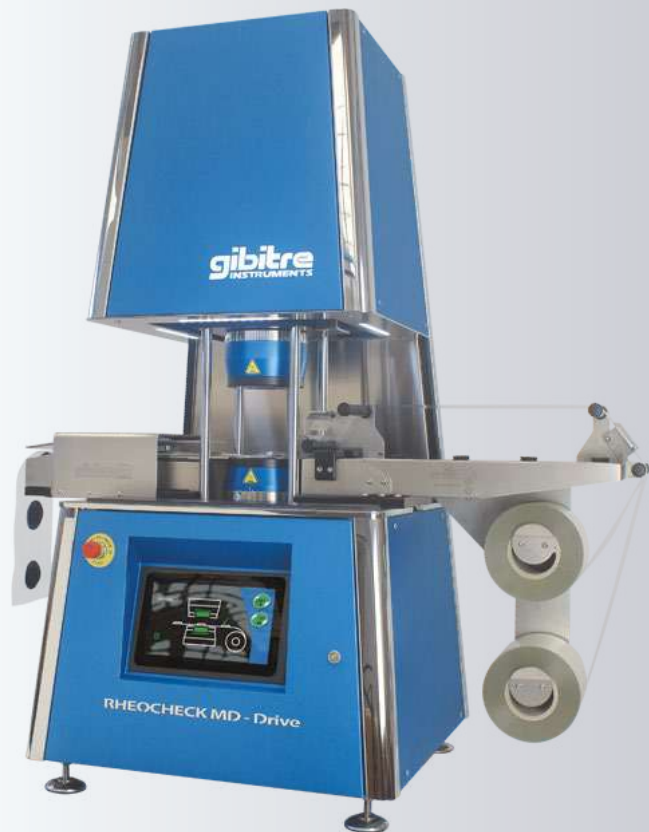


# RHEOCHECK MD - DRIVE

**MOVING DIE RHEOMETER CONTROLLED BY  
PERSONAL COMPUTER**

STANDARDS: ASTM D5289; ISO 6502-1; ISO 6502-3;

NOTE: COMPLIANCE WITH SOME STANDARDS MAY REQUIRE OPTIONAL  
ACCESSORIES OR SETUPS.



**gibitre®**  
INSTRUMENTS



Gibitre MD Rheometer measures the cure characteristics of a rubber compound in conformity with the international standards. The measure of the vulcanization is carried out by measuring the modification in the mechanical characteristics of the sample. The instrument permits to apply a cyclic strain to a test piece and to measure the associated force. The test is performed at a defined temperature and the measure of stiffness recorded continuously as a function of time.

## Key Features

- Biconical, closed die system, sealed testing

chamber

- Top brand Torque sensor positioned in the upper test chamber
- Exclusive construction for the micrometric adjustment of the gap between the dies
- Independent PID temperature controllers with 0.1°C resolution
- Compressed air cooling circuit for rapid temperature reduction
- Touch-screen display for instrument control
- Light panel to check the status of the instrument from a distance

- Transparent protection panel with safety sensor
- Full license of Rheocheck software optimized for Bar-code sample identification
- Full license of Datatest software for complete management of Gibitre SQL Database
- Fume extraction predisposition
- CE label

## Accessories

- Automatic sample loader.
- Pressure sensor for testing of cellular rubber.
- Constant Volume Sample Cutter.

**Numerical Test Data:** Torque Values: MI, ML, M90, MX, MH, PCR S\* @ ML, S\* @ MH, TanD @ ML, TanD @ MH. Scorch Time: tS1, tS2, tSX. Cure Time: t90, tX, tML, tMH, tPCR, tRX, CRI; Pressure: PL, PH, tP, MPR, tMPR

**Displayed Curves:** Elastic (S'), Viscose (S''), Complex (S\*), Tan-Delta, storage shear Modulus (G'), loss shear Modulus (G''), Curing speed, Dies Temperatures

