Member of WORLD of TEST™

QUALITEST™
ADVANCED TESTING TECHNOLOGIES

MOONEY VISCOMETER

RUBBER TESTING

MOONEY VISCOMETER
MOONEYCHECK DRIVE

Best Application:

MOONEY VISCOMETER – MOONEYCHECK DRIVE

The Mooney Viscometer – Mooneycheck Drive operates as a Mooney Viscometer, offering the capability to measure Mooney viscosity, Pre-curing (scorch), and Stress Relaxation Characteristics in both uncompounded and compounded rubbers. This testing procedure strictly adheres to the standards outlined by ASTM D 1646, ISO 289-1, ISO 289-2, and ISO 289-3

The testing protocol entails the measurement of torque necessary to rotate a metal disc within a cylindrical test chamber filled with rubber, operating at a speed of 2rpm. This process is conducted under specific temperature and pressure conditions. The degree of resistance displayed by the rubber to this rotational force is then quantified as the Mooney viscosity of the test specimen.

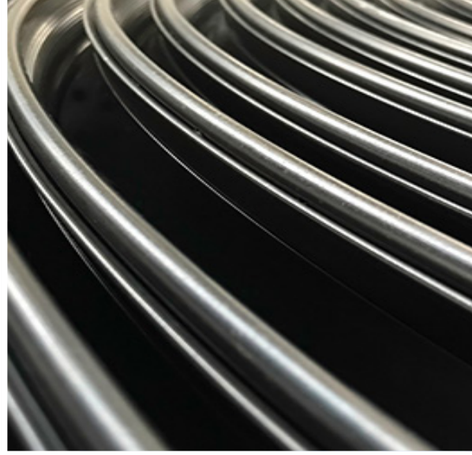
APPLICATIONS

Why Choose Mooney Viscometer – Mooneycheck Drive?

Overview:

- Test chamber and rotor conform to international standards.
- Pneumatic Rotor Ejection for efficient operation.
- Incorporates premium brand components.
- Internal weight for self-calibration of torque measurement.
- Independent thermoregulators offering 0.1 °C resolution.
- Interactive touch-screen display for intuitive instrument control.
- Optional control of rotor rotation speed.
- Easily accessible test chamber with transparent safety panel and safety lock.
- Designed for future integration of a fume aspiration system.
- A full license of MooneyCheck_10 software optimized for barcode sample identification.
- The comprehensive license of Datagest software for comprehensive management of the SQL Standard Database.

These features collectively ensure optimal performance, reliability, and user-friendly operation for precise Mooney viscosity testing.



APPLICATIONS

Introducing the New ‘Drive’ Generation

The latest iteration of ‘Drive’ instruments represents the culmination of four decades of expertise in rubber rheology measurement. This new generation integrates cutting-edge technologies encompassing mechanical construction, measurement sensors, and control software. Our commitment to innovation ensures the utmost accuracy, reliability, and performance in rubber analysis.

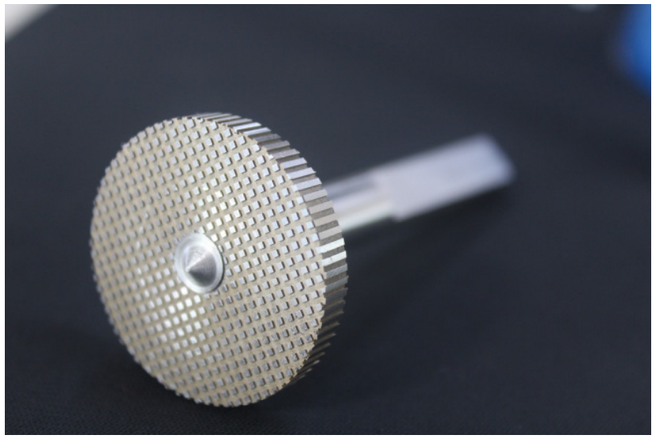
Mooney Viscometer – Mooneycheck Drive Software

