The RHEO-TESTER 1000 according to DIN 54811 is a new intelligent tabletop High Pressure Capillary Rheometer to determine the flow behaviour and viscosity of Thermoplastics and elastomers.

The RHEO-TESTER 1000 is used in the field of research, development as well as for quality control and goods inwards inspection.

The RHEO-TESTER 1000 has the following features:

- Presetting, measurement control and evaluation via the Windows programme WinRHEO (see special product description)
- Microprocessor system for data acquisition
- Temperature controller with max. 2 heater circuits with own microprocessor
- Electrically heated test chamber with easily exchangeable test barrel
- Pressure transducer or force transducer can be installed
- Operation mode "Constant speed":
  Presetting of max. 20 piston speeds, measure of melt pressure or piston force
- Operation mode "Constant pressure":
  Presetting of max. 20 melt pressures or piston forces, measure of piston speed
- Evaluation of the apparent or the real shear stress by real test pressure measurement
- Test data storage and presetting of the next value is done automatically after stabilisation of the test data (e.g. stationary flow)
- Die swell measurement
The RHEO-TESTER 1000 consists of:

**Frame**
The machine body of the RHEO-TESTER 1000 is a stable and compact construction, in order to cope with high test forces. Test chamber, electronic and test piston drive are located separately.

**Protection Hood**
The protection hood is made of Plexiglas for covering the dangerous area of the test piston. For cleaning and feeding of the test barrel, the protection hood can be moved upwards. The test piston does not move, until the protection hood is closed.

**Test Piston Drive**
The piston is driven by a high quality Precision Screw Jack that is generally maintenance free. All gear casings are in grey cast iron, the worm wheel is manufactured from bearing quality bronze alloy. The worm is made from alloy steel, ion-nitrided and ground. Axial loads are carried in sealed angular ball bearings.
Test Chamber
The test chamber is electrically heated via a temperature controller with 2 heater circuits. It can be equipped with 2 different Test Barrels and Test Pistons (see options).

Temperature Controller
The temperature control is done via a microprocessor controlled temperature controller with up to 2 heater circuits for a range of 60 - 400,0°C (extended range up to 500°C, see options).
The set temperatures are preset via the PC. The actual value is displayed on the monitor of the PC with a resolution of max. 0,1° C.

Amplifier
To amplify the measuring signal given by a pressure or force transducer (both options). To change from pressure to force measurement or vice versa just connect the amplifier cable to the appropriate transducer. No further modifications are required. Therefore pressure and force transducer can be available simultaneously but a pressure and force measurement can’t performed at the same time. With programme controlled zero point and calibration adjustment as well as limit value control. The amplifier is suitable for all pressure or force transducer nominal ranges.
Shear Rates:

<table>
<thead>
<tr>
<th>Test barrel [mm]</th>
<th>Dimensions of capillaries in [mm]</th>
<th>Shear rate at speed of test piston</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 9,5</td>
<td>minimal 0,0005 mm/sec</td>
<td>maximal 10 mm/sec</td>
</tr>
<tr>
<td>0,5</td>
<td>2,888</td>
<td>57,760</td>
</tr>
<tr>
<td>1,0</td>
<td>0,361</td>
<td>7,220</td>
</tr>
<tr>
<td>2,0</td>
<td>0,045</td>
<td>903</td>
</tr>
<tr>
<td>ø 12</td>
<td>0,5</td>
<td>4,608</td>
</tr>
<tr>
<td>1,0</td>
<td>0,576</td>
<td>11,520</td>
</tr>
<tr>
<td>2,0</td>
<td>0,072</td>
<td>1,440</td>
</tr>
</tbody>
</table>

Technical Data

Test chamber: Two heater circuits, electrically heated, thermocouples PT 100 1/3 DIN
Temperature instability over time over usable cylinder length: less than ± 0,2 °C
Temperature deviation over usable cylinder length:
- 60 - 300 °C: ± 0,5 °C
- 301 - 400 °C: ± 1,0 °C

Temperature controller: A temperature controller for the control of 2 heater circuits with own microprocessor

Set test temperature: On the PC from 060,0 - 400,0 °C
(Extended range up to 500,0 °C, see options)

