Prescott instruments

Rheoline Multi-Function Rheometer

The **Rheoline Multi-Function Rheometer (MFR)** is designed to deliver reliable results to the most precise accuracies with an extensive range of test stages or operations. It is capable of fulfilling tasks of both a Moving Die Rheometer (MDR) and a Dynamic Shear Rheometer (DSR), providing vital analytical and statistical data of elastomeric properties to the finest detail, making this the ultimate choice for any polymer specialists.

The instrument can be used firstly at lower temperatures and frequencies to study the process of polymers, secondly as a standard MDR and thirdly as a dynamic mechanical analyser to evaluate the cured properties of materials.

This dynamic rubber testing instrument utilises a new generation In-line Servo Motor coupled with digital servo drive technology, together with our acquisition and analysis Labline Software; which has fantastic flexibility and provides a wide range of test conditions with unlimited' test methods.

The temperature control of the dies is better than its rivals, giving an impressive variation of ± 0.03 ° from the set point. This instrument comes complete with an ***Air Cooling System*** as standard to assist the operation of a ***Temperature Sweep***.

Modes of Operation:

- Frequency Sweep
- Temperature Sweep
- Strain Sweep
- Standard MDR mode
- Pre-set test specifications
- Conditioning steps
- Linked tests

Parameters Calculated:

- Elastic Torque, S'
- Viscous Torque, S"
- Complex Torque, S*
- Pressure P
- Loss Angle, delta
- Storage Shear Modulus, G'
- Loss Shear Modulus, G"
- Complex Shear Modulus, G*
- Loss Factor, Tan delta
- Dynamic Complex Viscosity, n*
- Real Dynamic Viscosity, n'

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Technical Specification:

Standards	ISO 6502 / ISO 13145 ASTM D5289 / ASTM D6048 / ASTM D6204 ASTM D6601 / ASTM D7605 DIN 53529
Die System	Biconical, Fully Sealed
Die Gap	0.45 mm nominal
Torque Device	Reaction transducer in upper platen
Closing System	Soft closing to reduce breakage of film and distortion of sample
Drive System	In line servo-motor and Aerotech digital controller
Calibration Device	Torsion spring
Oscillation Frequency	0.001 Hz to 50 Hz
Oscillation Amplitude	± 0.001° to 360°
Cooling Rate	Forced air: 20 °C/min
Temperature Range	Ambient to 250 °C
Temperature Control	3 term PID, control accuracy +/- 0.03 °C
Temperature Units	Celsius or Fahrenheit
Pressure Units	Lb/sq.in or Kg/sq.cm
Time Units	Min/Seconds or Minutes/Decimal
Torque Range	0.001 to 250 dNm
Torque Units	In/Lbs or DNm
Electrical	Single Phase 220/240V 50Hz | 110V 60Hz | 350 VA
Pneumatics	Filtered Air, Min: 0.41 Mpa | 60 psi | 4.14 Bar| 4.2 kg/cm
Weight	250 kg
Dimensions	575 mm x 570 mm x 1280 mm (W x D x H)
PC Specification	Pentium processor, Fully networkable
Optional Extras	Automation Module (4/16 samples) Rheoline Volumetric Sample Cutter

Quality sample preparation

It is strongly recommended that your samples are prepared with our Rheoline Volumetric Sample Cutter

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prepared with our Rheofine Volumetric Sample Cutter which is available from Prescott Instruments Ltd. Please see our brochure for more information.