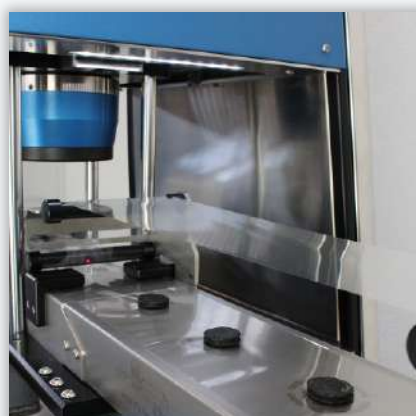
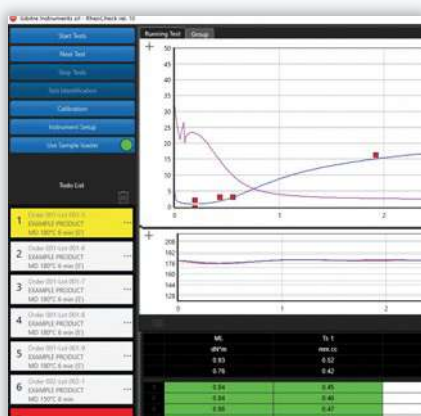
**Torque sensor:** Brand: Interface®; Capacity: 20 N\*m; Resolution: 0.01 dN\*m; Linearity Error (%FS): +0.25

**Oscillation frequency:** 100 cycles/minute ( $1.7 \pm 0.1$  Hz)

**Oscillation angle:** 0.5°, 1° (3° or other angles available on request); Easy adjustment of the angle with quick replacement of calibrated gauges

**Temperature:** Between room temperature and +250 °C - Resolution 0.1 °C

**Personal Computer (optional):** Minimum Setup: Windows 10 or 11, Intel Core i5, 5GB RAM



# RHEOCHECK OD - DRIVE

**OSCILLATING DISK RHEOMETER CONTROLLED BY PERSONAL COMPUTER.**

STANDARDS: ASTM D2084; ISO 6502-1; ISO 6502-2;

NOTE: COMPLIANCE WITH SOME STANDARDS MAY REQUIRE OPTIONAL ACCESSORIES OR SETUPS.



Gibitre OD Rheometer measures the cure characteristics of a rubber compound in conformity with ISO 6502-2 and ASTM D2084 Standards. The measure of the vulcanization is carried out by measuring the modification in the mechanical characteristics of the sample. The instrument permits to apply a cyclic strain to a test piece and to measure the associated force. The test is performed at a defined temperature and the measure of stiffness recorded continuously as a function of time.

## Key Features

- Test Dies and Rotor conforming to International Standards
- Independent PID temperature controllers with 0.1°C resolution
- Touch-screen display for instrument control
- Light panel to check the status of the instrument from a distance
- Transparent protection panel with safety sensor
- Full license of Rheocheck software optimized for

Bar-code sample identification

- Full license of Datagest software for complete management of Gibitre SQL Database
- Fume extraction predisposition
- CE label

## Accessories

- Pressure sensor for testing of cellular rubber.
- Constant Volume Sample Cutter.

**Numerical Test Data:** Torque Values: MI, ML, M90, MX, MH, PCR, S\* @ML, TanD@ML, S\* @MH, TanD@MH (X=customer-defined); Scorch Time: tS1, tS2, tSX ; Cure Time: t90, tX, tML, tMH, tPCR, tRX; Pressure (optional): PL, PH, tP, MPR, tMPR

