

RPA Ultra

EN

ASTM
D5289

ASTM
D6048

ASTM
D6204

ASTM
D6601

ASTM
D7050

ASTM
D7605

ASTM
D8059

DIN
53529

ISO
6502

ISO
13145

The first rotational closed cavity rheometer

The world's first rotational closed cavity rheometer with unlimited oscillation strain.



The RPA Ultra is an unconventional closed cavity rheometer with a rotational lower die providing unrestricted oscillation strain and a frequency breakthrough of up to 100 Hz. The instrument is designed to measure dynamic and static properties of raw elastomers and rubber compounds in all stages of a curing process.

Another technology breakthrough is the extended range of shear rate going from 0.001 to 500 1/s. The high shear rate can be utilized to simulate the extrusion process in a real production scenario. The RPA Ultra can excel in measurement repeatability and reproducibility thanks to the unique engineering on the sealed biconical dies which can greatly reduce slippage during a testing process. The new BareissOne™ software is a great complement to the RPA Ultra making your testing process much easier to handle and results much more comprehensible.

TEST METHODS

Isothermal	Steady shear
Non-Isothermal	Relaxation
Timed	Hysteresis
Temperature Sweep	Tension test
Strain Sweep	LAOS
Frequency Sweep	Matrix Test

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MAIN FEATURES

A Solid construction with high grade sheet metal.

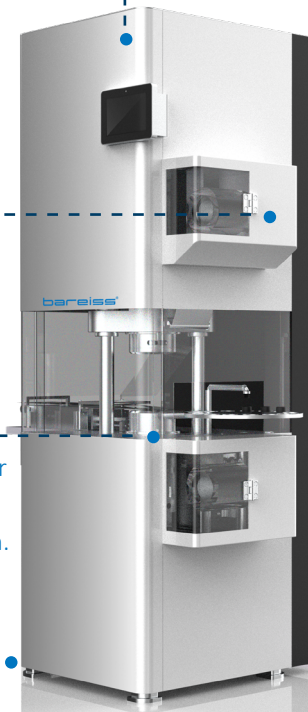
B Film cartridge for continuous feeding to the test cavity.

C With a rotational lower die, there is no more limitation on the strain.

D Retractable casters for easy mobility.

E 12" touch display for easy user interface providing a clearly defined set of menus to navigate through all the available functions.

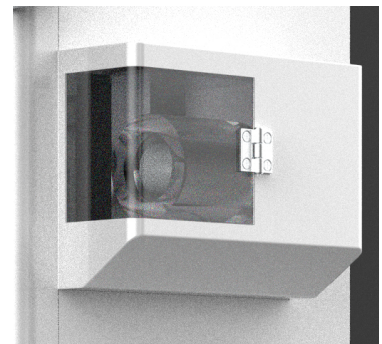
F Multiple samples tray with optional automatic loading system.



A fully rotational lower die and a fixed upper die providing unrestricted oscillation strain.



Optional automatic sample loading system to increase your testing capacity.



A film cartridge for easy and convenient reload of a new roll.

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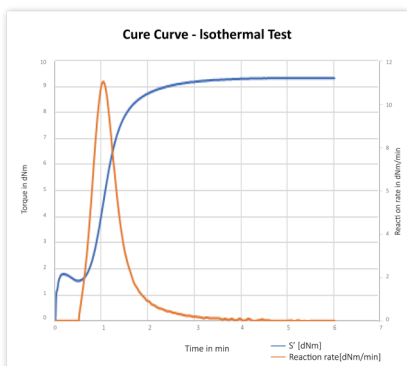
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BareissOne is a modularized software that is aimed to provide a common platform with integration of different test categories.

Whether it is a standard test for one single measurement or a series of tests that requires a complex test sequence editing, BareissOne is designed to offer all levels of user's demands.

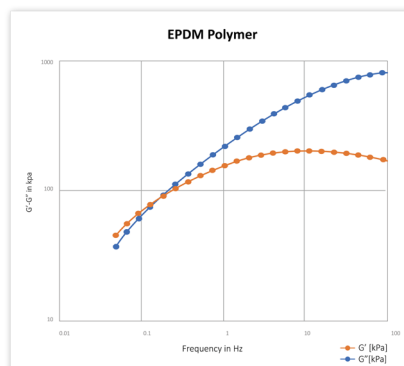
Features such as user authorization, system log, project management, version control and custom report are all at your fingertips.

BareissOne has made software use easier than it ever was before.



