

Moving Die Rheometer



The VluChem’s moving die rheometer (MR-10) for determining selected vulcanization characteristics of vulcanizable rubber compounds using rotorless sealed torsion meter and measured according to ASTM D 5289, ISO 6502-3 and KS M ISO6502.

MR-10 may be used for quality control in rubber manufacturing processes, for research and development testing of raw-rubber compounded in an evaluation formulation, and for evaluating various raw materials used in preparing rubber compounds.

The instrument is equipped with the highest torque measurement, reliability, along with stiff hardware, superior heater, temperature sensor, temperature controller and VluChem’s own designed data acquisition device and software.

Designed to be placed on a desk instrument and is supplied with the VluChem’s own data analysis software for test management, data recording and printing, automated Pass/Fail testing as well as recall processing of historical data, also available an online upload software as an option.

Model	MR-10
International Standard	ASTM D 5289
	ISO 6502
	KS M ISO 6502
Motor	Induction Motor
Die configuration	Biconical, closed die system, sealed
Oscillation frequency	1.67Hz
Oscillation angle	0.5°[Option]1°, 3°, 5° Mechanically adjustable

Protection for operator Temp. shield screen moving	Before test chamber closing
Test chamber moving	By Pneumatic
Motor Platen operation	available by hardware & software
Temperature control	available by hardware & software
Temperature range	microprocessor controlled RT ~ 220°C
Temp. Sensor Type	PT 100 Ω
Torque range	0~ 200 dNm
Calibration	Calibration jig
Data	Torque[dNm, lbf.in] Temperature [°C] MH, ML Ts1, Ts2, Tc10(N), Tc50(N), Tc90(N) Automatic test results pass/fail function Trend graphs Tolerance limits by time and torque Data excel export function, Average, S-Dev
Pneumatics	min 4.5 bar/60 Psi
Electrical	200~230V, 3A, single phase, 50Hz/60Hz
Emergency Button	
Dimension	W615 X D685 X H1200 mm
Weight	110 kgs

Moving Die Rheometer (ASTM D 5289 ISO 6502)

Model : MR-10

Vluchem Ind introduces a complete line of new instruments for the measurement of physical properties of polymers, and rubber compounds at all classes of manufacture.

The polymer testing instruments include Oscillating Disk Rheometer, Moving Die Rheometer [Automatic], C-set, Mooney Viscometer, Aging Chamber, Automated Lab Press, Universal Testing Machine and Automatic IRHD Hardness Tester.

Vluchem Instruments polymer testing systems are manufactured to exacting mechanical standards and with the latest measurement technology for the most accurate, reliable and reproducible data available.

The Vluchem's MDR -10, Moving Die Rheometer is a reliable, accurate and easy to operate rheometer suit for routine and standards testing of rubber curing.

The MDR-10 uses sealed biconical dies meeting all relevant ASTM and ISO standards.

The Vluchem's MDR-10 is excellent to operate the stage for QC and R&D circumstances.

*** Improved Test Precision

Significantly less operator influence on test results

Greater sensitivity to rubber compound variations

Test chamber in compliance with international standards

Direct test chamber heating controlled by thermoregulators with PID microprocessor

Instrument can be connected to a PC

⊙ Instrument Characteristics

1. Digital temperature display on instrument front panel
2. Motor, Platen physical switch on instrument front panel
3. Set to the desired temperatures to test and automatic control system regulates and maintains the set point temperatures.
4. Easy testing and maintenance.
5. Operator safety by Thermal Shield
6. Direct test chamber heating controlled by PID microprocessor
7. Test chamber in compliance with international standards.
8. Heat efficient platens
9. The hole on the top of the instrument for the fume ejection system

⊙ Control Software System

1. Friendly use Windows 10/8/7 based program

2. Management of test results, multi graphical presentation, Tolerance, Test results displays as acceptance and false function, Average and Standard deviation, export Data results to MS-Excel Program.
3. Display test results as acceptance and false using tolerance
4. Saving of data and test curves recall function
5. Fixing tolerance for each significant point for each compounds and test procedure with graphic display and various color results for each test.
6. Tolerance limits can be entered manually
7. Graphic analyses of curves and tolerance (Quality Control Box)
8. Various colour graphics for each test.
9. Automatic Platen off function after finishing test and alarm function
10. Automatic motor on and off function after finishing test
11. Trend graph – MH, ML, TC10,50 and 90 – Selectable Max 3 items.
12. ERP [main server computer] system by real time uploading [Option]

☉ **Specification for Instrument**

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|---|--|
| 1. Standards the instrument complies with | : ASTM D 5289 ISO 6502 |
| 2. Power | : 220V, 50/60Hz, 3A Single Phase |
| 3. Oscillating Frequency | : 100 Cycle/min [1.7Hz] |
| 4. Oscillating Angle | : 1°, 3° and 5°
: and 0.5° [option] |
| 5. Temperature Range | : Max. 200 °C |
| 6. Temperature Tolerance | : 0.1 °C |
| 7. Temperature Control | : PID control |
| 8. Temperature Probe | : Pt 100 Ω |
| 9. Air Pressure | : 4.2kgf/cm ² (60psi) |
| 10 Operating System | : Computer |
| 11. Operating Program For Windows | |
| 12. Data Report | : Max. torque (MH), Min. Torque(ML)
Scorch time (ts1,ts2), Cure time (tc10,50,90) and
Quality results, date, Torque, Temperature, Average, S-Deviation |
| 13. Statistics | : Data files for excel |
| 14. Dimension | : 615W x685D x 1200H |
| 15. Weight | : 110kg –Net |