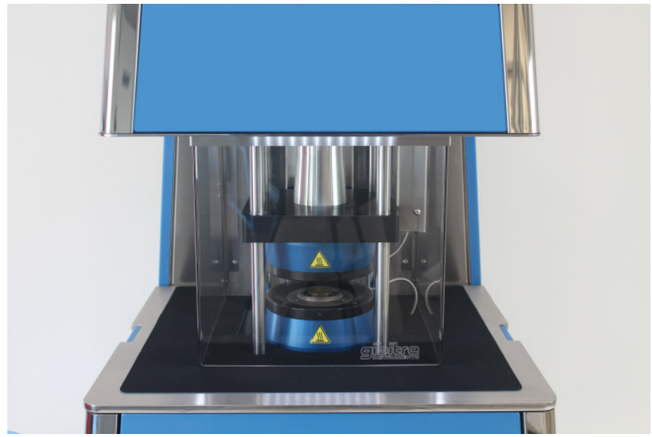
The Mooney Viscometer – Mooneycheck Drive program seamlessly interfaces with the SQL database, enabling the storage of test results and curves within the Datagest data management program.

This software empowers you to:

- Swiftly identify the test sequence.
- Automatically calibrate the instrument to meet test requirements.
- Generate test curves encompassing Viscosity, Scorch, Stress Relaxation, and Temperature.
- Compare outcomes against tolerance thresholds.
- Conduct comprehensive statistical analysis (Carta-X, Gaussiana, Mean, Standard Deviation, Max, Min, Cp, Cpk).
- Generate tailor-made reports.

MooneyCheck_10 streamlines your analysis, ensuring efficiency, accuracy, and informed decision-making.





APPLICATIONS

Calculated Results

This software empowers you to create personalized test procedures encompassing all calculations mandated by standards and product specifications. A dedicated page comprehensively outlines all available calculations, ensuring precise and compliant testing methodologies.

Option: Variable Rotor Rotation Speed

The MooneyCheck-Drive instrument offers an optional configuration for rotor speed control during testing:

- This configuration enables the specification of Rotation Speed as a customizable parameter within the Test Procedure.
- Rotor speed can be adjusted within a range of 0.01 to 20 RPM.
- Conducting tests at varied speeds facilitates the assessment of your product's response based on shear rate, as well as the simulation of product behavior under real usage conditions.

FEATURES/ADVANTAGES

Mooney Viscometer – Mooneycheck Drive User-Centric Design

Mooney Viscometer – Mooneycheck Drive Control Panel

The instrument is designed with the user in mind, featuring a spacious 10.2" touch-screen display. The user-friendly interface allows easy initiation and cessation of tests through the display's buttons.

Comprehensive information about the instrument's status is displayed, encompassing software connectivity, die temperature, and sensor diagnostics. This thoughtful design ensures a seamless testing experience while keeping users informed and in control.

Pneumatic Rotor Ejection

Every Mooney Viscometer manufactured by is equipped with a pneumatic ejection device for the rotor. This feature significantly streamlines the process of cleaning and replacing specimens between successive tests, enhancing efficiency and convenience.

Light Panel

An integrated light panel positioned at the front of the instrument employs color changes to provide visual status updates from a distance. The indicator light communicates the following statuses:

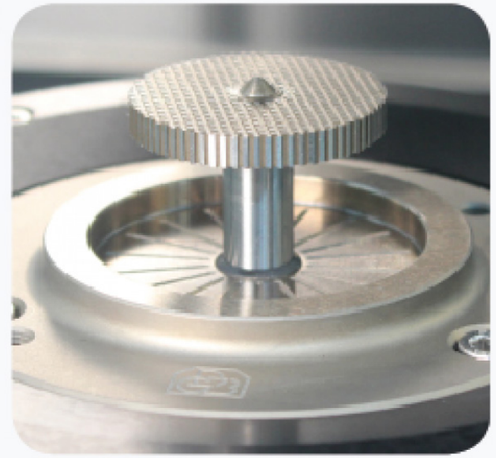
- Instrument ready.
- Instrument under test.
- Instrument setting test temperature.

