the result and directly displays the viscosity that is reported in **cP (CGS) or mPa-s (SI)**.

A wide range of viscosity can be measured using viscometers that are equipped with different types of spindles and speed ranges. The design of the spindles and the principles of measurement principles are regulated by **ISO 2555** and **ISO 1652** standards. All spindles are made of AISI 316 stainless steel. Each spindle can be identified by a letter and a number.

### SELECTION TABLE

#### Standard measuring range of the viscometers, without additional accessories

Part no	<b>1001616</b>	<b>1001617</b>
Model	<b>ST-2020 L</b>	<b>ST-2020 R</b>
Units	<b>centiPoise (cP)</b>	<b>centiPoise (cP)</b>
Standard spindle	<b>L1 to L4</b>	<b>R2 to R7</b>
Speed range r.p.m.	<b>1 to 60</b>	<b>0,1 to 100</b>
Measuring range	<b>20 to 600.000 cP</b>	<b>20 to 40.000.000 cP</b>
Temperature range °C	<b>0,0 a 100,0</b>	<b>0,0 a 100,0</b>
Power requirement	<b>115/230V to 12VDC 1.2A</b>	<b>115/230V to 12VDC 1.2A</b>
Power	<b>15 W</b>	<b>15 W</b>
Weight	<b>5 Kg</b>	<b>5 Kg</b>

### FEATURES

L.C.D. display of parameters and results:

- Selected speed ..... r.p.m.
- Selected spindle. .... S.P.
- Viscosity result ..... cP (mPa-s) or cSt.
- Base scale percentage ..... %.
- Sample temperature: ..... °C or °F.

Auto alarm in the case of any fault being detected.

Off scale detection and indication by an audible and visual signal.

Step controlled speed to prevent spindle vibrations.

Velocity from 0,1 to 100 r.p.m.

Mains power surge protection.

RS 232 unidirectional interface, download to a computer.

### TECHNICAL DATA

Precision: ±1% base scale.

Repeatability: 0.2%.

Supplied complete with:

- Anti shock carry case.
- Main unit.
- Support base.
- Spindle protector.
- Spindle support.
- Set of spindles (model dependant)
- Temperature probe

### DIGITAL THERMOMETER

Temp range:- from 0.0 °C to + 100.0 °C (+ 32.0 °F to + 212.0 °F).

- Resolution: 0.1 °C (0.1722 °F).

- Precision: ± 0.1 °C.



Model ST2020L

### ACCESSORIES

Standard **spindles** for L model.

L1 Part No. **1000998**

L2 Part No. **1000999**

L3 Part No. **1001000**

L4 Part No. **1001001**

Standard **spindles** for R model.

R1 Part No. **1000995** (for low viscosity samples)

R2 Part No. **1001030**

R3 Part No. **1001031**

R4 Part No. **1001032**

R5 Part No. **1001033**

R6 Part No. **1001034**

R7 Part No. **1001035**



Rack of standard spindles L1, L2, L3, L4 : Suitable for models L.



Rack of standard spindles R2, R3, R4, R5, R6 and R7: Suitable for model R.



Spindle R1





# Wide range rotary viscosimeters “STS-2011”

MODEL WITH TEMPERATURE READOUT AND SHEAR RATE MEASUREMENT.

## FEATURES

10 different options of language.  
 L.C.D. display of parameters and results.  
 Parameters display:  
 - Selected speed ..... r.p.m.  
 - Selected spindle  
 - Viscosity result ..... cP (mPa-s) or cSt  
 - Base scale percentage ..... %  
 - Sample temperature: ..... °C or °F  
 - Deformation ratio (with special spindle)  
 - Torsion force (with special spindles)  
 - Density  
 (input by the user) ..... g/cm<sup>3</sup>.  
 This instrument determines both relative and absolute viscosity.  
 Data can be changed between S.I. and C.G.S.  
 Automatically checks for correct operation point by scanning at different speeds.  
 Auto alarm in the case of any fault being detected.  
 Off scale detection and indication by an audible and visual signal.  
 Step controlled speed to prevent spindle vibrations.  
 Calibration by the user himself.  
 18 preselected speeds from 0.3 a 100 r.p.m.  
 The operator can select any speed within this range.  
 USB port.