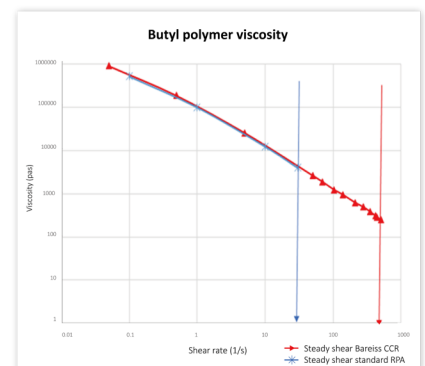
Isothermal Cure Curve

For quality control in rubber and elastomer processing and enhanced kinetics calculation. The key information incl. torque (S' ; S''), reaction rate, conversion, TanDelta (as a time function).



Frequency Sweep

Information for molecular weight and its distribution of rubber polymers. Analysis of TanDelta for information of viscos-elastic properties of a polymer or compound (die swell).



Steady Shear Viscosity

The RPA Ultra additionally offers real viscosity measurement over a wide range of shear rate (up to 500s⁻¹). With steady shear method, viscosity can be measured independently from Payne Effect (Filler-Filler interaction).

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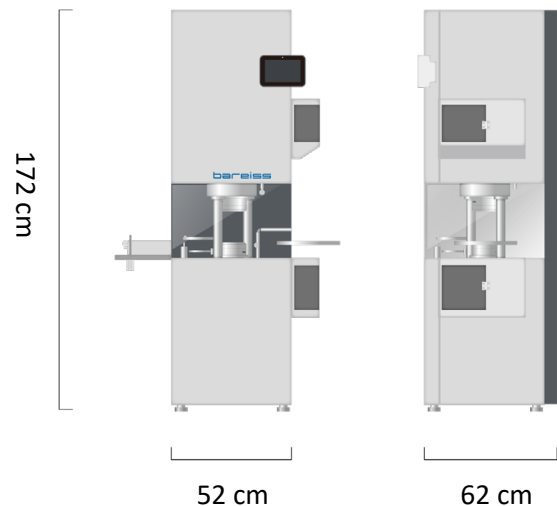
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Max. shear rate in rotation:	500 1/s
Max. shear rate in oscilation :	100 1/s
Max. ramp rate:	1.33°C/s-> 80°C/min
Max. cool rate:	0.5°C/s
Die config.:	Sealed die, biconical and plate-plate
Drive system:	High dynamic torque motor, High resolution controler
Oscillation frequency:	0.001 to 100 Hz
Oscillation strain:	+/- 0.001° to unlimited, ,+/- 0.014% to unlimited -> rotational
Temperature range:	Ambient to 235°C
Measured data:	Torque, temperature, frequency, strain; Optional: Normal force, die pressure
Caculated data:	S', S'', S*, G', G'', G*, tan δ, phase angle, cure speed, η', η'', η*, ...
Die gap:	0.45 mm nominal
Sample volume:	4.5 cm ²
Electrical:	400V/16A

Closing system:	Soft closing to prevent foil rips and damage of test samples, optionally variable closing force.
Torque range:	0.0001 to 250 dNm
Normal force / Pressure (opt.):	up to 10 kN
Subroutines:	Isothermal, Non-Isothermal, Timed, Temperature Sweep, Strain Sweep, Frequency Sweep, Steady Shear, Relaxation, Hysteresis, Tension Test, LAOS, Matrix Test
Interface:	Ethernet
Data points:	Over 3500 data points available for each static subtest Including S' Min, S' Max, TS 1, TS 2, TC 10, TC 30, TC 50, TC 90 Integrated, automatic reporting features for dynamic tests
Pneumatics:	min. 4.5 Bar (11.5 kN) / 60 psi



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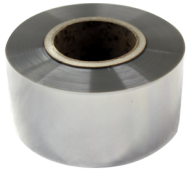
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ACCESSORIES



Melinex film roll

Melinex is a well-known brand for polyester film used in rubber and polymer industry. At 600 mm in length and 80 mm in width, a single roll can last for as many tests as possible.



BareissOne software

A modular software that provides ease of use for all levels of user demands. It includes many key features that are essential for effective testing process and accurate results.



Dartek film roll

Use this Dartek nylon film to protect dies from contamination. Ideal for RPA/CCR high strain testing.



Die groove pick

Use a die groove pick to remove any stubborn material residues.



Seal

Replacement seals for upper and lower dies of your MDR or RPA.



Tweezers

A handy tool for picking up samples from the die.



Heat resistant gloves

You may want to protect your hands with a pair of these gloves while operating a rheology instrument.



Cleaning brush

For a smooth operation and a good test outcome, it is important to remove any material debris left on the dies with a wire-bristle brush.



Fan filters

Replacement filters.

REFERENCE

Bareiss offers a comprehensive range of consumables and accessories for you to conduct your rheology tests. All these products are proven to be premium quality.



MADE IN GERMANY SINCE 1954.

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