Moving Die Rheometer (MDR)

Standards: ASTM D5289, ISO 6502, DIN 53529

- ULTIMATE USER-FRIENDLINESS
- LEADING DEPENDABILITY AND RELIABILITY
- STRICT COMPLIANCE WITH INDUSTRY STANDARDS
- STOCKED CONSUMABLES AND SPARES
- TRUSTED AFTER SALES TECHNICAL SUPPORT
- LIFETIME PRODUCT SUPPORT ADVANTAGE

GET A QUOTE

Description

The Moving Die Rheometer is a new development to the Oscillating Disc Rheometer solution. The unit meets ASTM D5289, ISO 6502, and DIN 53529. Repeatability also means your data is consistently reproducible from instrument to instrument and factory to factory, worldwide. Your data doesn't shift just because your time zone does.

NextGen's MDR is custom-designed and manufactured to withstand any continuous production environment. Offering robust durablility, repeatabily and most importantly a peace of mind. The NG-MDR Moving Die Rheometer is your solution for accurately assessing the curing and processing characteristics of vulcanized rubber compounds. Designed for precision, this state-of-the-art rheometer captures the characteristic curve and parameters of rubber vulcanization by measuring the torque applied to the oscillating die.

The NG-MDR rotor-free vulcameter stands out for its exceptional stability, delivering consistent and reliable results every time. Operating on a straightforward principle, the moving die rheometer works by placing a rubber compound sample in a sealed test cavity under positive pressure at an elevated temperature. A Rotor (oscillating disc) is embedded in the sample and oscillates through a small, specified rotary amplitude. This action applies a shear strain to the test piece, and the force (torque) required to oscillate the disc is directly

related to the stiffness (shear modulus) of the rubber compound. Read more in our latest MEGA BLOG!

Moving Die Rheometer Functionality

- Database functionality can store your curves, drawings and results for printing at any time.
- Allows you to export your testing results in Excel format.
- It has multiple analysis functions like statistics, deviation setting, standard curve setting, and CPK statistical calculations
- Interface allows for local zoom and curve comparison
- It has such functions as selection of any vulcanization time, range selection and screen capture.
- It can reanalyze your previous test data, and increase or modify the reports according to the users requirements
- Multiple data sequences provide convenient ways for data retrieval

Watch Video

Watch the Moving Die Rheometer (MDR) product video.

WATCH ON YOUTUBE

Features and Applications

- Rugged Construction: A durable machine frame designed to deliver the most stable readings, no matter the conditions.
- Sealed, Fanless Housing: The fanless and sealed design effectively prevents debris from infiltrating critical systems, ensuring long-lasting performance.
- Wearless Torque Drive: Equipped with the wearless direct torque drive motor, this machine offers unmatched precision and durability.
- Customizable Strain Modification: With software-programmable strain modification ranging from 0.01° to 5.0°, you can adapt the testing to your specific needs.
- Advanced Diagnostics: The NG-MDR includes internal diagnostic and condition monitoring routines, keeping your equipment in optimal condition.
- Optional Cooling Systems: For enhanced versatility, optional cooling systems are available to meet specific testing requirements.

Testing Curve and Results

- ML - Minimum torque (dNm) - Measures value of the vulcanization characteristic (viscosity) of the unvulcanised test sample
- MH - Maximum torque (dNm) - Measures value of the shear modulus or rigidity of the fully vulcanized test sample. This includes the maximum torque of the flat curve and titration curve as well as the maximum torque when the flat and titration curves don't appear within the given time.
- Ts1 (Minimum) - Time in which the torque is increased to ML + 1dNm when the swing angle is 0.5° or 1°
- Ts2 (Minimum) - Time in which the torque is increased to ML + 2dNm when the swing angle is 3°
- Ts10 (Minimum) - Time in which the torque is increased to ML + 10(MH-ML)/100dNm
- Ts30 (Minimum) - Time in which the torque is increased to ML + 30(MH-ML)/100dNm
- Ts60 (Minimum) - Time in which the torque is increased to ML + 60(MH-ML)/100dNm
- Ts90 (Minimum) - Time in which the torque is increased to ML + 90(MH-ML)/100dNm, reflecting the optimum vulcanization of your testing specimen

Moving Die Rheometer Standard Configurations

- Sealing rings: 10pcs
- Heating plate: 2pcs
- High temperature paper: 3 copies
- Desktop (PC): 1 set
- Printer: 1 set
- Hexagonal wrench: 1 set

Technical Specifications

Temperature Range	Room Temperature to 22°C - 200°C
Temperature Accuracy	Within ±0.3°C
Temperature Display Resolution	0.01°C
Oscillation Frequency	1.6Hz, (100r/min)
Heating Rate	120 °C / min
Torque Range	0 - 20nm
Minimum Torque Reading	0.001nm
# of Swing Angles	± 0.5°C ± 1°C ± 2°C (standard matching angle 1 degree)
Swing Angle	100r / min (1.66hz)
Control	Computer Controlled
Communication Mode	COM Port
Air Pressure	65psi (4.6 bar) - Not including air compressor
Specimen Dimensions	5cm
Display	NextGen Software
Dimension (W x D x H)	51.5 x 22 x 24.5" 131 x 56 x 62cm
Weight	498lbs / 226kg

Power	110V/60Hz or 220V/50Hz 1000 W

GET A QUOTE