Mains power surge protection.  
 10 memoirs of working programs.

## TECHNICAL DATA

Temperature range:- from 0.0 °C to + 100.0 °C  
 (+ 32.0 °F to + 212.0 °F).  
 - Resolution °C: 0.1 °C (0.1722 °F).  
 - Precision °C: ± 0.1 °C.  
 - Probe type: Pt 100.  
 Direct results in cP (mPa-s) or cSt.: models STS-2011 L & R.  
 Direct results in Poise (Pa-s) or St.: model STS-2011 H.  
 Precision: ±1% base scale.  
 Supplied complete with:  
 - Anti shock carry case.  
 - Main unit.  
 - Support base.  
 - Spindle protector.  
 - Spindle support.  
 - Set of spindles (model dependant) (see table).



MODELS	Part No.	Measuring range	Standard spindles	Power requirement	Power W	Weight Kg
STS-2011 L	1001611	20 to 2.000.000 cP	L1, L2, L3, L4	100-240 V 50/60 Hz	15	5
STS-2011 R	1001612	100 to 13.000.000 cP	R2, R3, R4, R5, R6, R7	100-240 V 50/60 Hz	15	5
STS-2011 H	1001613	200 to 106.000.000 cP	R2, R3, R4, R5, R6, R7	100-240 V 50/60 Hz	15	5

## ACCESSORIES

Standard **spindles** for L model.

- L1 Part No. **1001036**
- L2 Part No. **1001037**
- L3 Part No. **1001038**
- L4 Part No. **1001039**

Standard **spindles** for R and H model.

- R1 Part No. **1000990** (for low viscosity samples)
- R2 Part No. **1001070**
- R3 Part No. **1001071**
- R4 Part No. **1001072**
- R5 Part No. **1001073**
- R6 Part No. **1001074**
- R7 Part No. **1001075**

**Small sample volume adapters (APM).**

Suitable for sample volumes from 8 to 13 ml.  
 Requires the “TL” or “TR” set of spindles.  
 Unit suitable for temperatures from 0 °C to +100 °C.  
 Part No. **1000986** Small sample adapter APM with water jacket.  
 Part No. **1001623** Temperature sensor suitable for APM.

**Special Spindles**

- Part No. **1001224** set of spindles TL5 – TL6- TL7 for models L.
- Part No. **1001225** set of spindles TR8 - TR9 - TR10 - TR11 for models R and H.

**Low viscosity adapters. (LCP).**

Required if low viscosity measurements are necessary.  
 Reproducible results and measurements of viscosity from 1 cP.  
 Suitable for models L and R.  
 Sample volume: 16 to 18 ml.  
 Includes special spindle LCP.  
 Part No. **1000985**. Adapter LCP with water jacket.  
 Part No. **1001624** Temperature sensor suitable for LCP.



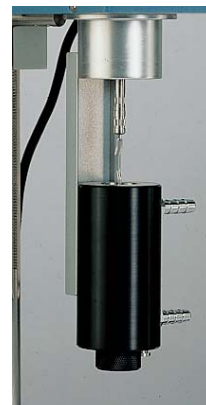
Spindle R1

**Displacement spiral helix adapter.**

Required for low fluidity samples.  
 Part No. **1000988**



Part No. **1000985**



Part No. **1000986**



Part No. **1000988**



## Temperature control equipment for viscosity measurements for viscometers “ST-2020” and “STS-2011”

The influence of temperature while measuring viscosity is considerable, lower temperatures increase viscosity. Therefore it is indispensable to control temperature when precise viscosity measurements are required. The control of temperature by using a thermostatically controlled bath is the most efficient, because of the re-circulation of liquid produces a rapid and stable temperature.

We recommend our range of immersion thermostats for this application.

### TEMPERATURE CONTROL AND CONFIGURATION FOR VISCOSITY MEASUREMENTS:

**FRIGITERM-TFT-10** Part No. **3000546**, **FRIGITERM-TFT-30** Part No. **3000547** Suitable for below ambient working environments (see page 103 for specifications).

For temperatures above ambient see the **DIGITERM-S-150** Part No. **3000543**, or **DIGITEM-TFT-200** Part No. **3000544** complete with 12 litre tank Part No **6000391**, (see pages 101 and 102 for specifications).