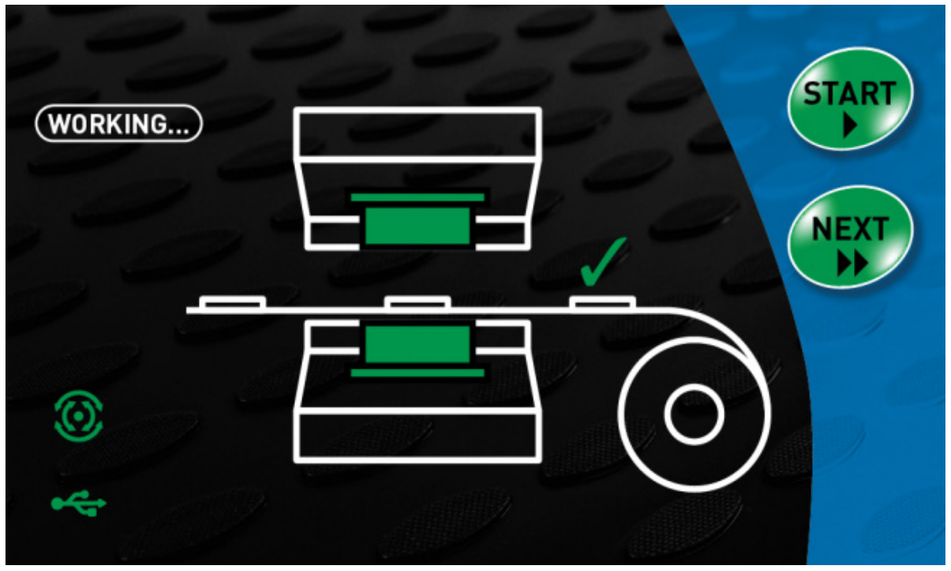
This feature ensures effortless monitoring of the instrument's operational state, facilitating efficient workflow management.

Calibration

Automated Torque Calibration

The integrated Calibration weight within the instrument enables automatic calibration of the torque sensor. This calibration process is simple and convenient: just press the Calibration button on the Control Display to initiate pneumatic lifting of the weight. This ensures accurate and precise calibration with minimal effort operational state, facilitating efficient workflow management.





FEATURES/ADVANTAGES

Standard Mooney Viscometer – Mooneycheck Drive Calibration Service

Our calibration service adheres to the ISO 289-1 standard guidelines, ensuring accurate and reliable results.

This comprehensive service encompasses:

- Routine instrument maintenance.
- Replacement of the lower die seal.
- Calibration of upper and lower die temperatures (at 100°C and 125°C).
- Calibration of temperature recovery time at test initiation.
- Torque reading calibration (at 100 Mooney points).
- Rotor rotation speed calibration.
- Final verification using Standard Compound.
- Issuance and email delivery of a Calibration Certificate, complete with traceability to primary standards.

With our meticulous calibration, your Mooney Viscometer maintains peak precision and performance, promoting reliable testing outcomes.

Certified Rubber Samples for Mooney Viscometer – Mooneycheck Drive Test

Ensure accurate Mooney Viscosity verification with our certified butyl rubber specimens (Isobutylene - Isoprene). These specimens come as a pair and are directly extracted from an industry-standard bale labeled as IRM (Industry Reference Material). The bale is meticulously prepared by ASTM D11.20's task group subcommittee on Compounding Materials and Procedures in strict accordance with ASTM D 4678. This guarantees authenticity and reliability for precise testing results.

THEORY/METHOD

Mooney Viscometer – Mooneycheck Drive Data Management

Datagest Program: Complete Traceability

The Datagest program is an essential Database Management Tool included with all instrument-control programs. With this program, you can:

- Select, filter, print, export, and analyze stored test results from all connected instruments.
- Define test procedures, specifying test conditions and desired results.
- Set tolerance limits for products, manually or using statistical analysis (mean and standard deviation) of saved results.
- Generate comprehensive multi-instrument test reports.

The Datagest program ensures complete traceability and efficient data management for optimal testing and analysis.

Standard SQL Database

All programs employ a database structured with SQL for result storage. This database can be set up within an SQL instance on the company server or on a PC linked to a measuring instrument. The installation of Microsoft SQL service (Express version) is included with the delivery. This facilitates seamless data organization and retrieval across the system.

