



Anton Paar

High Throughput Rheometer HTR 301

Platform and Applications

::: Intelligence in Rheometry



Cleaning Unit

For cleaning the upper and lower measuring geometry with water and detergent.

Features

- ▶ Prewashing with pressurized hot or cold water
- ▶ Cleaning with water, detergent and brushes
- ▶ Rinsing with pressurized hot or cold water
- ▶ Drying with hot air

Function

Systems with a cleaning unit use two sets of measuring systems to enable continuous operation of the rheometer. While one set of measuring systems is used for measurement, the other set is cleaned in the cleaning unit.



Application: Dispensable Samples

System for liquid samples up to 10 Pas which are suited for exact dispensing and which can be cleaned with water and detergent.

Features

- ▶ Measuring systems: Plate/plate or cone/plate measuring geometry with up to 50 mm diameter
- ▶ Temperature device: Peltier-controlled system (-30 °C to 200 °C)
- ▶ Dispensing system: Automated pipetting system with disposable tips, volume up to 1 mL
- ▶ Sample magazine: 96 samples, max. 10 mL, all vials are covered
- ▶ Cleaning unit: Automated cleaning of the upper and lower measuring geometry

Function

The dispenser aspirates the sample from the sample vial. By dispensing the exact volume to fill the gap between the upper and lower measuring geometry there is no need for trimming.

Application: Low-viscosity Samples

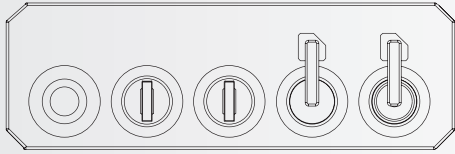
System for concentric cylinder measurements for low-viscosity samples which can be cleaned with water and detergent.

Features

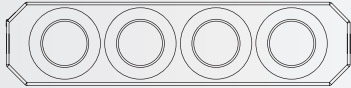
- ▶ Measuring systems: Concentric cylinder measuring geometry with up to 27 mm diameter
- ▶ Temperature device: Peltier-controlled system (-20 °C to 200 °C)
- ▶ Sample magazine: Measuring cup magazine for 48 cups, all cups with optional covers
- ▶ Cleaning unit: Automated cleaning of the upper measuring system (cylinder)

Function

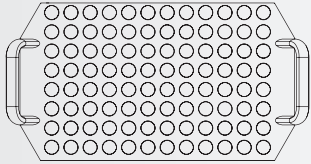
Each sample is prepared in a separate measuring cup. After the measurement the upper geometry is cleaned and the robot returns the measuring cup to the magazine.



Cleaning Unit



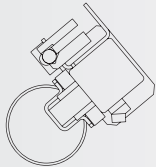
System Magazine



Sample Magazine



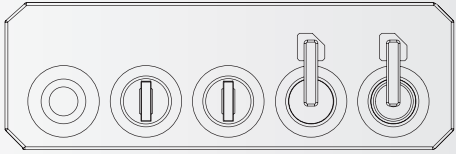
Tip Magazine



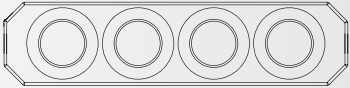
Dispenser



HTR Platform
MCR 301
6-axis Robotic Arm
Bar Code Reader



Cleaning Unit



System Magazine



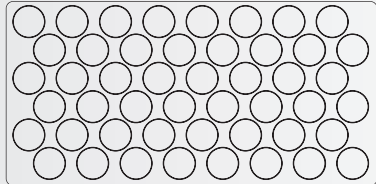
Plate Rack
(Multiple Levels)



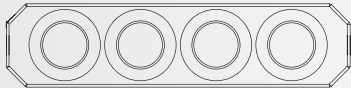
Trim Tool Blade
Magazine



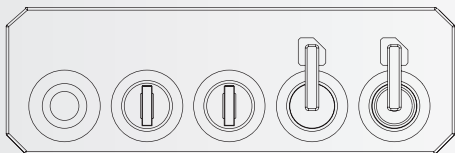
Trim Tool



Sample Cup Magazine



System Magazine



Cleaning Unit



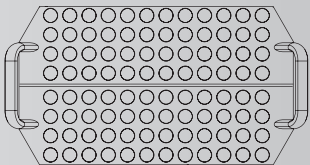
Trim Tool



Trim Tool Blade
Magazine



System
Assembly/Ejector



Sample Magazine

System Magazine

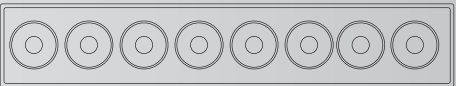


Plate Rack
(Multiple Levels)