An adapter kit for the thermostat bath is required:

Part No. **1001625** for STS-2011

Part No. **1001626** for ST-2020

Adapter for thermostat bath comprising of an extension spindle and 4 leg adjusters for the bath. (Kit can be fitted by the user.)

This kit adjusts the bath measuring height to enable samples to be placed inside.

Part No. **1001627**. Support for 2 500 ml beakers, to be placed inside the bath.

Part No. **1001628** Support base for the **DIGITERM** immersion thermostats. This accessory is recommended to close the bath and maintain a constant temperature.

### CONSTANT TEMPERATURE CONTROL ACCESSORY FOR SMALL SAMPLE VOLUME ADAPTERS. USE WITH THE RE-CIRCULATING JACKET ACCESSORIES. PART NO. 1000996

To work below ambient temperatures, we recommend the use of the **FRIGITERM-TFT-10** Part No. **3000546**, or **FRIGITERM-TFT-30** Part No. **3000547** (see page 103 for specifications.)

For temperatures above ambient see the **DIGITERM-S-150** Part No. **3000543**, or **DIGITEM-TFT-200** Part No. **3000544** complete with 12 litre tank Part No. **6000391**, (see pages 101 and 102 for specifications).

It is necessary to configure the immersion thermostats for “external re-circulation.” The Bath adapter kit is not required.



*Frigiterm thermostat bath with adapter kit Part No. 1001625, fitted with a rotary viscometer.*



*Support for 2 beakers Part No. 1001627*

*Digiterm thermostat bath with support base Part No. 1001628. 12 litre bath Part No. 6000391 and adapter kit Part No. 1001625 or 1001626 To be used with a rotary viscometer and beaker support Part No. 1001627.*



*Immersion thermostat Digiterm controlling temperature of viscometer.*



## Rotary Viscometer “NDJ-1”

### APPLICATIONS

The instrument operates by rotating a disk or cylinder, (spindle), that is submerged in the liquid or fluid to be analysed. A pre-selected speed is set, the unit measures the absolute resistance from viscosity of the fluid being analysed. Suitable for samples such as: foods, cosmetics, fats and oils, pharmaceutical products, paints and plastics, etc.

### FEATURES

The asynchronous motor is connected to a graduated disk with 4 different speeds that propel the spindle via a spiral and die.

Supplied complete with a set of 4 spindles in a box, numbered 1 to 4 with spindle stand.

The viscometer includes a level and adjustable screw feet support base and protective case.

MODEL	Part No.	Measuring range	Tolerance	Spindle Speed r.p.m. for 1 to 4	Power W	Weight Kg
NDJ-1	5120230	10-100.000 mPaS	±5% Liquid Newtons	6 - 12 - 30 - 60	15	6





## Flow cups for measuring liquid viscosity

CUP N° 4 STANDARD DIN 53211.  
CUPS STANDARD ISO 2431.  
CUP FORD STANDARD ASTM D-1200.  
CAPACITY: 100ML.

### FEATURES

Suitable for measuring kinematic viscosities from 5 to 700 cSt, model dependent.  
Metallic cups, chrome finished and calibrated.



Flow cups with handle.  
Models DIN 53211 N° 4  
and Ford ASTM D-1200.



Flow cups. Standard models.



Heated cups with threaded base, can be connected to a water bath or to a temperature regulator Electemp.

### ACCESSORY

Support stand with adjustable level.  
Part No. **7001021**

### ACCESSORIES

Water bath with heater and screw on disk, with level. Part No. **7001022**  
Temperature controller Electemp-TFT. Part No. **3000897**  
Pt 100 sensor probe for the Electemp-TFT and water bath. Part No. **7001496**  
(See page 293).