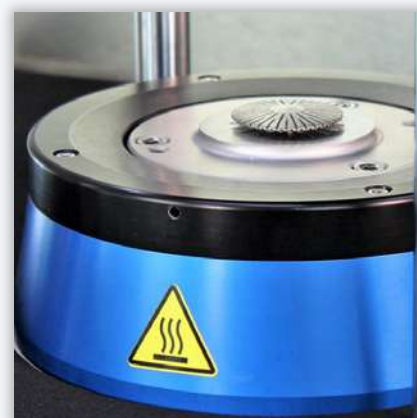
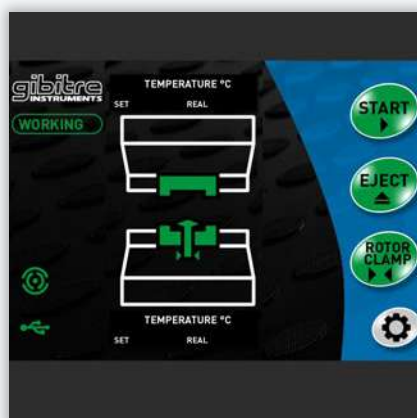
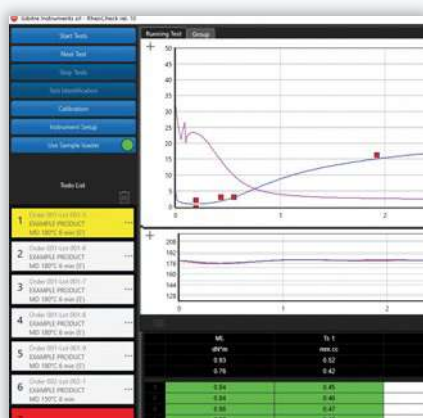
**Graphic representation:** Elastic curve (S'), Viscose curve (S''), Complex curve (S\*)Tan-Delta curve, Curing speed, Upper and Lower test chamber temperatures

**Oscillation frequency:** 100 cycles /minute (1,7 ±0,1 Hz)

**Oscillation Angle:** 1°, 3°. Easy adjustment with calibrated gauges

**Temperature:** Room Temperature to +250 °C - Resolution 0.1 °C

**Personal Computer (optional):** Minimum Setup: Windows 10 or 11, Intel Core i5, 5GB RAM



# MOONEYCHECK - DRIVE

**MOONEY VISCOMETER CONTROLLED BY PERSONAL COMPUTER FOR THE PERFORMANCE OF VISCOSITY, SCORCH AND STRESS RELAXATION TESTS**

STANDARDS: ASTM D1646; ASTM D3346; GOST I0722-76; ISO 289-1; ISO 289-2; ISO 289-4; JIS K\_6300-1;

NOTE: COMPLIANCE WITH SOME STANDARDS MAY REQUIRE OPTIONAL ACCESSORIES OR SETUPS.



The Mooney viscometer is a rotating disc viscometer that measures Mooney viscosity, scorch and stress relaxation characteristics of polymers and rubber compounds. The test is carried out by measuring the torque, which has to be applied under specified temperature and pressure conditions, in order to rotate a metal disc at 2rpm speed in the cylindrical test chamber filled with rubber. The resistance offered by the rubber to this rotation is expressed as the Mooney viscosity of the test piece.

## Key Features

- Performance of Viscosity, Scorch and Stress Relaxation tests

- Test chamber and rotor in compliance with international standards
- Touch-screen display for instrument control
- Independent PID temperature controllers with 0.1°C resolution
- Compressed air cooling circuit for rapid temperature reduction
- Calibrated internal Weight for auto-calibration
- Pneumatic rotor expulsion system
- Light panel to check the status of the instrument from a distance
- Transparent protection panel with safety sensor
- Full license of Mooneycheck software optimized

for Bar-code sample identification

- Full license of Datagest software for complete management of Gibitre SQL Database
- Fume extraction predisposition
- CE label

## Accessories

- Rotor rotation speed settable between 0.01 and 20 RPM
- Rotor small
- Constant Volume sample cutter
- Polyamide or Polyester Film for the protection of the dies during the test.