Test barrel: 9,55 + 0,01 mm diameter, 200 mm usable length
12,0 + 0,01 mm diameter, 200 mm usable length

Test piston: 9,54 - 0,01 mm diameter, 260 mm length
11,99 - 0,01 mm diameter, 260 mm length

Capillary: See options

Lowest speed: 0,0005 mm/s
Highest speed: 10 mm/s
Feeding speed: 0,0005 - 10 mm/s

Test force: maximum of force:
- 15 kN for speeds: 0 < v <= 4 mm/s
- 10 kN for speeds: 4 < v <= 9 mm/s
- 9,5 kN for speeds: 9 < v <= 10 mm/s

The specification for the test force refers to the nominal value of the power supply.

Remark: With a piston diameter of 9,5 mm the maximal force is limited to 12 kN due to the stability of this piston.

Test pressure: With a piston diameter 9,5 mm: 1400 bar
With a piston diameter 12,0 mm: 850 bar

Force transducer (option): Nominal range: 10 or 20 kN
Accuracy: 1% of Nominal range
Combined error for non-linearity and hysteresis: 0,5% of Nominal range

Melt pressure transducer:
(option): Can be installed instead of force transducer. Technical data, see options

Power supply: See options

Electrical connections: 2 serial connections for the PC

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admissible voltage fluctuations</td>
<td>±10 %</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 Hz / 60 Hz</td>
</tr>
<tr>
<td>Protective earthing</td>
<td>Earth resistance less than 5 Ohm</td>
</tr>
<tr>
<td>Short-time intrusions</td>
<td>Less than 10 msec</td>
</tr>
<tr>
<td>Power input</td>
<td>2.3 kW</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+10 °C to +40 °C</td>
</tr>
<tr>
<td>Air humidity</td>
<td>Max. 90% non-condensing</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Width: 610 mm, length: 560 mm, height: 1450 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>ca. 150 kg</td>
</tr>
</tbody>
</table>

**Finish**

Front and cover plate: beige-mat
Frame: grey-brown RAL 8019

**Accessories**

1. Operating manual
2. Keys for the main switch
1. Mirror with magnetic base
1. Tube graphite paste
1. Set of fuses
1. Set of wrenches
1. Pair of tweezers
1. Brass brush

Please note that the RHEO-TESTER 1000 is fitted with microprocessors. The power supply must be free of any interference in order to guarantee trouble-free operation. Mains filter or stabilisers must be connected on the line side if any interference occurs.

**RHEO-TESTER 1000**

Basic instrument
Order number .................................................................................................................. 5.14.500
Options

The RHEO-TESTER 1000 basic instrument is not a functioning instrument without adding the following optional units:

- The **English Version** or the **German Version**
- One **Power Supply** 1 x 230V / 50Hz, 3 x 230V / 60Hz, or 1 x 115V / 60Hz
- **Test Chamber** up to operating temperature 400 °C (500 °C)
- One **Round Hole Capillary**
- If necessary the **Melt Temperature Measurement**
- A **Test Barrel Set for force measurement** and a **Force Transducer**
  or a **Test Barrel Set for pressure measurement** and a **Pressure Transducer**
- A **Personal-Computer** (special product description)
- One **Printer**
- One **Printer Cable**
- If necessary a **Special Table**
- Two **Connection Cables** for the PC

The required PC programme package WinRHEO is always supplied free of charge with the basic instrument.

The programme and the operating manual can be delivered in two different languages. Please choose one of them:

**English Version**
Programme and operating manual in English language.
Order number ................................................................................................................... 5.14.601

**German Version**
Programme and operating manual in German language.
Order number ................................................................................................................... 5.14.600

**English Operating Manual**
An additional English operating manual.
One operating manual will be supplied with the basic instrument.
Order number ................................................................................................................... 5.14.603

**German Operating Manual**
An additional German operating manual.
One operating manual will be supplied with the basic instrument.
Order number ................................................................................................................... 5.14.602
Following power supplies are available:

**Power Supply 230 V**

 Voltage: 230V, L + N + PE  
 Permissible voltage fluctuations: +/- 10%  
 Frequency: 50 Hz  
 Power consumption: 2.3 kW  
 Order number ................................................................................................................... 5.14.595

**Power Supply 3 x 230 V**

 Voltage: 3 x 230V, 3L + PE without N  
 Permissible voltage fluctuations: +/- 10%  
 Frequency: 60 Hz  
 Power consumption: 2.3 kW  
 Order number ................................................................................................................... 5.14.596

**Power Supply 1 x 115 V**

 Voltage: 1 x 115V, L + N + PE  
 Permissible voltage fluctuations: +/- 10%  
 Frequency: 60 Hz  
 Power consumption: 2.3 kW  
 Max. current: 20 A  
 Order number ................................................................................................................... 5.14.606

Special voltages on request.