### MODELS

Part No.	Standard	Bore Ø mm	Format	Range cSt	Admisible fall times
<b>1000123</b>	DIN 53211	4	Standard	90 to 700	25" to 100"
<b>7001239</b>	DIN 53211	4	Heated	90 to 700	25" to 100"
<b>1000347</b>	DIN 53211	4	With handle	90 to 700	25" to 100"
<b>1001013</b>	ISO 2431	3	Standard	5 to 42	30" to 100"
<b>7001017</b>	ISO 2431	3	Heated	5 to 42	30" to 100"
<b>1001014</b>	ISO 2431	4	Standard	35 to 135	30" to 100"
<b>7001018</b>	ISO 2431	4	Heated	35 to 135	30" to 100"
<b>1001015</b>	ISO 2431	5	Standard	100 to 350	30" to 100"
<b>7001019</b>	ISO 2431	5	Heated	100 to 350	30" to 100"
<b>1001016</b>	ISO 2431	6	Standard	190 to 680	30" to 100"
<b>7001020</b>	ISO 2431	6	Heated	190 to 680	30" to 100"
<b>1000705</b>	ASTM D-1200	2.53	Standard	25 to 120	20" to 100"
		3.40		40 to 220	20" to 100"
<b>7000706</b>	ASTM D-1200	2.53	Heated	25 to 120	20" to 100"
		3.40		40 to 220	20" to 100"
<b>1000707</b>	ASTM D-1200	2.53	With handle	25 to 120	20" to 100"
		3.40		40 to 220	20" to 100"
		4.12		70 to 370	20" to 100"

Comes with a calibration certificate with results traceable to know standards and equipment

**J.P. SELECTA, s.a.** Número de certificado: **100**  
Número de calibración:

**CERTIFICADO DE CALIBRACIÓN**  
**CALIBRATION RECORD**

Pag 1 de 1

**1. Identificación:**

Fecha calibración: 11/05/08  
Código copa (Code): 7001020  
Norma (Standard): ISO 2431 Ø 6  
Descripción (Description): ISO 2431 Ø 6 Calibración

**2. Patrón utilizado:**

Patrón utilizado: C200  
Lote (Lot number): 97701  
Viscosidad patrón (Standard Viscosity): 468 (cSt @25°C)

**3. Resultados de la medida:**

Tiempo 1 (Flow time 1): 69 (s)  
Tiempo 2 (Flow time 2): 67.1 (s)  
Media (Average): 68.05000 (s)  
Viscosidad (Viscosity): 461.17 (cSt)  
Temperatura (Temperature): 25 ± 0,5 (°C)

**4. Aceptación de la medida según la Norma:**

**4.1 Repetibilidad:**

100\*(Tiempo 1 - Media) / Media: 1.4 % (Max 5%) Correcto  
100\*(Tiempo 2 - Media) / Media: 1.4 % (Max 5%) Correcto

**4.2 Error:**

100\*(Media - Patrón) / Patrón: 1.5 % (Max 3%) Correcto

Aprobado/Approved by: \_\_\_\_\_

5

Este documento no es válido si no va acompañado por el certificado del líquido patrón. This document is not acceptable if not attached with standard liquid certificate.

J.P. SELECTA, s.a. es una empresa certificada ISO 9001 y los equipos de medidas se calibran adecuadamente y con trazabilidad a patrones reconocidos. J.P. SELECTA, s.a. is a company ISO 9001 certified and our measurement facilities are properly calibrated and traceable to recognized standards.

J.P. SELECTA, s.a., Ctra. NII Km 585,1 Abrera (Barcelona) SPAIN 08630 Tel: (93) 779 88 77 Fax: (93) 779 23 62





## Ford cup thermostat for viscosity measurement "TV-1452"

CUP MODELS THAT CONFORM TO THE FOLLOWING STANDARDS: DIN 53211, ISO 2431 AND ASTM 1200.  
ELECTRONIC DIGITAL CONTROL FROM 10°C TO 60°C.

### Heating and cooling by Peltier effect

#### APPLICATIONS

Thermostat Ford cups for viscosity measurement need to be maintained at a precise temperature of 10 and 60 °C.

#### FEATURES

Made up of an independent Peltier thermostat control system that heats and cools. Made from AISI 304 stainless steel, with adjustable levelling feet supports, and central orifice for locating the cup.

#### CONTROL PANEL

Illuminate ON/OFF switch  
Digital temperature display  
Key pad to select readout and temperature.



#### MODEL

Part No.	Temperature °C	Stability °C	Homogeneity °C	Read error	Resolution	Height / Width / Depth cm	Power W	Weight Kg
<b>3001452</b>	10 to 60 °C	±0.1	±0.2	±0.5	0.1	23 34 30	130	5

See the different standards, models and cups (see page 289.)