Application: Paste-like Samples

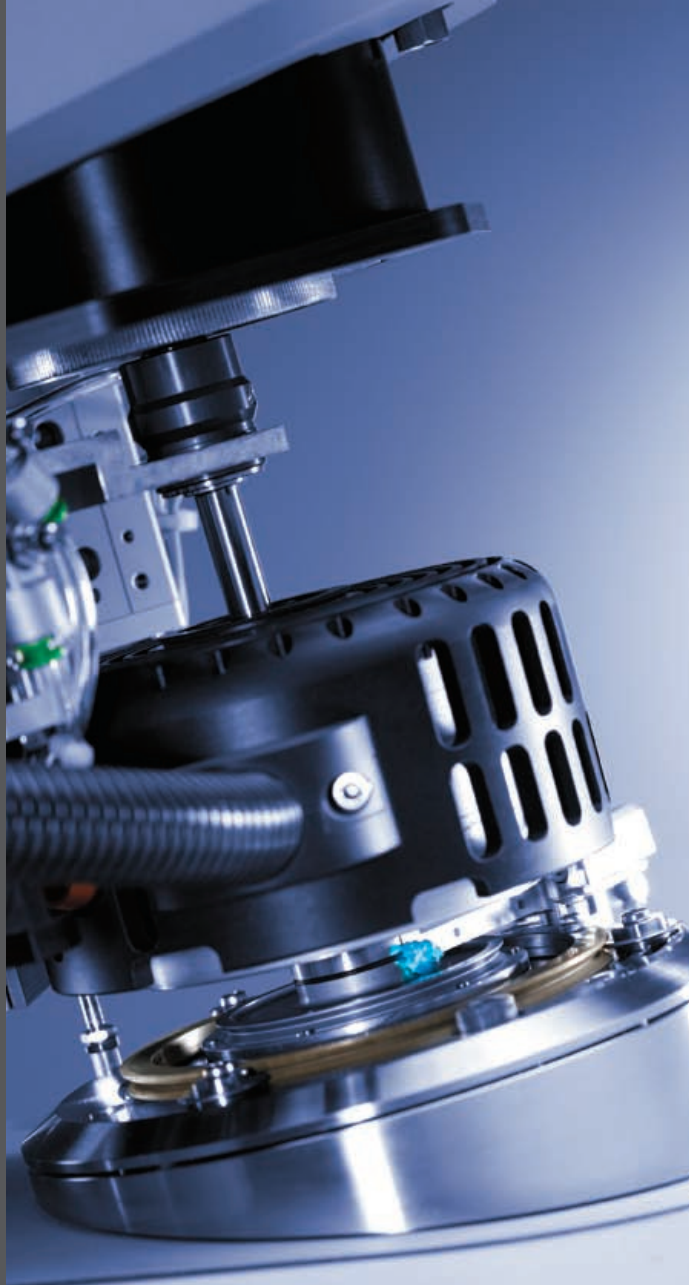
System for paste-like or gel-like samples which are not suited for exact dispensing and which can be cleaned with water and detergent.

Features

- ▶ Measuring systems: Plate/plate or cone/plate measuring geometry with up to 50 mm diameter
- ▶ Temperature device: Peltier-controlled system (-30 °C to 200 °C) suited for Trim Tool
- ▶ Sample trimming: Trim Tool with disposable Trim Tool blades for automated trimming
- ▶ Sample magazine: Measuring plate rack for 48 lower measuring plates, all plates can be covered
- ▶ Cleaning unit: Automated cleaning of the upper measuring geometry

Function

Each sample is placed on a separate lower measuring plate. The Trim Tool removes excess sample material before the measurement.



Application: Polymer Melts

System for measuring polymer melts from disk-shaped samples.