**Test Chamber up to operating temperature 400 °C**

Order number ................................................................................................................... 5.14.590

**Test Chamber up to operating temperature 500 °C**

Caution! Avoid combination with power supply 115 V.  
Max. current would be approx. 30 A.  
Order number ................................................................................................................... 5.14.591

**Test Piston with Teflon Ring**

This test piston is well suited for testing with low viscous materials like polyamides and polyesters for instance. Length 260 mm, Max. temperature 260 °C.

Test piston with teflon ring 9,5 mm  
Order number ................................................................................................................... 5.08.080

Test piston with teflon ring 12 mm  
Order number ................................................................................................................... 5.08.055
At least one **Round Hole Capillary** is needed:

**Round Hole Capillary**
Usable with all test barrel dimensions.

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 30 mm length</th>
<th>L/D = 30/0.5 = 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.232</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 20 mm length</th>
<th>L/D = 20/0.5 = 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.231</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 15 mm length</th>
<th>L/D = 15/0.5 = 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.230</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 10 mm length</th>
<th>L/D = 10/0.5 = 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.102</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 5 mm length</th>
<th>L/D = 5/0.5 = 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.101</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 0.5 mm diameter, 2.5 mm length</th>
<th>L/D = 2.5/0.5 = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 40 mm length</th>
<th>L/D = 40/1 = 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.107</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 30 mm length</th>
<th>L/D = 30/1 = 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.235</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 20 mm length</th>
<th>L/D = 20/1 = 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.234</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 10 mm length</th>
<th>L/D = 10/1 = 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.105</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 5 mm length</th>
<th>L/D = 5/1 = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.104</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 1 mm diameter, 2.5 mm length</th>
<th>L/D = 2.5/1 = 2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.103</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 2 mm diameter, 30 mm length</th>
<th>L/D = 30/2 = 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.237</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 2 mm diameter, 20 mm length</th>
<th>L/D = 20/2 = 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.236</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capillary with 2 mm diameter, 10 mm length</th>
<th>L/D = 10/2 = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number</td>
<td>4.23.106</td>
</tr>
</tbody>
</table>
Special Capillary Nut
For round hole capillaries with 40 mm length.
Order number ................................................................................................................... .............................................5.13.138

The melt temperature can be measured in the inlet or outlet of round hole capillaries. You need following position for this measurement.
A subsequent installation has to be done by one of our service technicians.

Melt Temperature Measurement
Consists of:
- Thermocouple incl. holding adapter kit suitable for round hole capillaries to measure the melt temperature. Length: 75 mm, Diameter: 1 mm, Type: iron-constantan
- Thermo-voltage-amplifier to amplify the signals of thermocouples
- Reference junction thermostat etc.
Order number ................................................................................................................... .............................................5.14.705

To run tests with a force transducer will need two of the following items.
Choose a test barrel set and a force transducer:

Test Barrel Set for Force Measurement
Consists of test barrel, hardened and polished, with locking nut above and test piston, length 260 mm.
With cleaning tool, consists of brass scraper, a cleaning piston for the test barrel, a tube brush and a feeding tool.

Test barrel set for 9,5 mm diameter
Order number ................................................................................................................... .............................................5.14.580

Test barrel set for 12 mm diameter
Order number ................................................................................................................... .............................................5.14.581

Test Barrel Set for Force Measurement in very high Corrosion and Wear Resistant Style
Consists of test barrel, hardened and polished, with locking nut above and test piston, length 260 mm.
With cleaning tool, consists of brass scraper, a cleaning piston for the test barrel, a tube brush and a feeding tool.