## Viscometer Precision Bath "VB-1423"

FOR CONTROLLABLE TEMPERATURES FROM AMB.+5 °C TO 100 °C.

STABILITY ±0.05 °C. HOMOGENEITY ±0.05 °C. READING ERROR ±0.09 °C. RESOLUTION 0.1 °C.

#### SAFETY:

STANDARD DIN 12879.2 CONTROLLABLE SAFETY THERMOSTAT WITH MANUAL RESET.

#### FEATURES

Temperature sensor Pt100 thermo-resistor, stainless steel AISI 304 lid with three viscometer locations ports, three independent lids and an additional location port for the control thermometer. The main body of the bath is made of a 20 litre borosilicate glass tank. A white plate is located at the back to help optimise and read the viscometers.

#### CONTROL PANEL

1. Mains power illuminated switch.
2. Temperature regulator:
  3. Real time temperature display.
  4. Push button to increase value.
  5. Push button to decrease value.
  6. Push button to configure operation.
7. Safety thermostat safety lamp.



#### MODEL

Part No.	Control range °C	Capacity litres	Height / Ø (tank) cm	Height / Ø (total) cm	Power W	Weight Kg
<b>3001423</b>	amb.+5 up to 100	20	32 30	47 30	1000	8



Used for measurements with glass viscometers

Made for the calibration of viscometers according to the following standards UNE 400313, ISO 3105, ASTM D 445 and 2515

#### ACCESSORIES

**Universal viscometer support** made from PTFE with stainless steel AISI 304 support. Suitable for the following viscometers :



- Cannon-Fenske for transparent liquids.
- Cannon-Fenske for opaque liquids.
- Ubbelohde.
- Ostwald.
- BS U Tube.
- Cannon-Manning semi-micro.

- Ubbelohde type BS/IP/SL, BS/IP/SL(S) & type BS/IP/MSL.
- DIN Ubbelohde.

Part No. **1001453**

**Calibration Chronometers** (see page 295).

**Thermometers for viscometer baths.**

Part No.

- 1001454** Thermometer ASTM 120C at 38.6 to 41.4°C divisions 0.05 °C.
- 1001455** Thermometer ASTM 121C at 98.6 to 101.4 °C divisions 0.05 °C.
- 1001456** Thermometer ASTM 91C at 20.0 to 50.0 °C divisions 0.1 °C.
- 1001457** Thermometer ASTM 92C at 40.0 to 70.0 °C divisions 0.1 °C.
- 1001458** Thermometer ASTM 93C at 60.0 to 90.0 °C divisions 0.1 °C.
- 1001459** Thermometer ASTM 94C at 80.0 to 110.0 °C divisions 0.1 °C.



**COMECTA** Glass Viscometers

**VISCOMETER "UBBELOHDE"**

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105.  
 Suitable for transparent liquids.  
 Complete with calibration certificate.  
 Total length 283 mm.  
 Permanent amber markings.

**ACCESSORY**

**Viscometers support rack.**  
 Part No. **1025812**  
 Capacity:  
 6 viscometers.

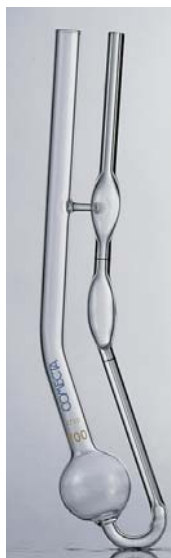


*Ubbelohde*

Part No.	Size	Nominal constant	Viscosity range in cSt
5600001	0	0.001	0.3 to 1
5600002	0C	0.003	0.6 to 3
5600003	0B	0.005	1 to 5
5600004	1	0.01	2 to 10
5600005	1C	0.03	6 to 30
5600006	1B	0.05	10 to 50
5600007	2	0.1	20 to 100
5600008	2C	0.3	60 to 300
5600009	2B	0.5	100 to 500
5600010	3	1.0	200 to 1000
5600011	3C	3.0	600 to 3000
5600012	3B	5.0	1000 to 5000
5600013	4	10.0	2000 to 10000
5600014	4C	30.0	6000 to 30000

**VISCOMETERS "CANNON-FENSKÉ" TRANSPARENT**

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105 - IP 71.  
 Suitable for transparent liquids.  
 Complete with calibration certificate.  
 Constant at 40 °C to 100 °C.  
 Total length 250 mm.  
 Permanent amber markings.



