



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  $\pm 0.03^\circ$  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,  $n'$

# Rheoline Multi-Function Rheometer

Technical Specification:

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



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