Technical data of test barrel and test piston:
- Hard-inchromized by thermodiffusion acc. to DIN 17014
- Layer Thickness approx. 15 µ, closed homogeneous layers
- Layer Hardness approx. 2000 HV

Test barrel set for 9,5 mm diameter
Order number ................................................................................................................... .............................................5.14.745

Test barrel set for 12 mm diameter
Order number ................................................................................................................... .............................................5.14.746

Force Transducer 10 kN
Is located in the standard available test piston holder.
A subsequent installation has to be done by one of our service technicians.
Nominal range: 0 - 10 kN.
Precision: ±1% of nominal range.
Combined error for non-linearity and hysteresis: ±0.5% of nominal range.
Order number ................................................................................................................... .............................................5.14.585

**Force Transducer 20 kN**

Is located in the standard available test piston holder.
A subsequent installation has to be done by one of our service technicians.
Nominal range: 0 - 20 kN.
Precision: ±1% of nominal range.
Combined error for non-linearity and hysteresis: ±0.5% of nominal range.
Please be aware that the maximum force of 15 kN is limited to a speed range of 0 - 4 mm/s.
Order number ................................................................................................................... .............................................5.14.620

Test data can also be sampled with a pressure transducer instead of the force transducer. Be aware of the temperature range of the transducers. If you run tests with temperatures up to 500 ºC use only pressure transducers that are recommended for this temperatures.
As there is an individual calibration of the pressure amplifier needed for each transducer, we advise to use only one type of transducer of one manufacturer.

Choose a **test barrel set** and a **pressure transducer** in the following positions:

**Test Barrel Set for Pressure Measurement**

Consists of test barrel, hardened and polished, with locking nut above and test piston, length 260 mm. With cleaning tool, consists of brass scraper, a cleaning piston for the test barrel, a tube brush and a feeding tool.
Including cleaning tool for "Pressure Hole", adapter for pressure transducer and replacement part which will be located instead of force transducer in the test piston holder.

Test barrel set for 9,5 mm diameter
Order number ................................................................................................................... .............................................5.14.582

Test barrel set for 12 mm diameter
Order number ................................................................................................................... .............................................5.14.583
Test Barrel Set for Pressure Measurement in very high Corrosion and Wear Resistant Style
Consists of test barrel, hardened and polished, with locking nut above and test piston, length 260 mm. With cleaning tool, consists of brass scraper, a cleaning piston for the test barrel, a tube brush and a feeding tool.
Including cleaning tool for "Pressure Hole", adapter for pressure transducer and replacement part which will be located instead of force transducer in the test piston holder.

Technical data of test barrel and test piston:
- Hard-chromized by thermodiffusion acc. to DIN 17014
- Layer Thickness approx. 15 µ, closed homogeneous layers
- Layer Hardness approx. 2000 HV

Test barrel set for 9.5 mm diameter
Order number ................................................................................................................... 5.14.747

Test barrel set for 12 mm diameter
Order number ................................................................................................................... 5.14.748

Test Pressure Transducer Class I up to 400°C
Thread: M18 x 1.5.
Class I: ±0.5% of the nominal value.
Including cleaning tool, thread M18 x 1.5.

Test pressure transducer 0 - 50 bar
Order number ................................................................................................................... 8.81.360

Test pressure transducer 0 - 100 bar
Order number ................................................................................................................... 8.81.361

Test pressure transducer 0 - 200 bar
Order number ................................................................................................................... 8.81.362

Test pressure transducer 0 - 500 bar
Order number ................................................................................................................... 8.81.364

Test pressure transducer 0 - 1000 bar
Order number ................................................................................................................... 8.81.366

Test pressure transducer 0 - 1400 bar
Order number ................................................................................................................... 8.81.367
Test Pressure Transducer Class I up to 500°C
Thread: M18 x 1.5.
Class I: ± 0.5% of nominal value.

Including cleaning tool, thread M18 x 1.5.

Test pressure transducer 0 - 50 bar
Order number ......................................................... 8.81.380

Test pressure transducer 0 - 100 bar
Order number ......................................................... 8.81.381

Test pressure transducer 0 - 200 bar
Order number ......................................................... 8.81.382

Test pressure transducer 0 - 500 bar
Order number ......................................................... 8.81.384

Test pressure transducer 0 - 1000 bar
Order number ......................................................... 8.81.386

Test Pressure Transducer Class I up to 500°C, BROSA Type
Compared to the standard transducers, BROSA type transducers have a particular wear-resistant membrane, a high temperature drift and they are less sensitive.