*Transparent*

Part No.	Size	Nominal constant	Viscosity range in cSt
5600050	25	0,002	0,4 a 1,6
5600051	50	0,004	0,8 a 3,2
5600052	75	0,008	1,6 a 6,4
5600053	100	0,015	3 a 15
5600054	150	0,035	7 a 35
5600055	200	0,1	20 a 100
5600056	300	0,25	50 a 200
5600057	350	0,5	100 a 500
5600058	400	1,2	240 a 1200
5600059	450	2,5	500 a 2500
5600060	500	8	1600 a 8000
5600061	600	20	4000 a 20000

**VISCOMETERS "CANNON-FENSKÉ" OPAQUE**

ASTM D445 - ASTM D446 - ISO 3104 - ISO 3105.  
 Suitable for opaque and transparent liquids.  
 Complete with calibration certificate.  
 Constant at 40 °C and 100 °C.  
 Total length 295 mm.  
 Permanent amber markings.



*Opaque*

Part No.	Size	Nominal constant	Viscosity range in cSt
5600065	25	0,002	0,4 a 1,6
5600066	50	0,004	0,8 a 3,2
5600067	75	0,008	1,6 a 6,4
5600068	100	0,015	3 a 15
5600069	150	0,035	7 a 35
5600070	200	0,1	20 a 100
5600071	300	0,25	50 a 200
5600072	350	0,5	100 a 500
5600073	400	1,2	240 a 1200
5600074	450	2,5	500 a 2500
5600075	500	8	1600 a 8000
5600076	600	20	4000 a 20000

## MICRO-UBBELOHDE VISCOMETER 3 ml

Suitable for transparent liquids.  
 Calibration certificate.  
 Nominal overall length 290 mm.  
 Permanent ring marks in amber.  
 Sample filling volume: 3 ml.



**NEW**

*Micro-Ubbelohde*

Code	Size	Nominal constant	Viscosity range in cSt
5600020	I	0,01	0,4 to 6
5600021	Ic	0,03	1,2 to 18
5600022	II	0,1	4 to 60
5600023	IIc	0,3	12 to 180
5600024	III	1,0	40 to 800

## “U-TUBE REVERSE FLOW” VISCOMETER BS/IP/RF

Suitable for opaque liquids.  
 Calibration certificate.  
 Nominal overall length 275 mm.  
 Permanent ring marks in amber.



**NEW**

*U-Tube reverse flow*

Code	Size	Nominal constant	Viscosity range in cSt
5600025	1	0,003	0,6 to 3
5600026	2	0,01	2 to 10
5600027	3	0,03	6 to 30
5600028	4	0,1	20 to 100
5600029	5	0,3	60 to 300
5600030	6	1,0	200 to 1000
5600031	7	3,0	600 to 3000
5600032	8	10	2000 to 10000
5600033	9	30	6000 to 30000
5600034	10	100	20000 to 100000
5600035	11	300	60000 to 300000

## BS/U TUBE VISCOMETER

Suitable for transparent liquids.  
 Calibration certificate.  
 Nominal overall length 300 mm.  
 Permanent ring marks in amber.



**NEW**

*BS/U Tube*

Code	Size	Nominal constant	Viscosity range in cSt
5600036	A	0,003	0,9 to 3
5600037	B	0,01	2 to 10
5600038	C	0,03	6 to 30
5600039	D	0,1	20 to 100
5600040	E	0,3	60 to 300
5600041	F	1,0	200 to 1000
5600042	G	3,0	600 to 3000
5600043	H	10,0	2000 to 10000

## OSTWALD PATTERN VISCOMETER

Suitable for transparent liquids.  
 Calibration certificate at 20°C.  
 Nominal overall length 250 mm.  
 Permanent ring marks in amber.  
 Sample filling volume 10 ml.



**NEW**

*Ostwald*

Code	Size	Nominal constant	Efflux time between ring marks Water at 20 °C. (seconds)
5600044	45	0,022	45
5600045	85	0,011	85
5600046	100	0,01	100
5600047	125	0,008	125