Industry 4.0 Integration

Both the instrument and the software have been meticulously designed to seamlessly integrate with various environments, optimizing operational efficiency.

Utilizing an SQL-formatted database and the Company_Connect program, you can synchronize your company's management software with the database. This integration accelerates test identification and facilitates the use of bar-code readers or similar devices. This Industry 4.0 integration enhances connectivity and automation, streamlining your workflow processes.

THEORY/METHOD

Test Report Generation

With Version 10 programs, a range of options is at your disposal for creating comprehensive test reports:

- Choose the printing language that suits your needs.
- Insert your company's logo for personalization.
- Print individual tests or groups of tests.
- Include test curves in the report.
- Display numerical results.
- Show case tolerance limits.
- Present statistical findings.
- Add a legend with result explanations.
- Include operator signatures.
- Attach customized notes.
- Generate PDF files.

Moreover, the program features a robust REPORT EDITOR, empowering you to fully customize report formats to suit your requirements. This comprehensive suite of tools ensures that your test reports accurately capture and convey the desired information.

Temperature Regulation

Temperature regulation is achieved through thermo-regulators equipped with PID micro-processors, offering a high precision of 0.1°C resolution.

Independent temperature control units guarantee sophisticated temperature management and hassle-free replacement in the event of failure.

Furthermore, specially designed electrical heating resistances are incorporated into this instrument to ensure rapid and efficient heating capabilities. This advanced temperature control system guarantees accurate and reliable results for your testing needs.

THEORY/METHOD

Safety Features

The instrument is equipped with several essential safety measures, including:

- Class 1 Safety switch that prevents dies closure unless the safety panel is secured.
- Safety Push-button for immediate intervention if necessary.
- Safety lock on the maintenance access door, ensuring secure operation even in unconventional conditions.
- CE Labelling, certifying compliance with safety standards.

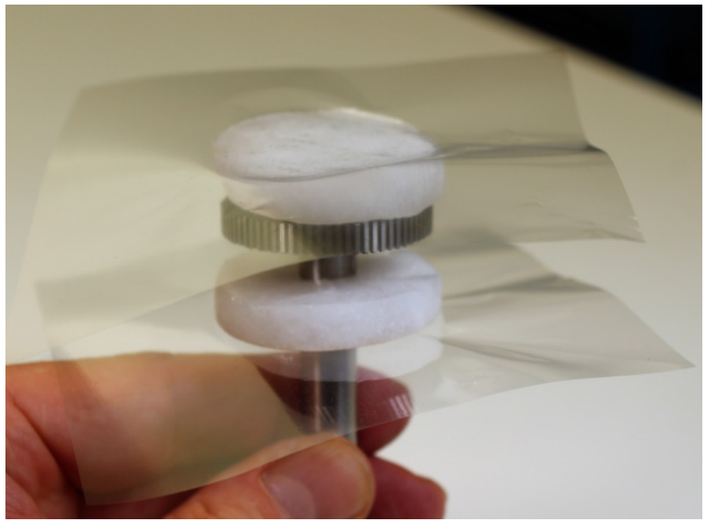
These comprehensive safety components are designed to create a secure operating environment, prioritizing the well-being of users and the overall testing process.

Effortless Instrument Cleaning

The instrument is purposefully designed for effortless cleaning of the test chamber. Technical enhancements include:

- Seal design to prevent the rubber from flowing beneath the rotor.
- Simplified rotor removal through pneumatic ejection.
- Top-to-bottom accessibility of the shaft housing hole for convenient cleaning.
- Cleaning procedures that do not necessitate rotor height adjustments.

These innovations ensure that maintaining the instrument's cleanliness is a seamless process, optimizing its functionality and overall performance.



THEORY/METHOD

Design and Manufacturing Excellence

The Rebound Tester – Rebound Resilience Tester undergoes complete development and manufacturing at our WorldofTest partner, Gibitre's state-of-the-art facility in Italy, Europe and it's supported globally.

All mechanical component is crafted within the company's own workshop. To ensure the utmost measurement reliability, components and sensors from reputable brands are thoughtfully chosen.