Thread: M18 x 1.5.
Class I: ± 0.5% of nominal value.

Test pressure transducer 0 - 50 bar
Order number ......................................................... 8.81.220

Test pressure transducer 0 - 100 bar
Order number ......................................................... 8.81.221

Test pressure transducer 0 - 200 bar
Order number ......................................................... 8.81.222

Test pressure transducer 0 - 500 bar
Order number ......................................................... 8.81.223

Test pressure transducer 0 - 1000 bar
Order number ......................................................... 8.81.225

Test pressure transducer 0 - 1400 bar
Order number ......................................................... 8.81.226
Die Swell Tester
To measure the diameter of the extruded strand, for determination of static and dynamic die swell. Consists of:
- Laser measuring head: Laser unit class 2 (630 - 680 nm, power < 1 mW)
  Dimensions 219 x 125 x 53 mm, weight 2,27 kg
  Working Distance 25,4 mm, Measurement Area 0,25 to 25,4 mm, Resolution 0,001 mm
- Electronics
  Dimensions 268 x 128 x 63 mm, weight 1,95 kg.
Power supply and test data sampling by means of the device.
Order number ................................................................................................................... .............................................5.13.124

Control electronic of die swell tester is in a separate box.

Melt Cutting Unit with Pneumatic Drive
The pneumatic driven melt cutting device is used for cutting off the outflowing melt strand. The cutting process has to be initiated manually. The construction of the melt cutting device is based on two counter-running knives, which after being activated hit against one another very quickly to cut the melt strand. The melt cutting unit is an additional option to the die swell tester, which helps to achieve a better reproducibility of the test data.
Order number ................................................................................................................... .............................................5.14.750

Swivelling Arm for Die Swell Tester
Complete unit to support the laser measuring head of the Die Swell Tester.
Needed together with 5.13.124 and/or 5.14.750.
Order number ................................................................................................................... .............................................5.14.702

With the help of a pneumatic cleaning device the test barrel can be cleaned with less effort and better results.

Pneumatic Cleaning Device
Air driven rotary cleaning tool for quick, easy and thorough cleaning of the test barrel. The device needs an air supply of 4-6 bar. The air supply must be oiled and water free.
Accessories supplied:
  1 quick connect coupling for a 9 mm air hose
  1 Air hose
Order number ................................................................................................................... .............................................5.11.082

Cleaning Set
Consists of cleaning brush and cleaning piston for cleaning the test barrel, each supplied with coupling part for the pneumatic cleaning device.

Cleaning set for 9,5 mm test barrel diameter
Order number ................................................................................................................... .............................................5.08.240

Cleaning set for 12 mm test barrel diameter
Order number ................................................................................................................... .............................................5.08.241
Any printer that is supported by a Windows 3.1 driver can be used. We offer the following printer as option:

**Printer Canon BJC-600**
Power supply: 220-240V/50Hz
Supplied accessories:
- Inkjet cartridge black
- Inkjet cartridge cyan
- Inkjet cartridge magenta
- Inkjet cartridge yellow

Order number ................................................................................................................................................................8.94.023

**Printer cable, length 2 m**
Order number ................................................................................................................................................................8.90.021

**Inkjet Cartridge black**
Order number ................................................................................................................................................................8.94.928

**Inkjet Cartridge cyan**
Order number ................................................................................................................................................................8.94.929

**Inkjet Cartridge magenta**
Order number ................................................................................................................................................................8.94.930

**Inkjet Cartridge yellow**
Order number ................................................................................................................................................................8.94.931

**Special Table**
For RHEO-TESTER 1000, Personal Computer (PC) and printer. Includes 6 socket extension block for mains cable.
Width: 1800 mm, Depth: 620 mm, Height: 650 mm
Order number ................................................................................................................................................................5.21.859

**Special Table**
For RHEO-TESTER 1000 and Personal Computer (PC). Includes 6 socket extension block for mains cable.
Width: 1400 mm, Depth: 620 mm, Height: 650 mm
Order number ................................................................................................................................................................5.08.230
To connect the PC to RHEO-TESTER 1000 (test instrument) two connection cables are required. On RHEO-TESTER 1000 side there are always 25 pole plugs. Together with every connection cable you get a 9/25 adapter for the adjustment to the PC.