Features

- ▶ Measuring systems: Disposable or reusable plate/plate measuring geometry with up to 25 mm diameter
- ▶ Temperature device: Electrically heated system (room temperature to 320 °C) suited for Trim Tool
- ▶ Sample trimming: Trim Tool with disposable Trim Tool blades and automated recording of trimming result (picture)
- ▶ Sample magazine: 48 disk-shaped samples
- ▶ Measuring system magazines: Measuring plate rack for 48 lower measuring plates, magazine for 48 upper measuring systems

Function

For each measurement a new upper measuring system and lower measuring plate is used. The Trim Tool removes excess sample material before the measurement. After the measurement the measuring geometries are removed together with the sample and stored in the measuring plate rack.

Trim Tool

Trim Tool removes excess material from plate/plate or cone/plate measuring geometries before the measurement.

Features

- ▶ Stepper motor for speed and position control of the Trim Tool blade
- ▶ Peltier or electrically controlled temperature device
- ▶ Disposable Trim Tool blades

Function

The lower measuring plate has an elevated measuring area with the same diameter as the upper measuring geometry. A small blade moves around the edge of the measuring geometry and cuts away the excess sample material.

HTR Platform

The High Throughput Rheometer is the first fully automated rheometer available.

The HTR platform contains the basic components: rheometer, robot, control software and graphical user interface. Depending on the application, additional functional devices are added to the platform.

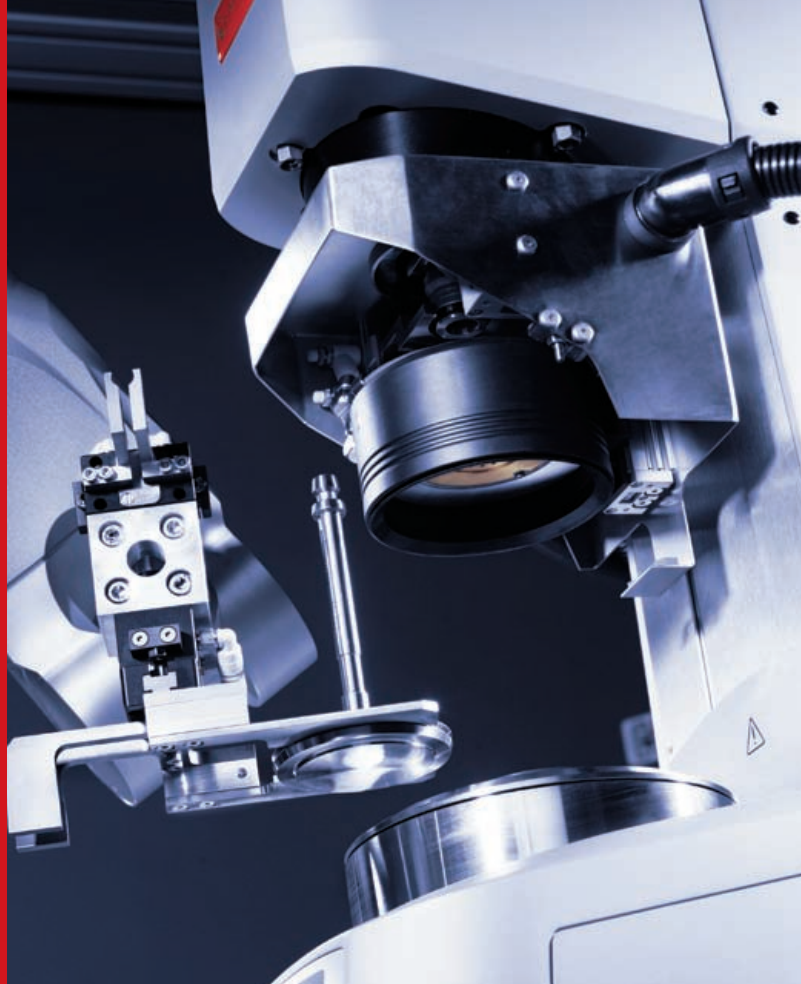
Features

- ▶ MCR 301 rheometer
- ▶ RheoPlus rheometer software
- ▶ Joblist editor software
- ▶ Robotic cell
- ▶ 6-axis robotic arm
- ▶ Bar code reader
- ▶ Control software with graphical user interface
- ▶ Interface to your database (LIMS/SAP interface)

Function

A standard MCR 301 rheometer is operated by a 6-axis robotic arm. The parameters for each sample are defined in a job list. A data matrix bar code reader serves to identify different samples. Measuring results are stored locally or transferred to your database via the LIMS/SAP interface (as ascii files).





Fotos: Croce & Wir



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measurement

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without notice

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