A team of skilled in-house experts oversees every production phase, encompassing assembly, start-up, calibration, packaging, shipment, and installation. This comprehensive approach guarantees a product of exceptional quality, backed by a commitment to precision and excellence.

Accessories to Enhance Your Testing Experience

Film Foils for Mooney Tests

Polyamide or Polyester Film sheets are designed to shield the dies during testing, ensuring optimal performance and longevity.

Volumetric Cutter

A cutting-edge tool for crafting test samples with consistent volume, supporting accurate and standardized results.

TECHNICAL SPECIFICATIONS

Reference Standards	
STANDARDS THE INSTRUMENT COMPLIES WITH: ASTM D1646; ASTM D3346; ISO 289-1; ISO 289-2; ISO 289-4; GOST 10722-76; JIS K_6300-1;	
Mooney Viscometer – Mooneycheck Drive Characteristics	
TYPE OF TESTS PERFORMED Viscosity, Scorch, Stress Relaxation	TORQUE SENSOR Capacity: 230 MU Resolution: 0.01 MU Linearity Error (%FS): +-0.25
TEMPERATURE Between room temperature and +230 °C Resolution 0.1 °C	FREQUENCY OF ROTATION With variable speed option: adjustable between 0.01 to 20 RPM
Software	
NUMERICAL TEST DATA Viscosity test: MU_ini, t_ini, MU_min, t_min, Dt_MU, MU_4, MU_X, 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%	UNITS Torque: Mooney Point (MU) Time: minutes and seconds, minutes and minutes/100, seconds Temperature: °C, °F
TEST CURVES Torque versus time curve, Log Mooney versus Log time of Stress Relaxation test, Upper and Lower Test Chamber temperatures	
RESULTS STORAGE The test result sand the curves are stored in the SQL Gibitre data-base which is installed in combination with the software	SOFTWARE USAGE LANGUAGES Italian, English, French, Spanish, German, Portuguese, Russian, Chinese, Japanese, Turkish, Polish, Czech

TECHNICAL SPECIFICATIONS

Control Panel	
DATA DISPLAYED Active connection to the software, motor on-off, temperatures of the dies, heating status, test running	TYPE OF DEVICE Capacitive-Touch-Screen display (permits the use with gloves)
CHARACTERISTICS Dimensions 10.2”	
Light Panel	
PERMITS TO CHECK FROM A DISTANCE THE FOLLOWING STATUSES Instrument ready, instrument under test, instrument setting test temperature	
Safety Devices	
SAFETY DEVICES Class 1 Safety switch for main piston (Idem) Safety Pushbutton Safety lock of the maintenance access door CE labelling	LABELLING CE Labelling
Calibration	
AUTOMATIC CALIBRATION SYSTEM Calibration weight integrated with the instrument with pleumatic lifting system for automatic torque calibration	CALIBRATION REPORT Calibration report with traceability to primary standards in conformity with the Calibration requirements specified in ISO 289-1 standard

TECHNICAL SPECIFICATIONS

Construction Characteristics	
ELECTRONIC CARD Electronic card with STN 32F 429 micro-processor	POWER SUPPLY 220 VAC ± 10%, 50-60 Hz ± 3, 4 A, single phase 110 VAC ± 10%, 60 Hz ± 3 on request
ELECTRICAL POWER 1100 Watt	COMPRESSED AIR 6 bar
DIMENSIONS OF INSTRUMENT (Width x Depth x Height) 684 x 671 x 1419 mm	WEIGHT 180 Kg
Personal Computer (optional)	
PERSONAL COMPUTER (OPTIONAL) Minimum Configuration: Intel Core i5 4 GB RAM. Compatible Operating Systems: Windows 10; Connection to the instrument via USB Cable (included)	
Options	
VOLUMETRIC DIE CUTTER For the preparation of samples with constant volume	
Film for testing	
BOXES WITH FILM FOILS Thickness: 0.023 mm Dimension: 100 x 100 mm Box Content: 500 foils The boxex are supplied in couples. One box contains 500 standard foils. The other contains 500 foils with central hole for rotor insertion	

QUALITEST™

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