Following order numbers refer to one connection cable.

**Connection cable 25/9 pole, length 2 m**
Order number ................................................................................................................... 6.82.529

**Connection cable 25/9 pole, length 4 m**
Order number ................................................................................................................... 6.82.530

**Connection cable 25/9 pole, length 10 m**
Order number ................................................................................................................... 6.82.531

We reserve the right to change the above for technical improvements.
RHEO-TESTER 1000
Kurztexte für Preisliste, Auftragsbestätigung und Rechnung

<table>
<thead>
<tr>
<th>Bestellnummer</th>
<th>Benennung</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.14.500</td>
<td>RHEO-TESTER 1000</td>
</tr>
<tr>
<td></td>
<td>High Pressure Capillary Rheometer.</td>
</tr>
<tr>
<td></td>
<td>Basic instrument</td>
</tr>
<tr>
<td>5.14.600</td>
<td>German version</td>
</tr>
<tr>
<td></td>
<td>WinRHEO programme</td>
</tr>
<tr>
<td>5.14.601</td>
<td>English version</td>
</tr>
<tr>
<td></td>
<td>WinRHEO programme</td>
</tr>
<tr>
<td>5.14.602</td>
<td>Operating manual</td>
</tr>
<tr>
<td></td>
<td>For RHEO-TESTER 1000 German</td>
</tr>
<tr>
<td>5.14.603</td>
<td>Operating manual</td>
</tr>
<tr>
<td></td>
<td>For RHEO-TESTER 1000 English</td>
</tr>
<tr>
<td>5.14.595</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>1 x 230 V, 50 Hz</td>
</tr>
<tr>
<td>5.14.596</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>3 x 230 V, 60 Hz</td>
</tr>
<tr>
<td>5.14.606</td>
<td>Power supply</td>
</tr>
<tr>
<td></td>
<td>1 x 115 V, 60 Hz</td>
</tr>
<tr>
<td>5.14.590</td>
<td>Test chamber up to op. temperature 400°C</td>
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<tr>
<td>5.14.591</td>
<td>Test chamber up to op. temperature 500°C</td>
</tr>
<tr>
<td>5.08.080</td>
<td>Test piston with teflon ring</td>
</tr>
<tr>
<td></td>
<td>With 9,5 mm diameter</td>
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<tr>
<td>5.08.055</td>
<td>Test piston with teflon ring</td>
</tr>
<tr>
<td></td>
<td>With 12 mm diameter</td>
</tr>
<tr>
<td>4.23.232</td>
<td>Round hole capillary</td>
</tr>
<tr>
<td></td>
<td>L= 30 mm, D=0,5 mm</td>
</tr>
<tr>
<td>4.23.231</td>
<td>Round hole capillary</td>
</tr>
<tr>
<td></td>
<td>L= 20 mm, D=0,5 mm</td>
</tr>
<tr>
<td>4.23.230</td>
<td>Round hole capillary</td>
</tr>
<tr>
<td></td>
<td>L= 15 mm, D=0,5 mm</td>
</tr>
<tr>
<td>4.23.102</td>
<td>Round hole capillary</td>
</tr>
<tr>
<td></td>
<td>L= 10 mm, D=0,5 mm</td>
</tr>
<tr>
<td>4.23.101</td>
<td>Round hole capillary</td>
</tr>
<tr>
<td></td>
<td>L= 5 mm, D=0,5 mm</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------</td>
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<tr>
<td>4.23.100</td>
<td>Round hole capillary</td>
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<tr>
<td>4.23.107</td>
<td>Round hole capillary</td>
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<tr>
<td>4.23.235</td>
<td>Round hole capillary</td>
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<td>4.23.234</td>
<td>Round hole capillary</td>
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<td>4.23.105</td>
<td>Round hole capillary</td>
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<td>4.23.104</td>
<td>Round hole capillary</td>
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<tr>
<td>4.23.103</td>
<td>Round hole capillary</td>
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<td>4.23.237</td>
<td>Round hole capillary</td>
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<td>4.23.236</td>
<td>Round hole capillary</td>
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<td>4.23.106</td>
<td>Round hole capillary</td>
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<tr>
<td>5.13.138</td>
<td>Special capillary nut</td>
</tr>
<tr>
<td>5.14.705</td>
<td>Melt temperature measurement</td>
</tr>
<tr>
<td>5.14.580</td>
<td>Test barrel set for force measurement</td>
</tr>
<tr>
<td>5.14.581</td>
<td>Test barrel set for force measurement</td>
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<tr>
<td>5.14.745</td>
<td>Test barrel set for force measurement</td>
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<tr>
<td>5.14.746</td>
<td>Test barrel set for force measurement</td>
</tr>
<tr>
<td>5.14.585</td>
<td>Force transducer</td>
</tr>
<tr>
<td>5.14.620</td>
<td>Force transducer</td>
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<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>5.14.082</td>
<td><strong>Test barrel set, pressure measurement</strong></td>
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<td>5.14.583</td>
<td><strong>Test barrel set, pressure measurement</strong></td>
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<td>5.14.747</td>
<td><strong>Test barrel set, pressure measurement</strong></td>
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<td>5.14.748</td>
<td><strong>Test barrel set, pressure measurement</strong></td>
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<tr>
<td>8.81.360</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
</tr>
<tr>
<td>8.81.361</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
</tr>
<tr>
<td>8.81.362</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
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<tr>
<td>8.81.364</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
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<tr>
<td>8.81.366</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
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<tr>
<td>8.81.367</td>
<td><strong>Pressure transducer up to 400°C</strong></td>
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<tr>
<td>8.81.380</td>
<td><strong>Pressure transducer up to 500°C</strong></td>
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<tr>
<td>8.81.381</td>
<td><strong>Pressure transducer up to 500°C</strong></td>
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<tr>
<td>8.81.382</td>
<td><strong>Pressure transducer up to 500°C</strong></td>
</tr>
<tr>
<td>8.81.384</td>
<td><strong>Pressure transducer up to 500°C</strong></td>
</tr>
</tbody>
</table>
class I