**Numerical test data :** Viscosity test: MU<sub>ini</sub>, t<sub>ini</sub>, MU<sub>min</sub>, t<sub>min</sub>, Dt\_MU, MU<sub>4</sub>, MU<sub>X</sub>, Dt(X-Y), S4, SX (X,Y=customer def.); Scorch test: ts5, ts35, Dt\_35-5, ts3, ts18, Dt\_18-3, tsX, Dt\_X-Y ; Stress relaxation test: a, k, r, A, TX%

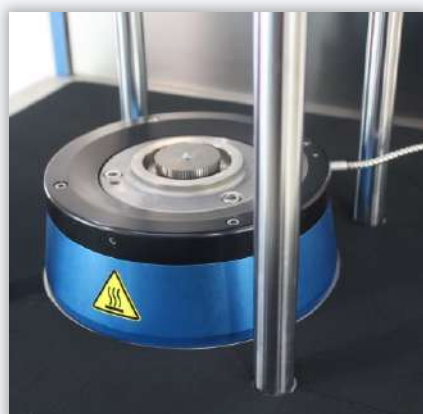
**Test curves:** Torque versus time curve, Log Mooney versus Log time of Stress Relaxation test, Upper and Lower Test Chamber temperatures

**Torque sensor:** Capacity: 230 MU; Resolution: 0.01 MU; Linearity Error (%FS): ±0.25

**Frequency of rotation:** Standard Instrument: 2.00 r/min ± 0.02 r/min (0.209 rad/s ± 0.002 rad/s); With variable speed option: adjustable between 0.01 to 20 r/min ± 1 %

**Temperature:** Between room temperature and +250 °C - Resolution 0.1 °C

**Personal Computer (optional):** Minimum Setup: Windows 10 or 11, Intel Core i5, 5GB RAM



# CONSTANT VOLUME SAMPLE CUTTER

VOLUMETRIC DIE CUTTING MACHINES FOR PREPARATION OF CONSTANT VOLUME SPECIMENS FOR MD RHEOMETER, OD RHEOMETER OR MOONEY VISCOMETER



## Description

Preparation of specimens with constant volume for MD Rheometer, OD Rheometer and Mooney Viscometer from raw rubber compounds ensures greater repeatability of results and eliminates the manual preparation operation.

Gibitre produces two models for the preparation of Test Pieces for Rheometer or Mooney Viscometer. The new construction of the machines, with an open structure in the front side, allows even large pieces or strips of raw compound to be placed and cut. The front protective screen of the pneumatically activated machine automatically descends before the start of the cutting operation to ensure that the

machine can be used safely in accordance with CE safety requirements.

The cutting mechanism adopts a double-action piston to press the compound to the required thickness and subsequently activate the cutting die to obtain specimens with the required volume even with compounds of high hardness.

The machines can be adjusted in order to obtain exactly the required volume according to the control specifications defined by your laboratory.

### Constant Volume Sample Cutters - Rheometer

The machine allows you to produce specimens with the volume required by ISO 6502-3 and ASTM D5289 standards for the MD rheometer (adjustable

from 4 to 5.5cm<sup>3</sup>) or ISO 6502-2 and ASTM D2084 standards for the OD rheometer (adjustable from 8 to 11cm<sup>3</sup>).

### Constant Volume Sample Cutters - Mooney Viscometer

The machine makes it possible to produce specimens with volume to standard for Mooney Viscometer and to perform cutting of the central part of the specimen for rotor insertion.

The specimens have diameter 35 mm and the volume required by ISO 289 and ASTM D1646 standards (adjustable from 12 to 13cm<sup>3</sup>)

**Sample Diameter:** 35 mm

**Samples obtainable:** Volume adjustable between 2 and 15 cm<sup>3</sup>

**Volume Accuracy:** 0.1 %

**Maximum Thickness of Green rubber to cut:** 25 mm

**Force produced:** 1200 Kg (at six bar air pressure)

**Default Sample Volume:** MD Rheometer: 4.8 cm<sup>3</sup>; OD Rheometer: 9.5 cm<sup>3</sup>; Mooney Viscometer: 2 x 12.5 cm<sup>3</sup>

**Safety devices:** Pneumatically operated interlocked transparent safety door

**Labelling:** CE Labelling