8.81.386 Pressure transducer up to 500°C
0 - 1000 bar, thread M18 x 1,5
class I

8.81.220 Pressure transducer up to 500°C
0 - 50 bar, thread M18 x 1,5
class I, type BROSA

8.81.221 Pressure transducer up to 500°C
0 - 100 bar, thread M18 x 1,5
class I, type BROSA

8.81.222 Pressure transducer up to 500°C
0 - 200 bar, thread M18 x 1,5
class I, type BROSA

8.81.223 Pressure transducer up to 500°C
0 - 500 bar, thread M18 x 1,5
class I, type BROSA

8.81.225 Pressure transducer up to 500°C
0 - 1000 bar, thread M18 x 1,5
class I, type BROSA

8.81.226 Pressure transducer up to 500°C
0 - 1400 bar, thread M18 x 1,5
class I, type BROSA

5.13.124 Die swell tester

5.14.750 Melt cutting unit

5.14.702 Swivelling Arm for Die Swell Tester
5.11.082 Pneumatic cleaning device
With quick connect coupling and air hose

5.08.240 Cleaning set
With cleaning brush and cleaning piston for 9,5 mm diameter

5.08.241 Cleaning set
With cleaning brush and cleaning piston for 12 mm diameter

8.94.023 Printer Canon BJC-600
Power supply 220-240V/50Hz

8.90.021 Printer cable, length 2 m

8.94.928 Inkjet cartridge black
8.94.929 Inkjet cartridge cyan
8.94.930 Inkjet cartridge magenta
8.94.931 Inkjet cartridge yellow

5.21.859 Special Table
   Width: 1800 mm, Depth: 620 mm
   Height: 650 mm

5.08.230 Special Table
   Width: 1400 mm, Depth: 620 mm
   Height: 650 mm

6.82.529 Connection cable 25/9 pole length 2 m
6.82.530 Connection cable 25/9 pole length 4 m
6.82.531 Connection cable 25/9 pole length 10 m

We reserve the right to change the above for technical improvements.