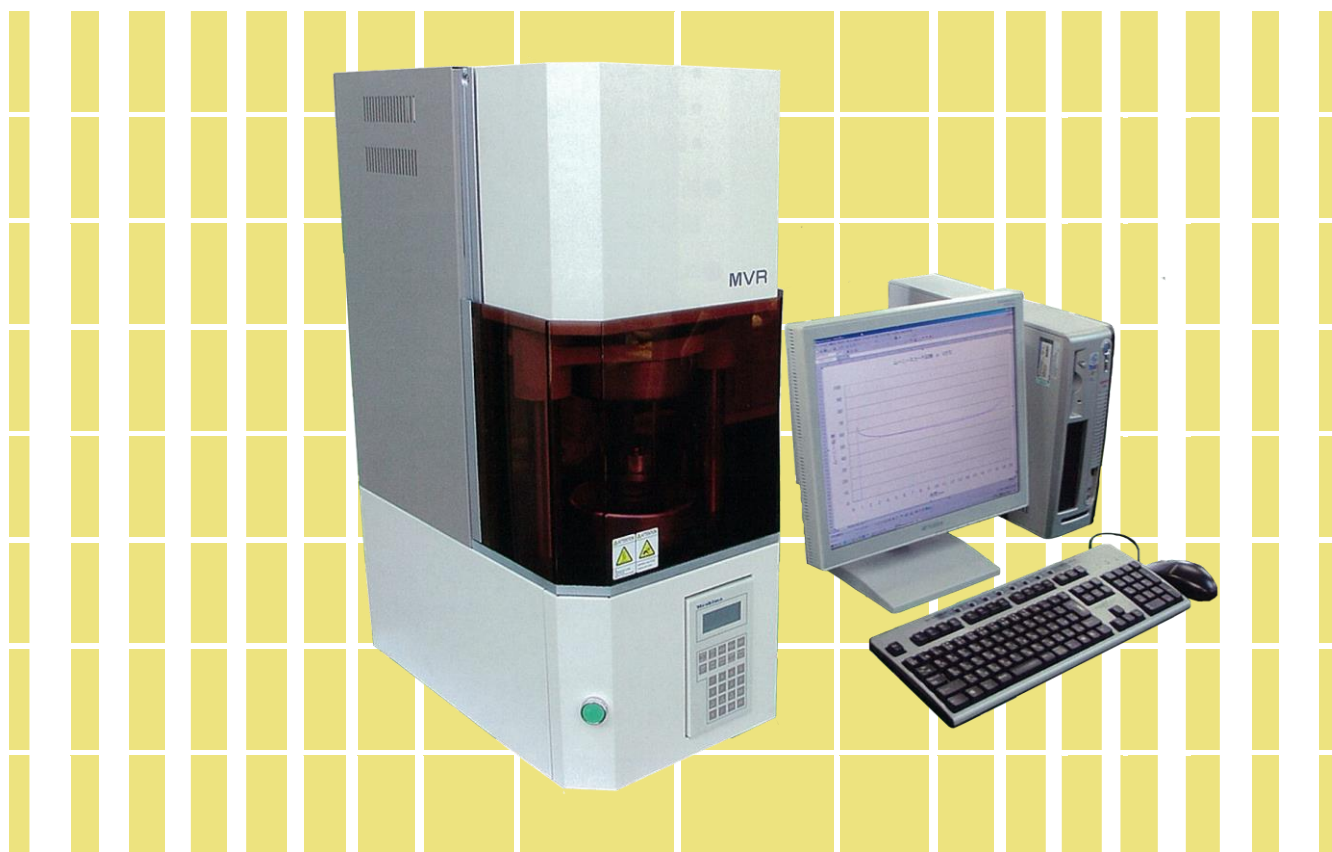




限りある資源と美しい自然を大切に

# MVR SERIES VR-1130

## MOONEY VISCOMETER



UESHIMA SEISAKUSHO CO., LTD.



MVR

(MOONEY VISCOSITY AND RELAXATION TESTER)



## Reference Standard

### JIS K 6300-1, ISO289

Mooney Viscosity and Relaxation Tester, manufactured by Ueshima Seisakusho Co., Ltd., is a testing equipment to measure Mooney viscosity and Mooney scorch time of unvulcanized rubber and refers to Japanese Industrial Standards (JIS) and International Organization for Standardization (ISO). Multi speed and relaxation functions, which are optional, can examine relaxation characteristics of unvulcanized rubber easily, and measurements can be done at three different speeds of the rotor.

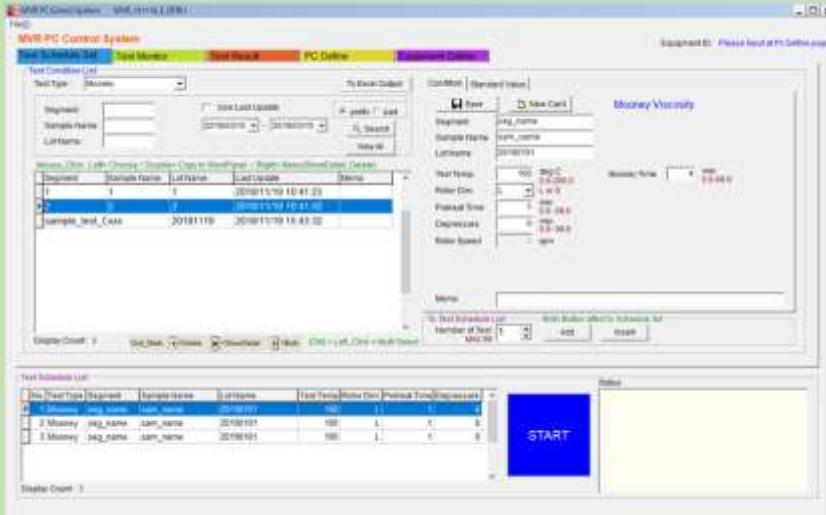
## Application

- Measurement of Mooney viscosity for unvulcanized rubber
- Measurement of scorch time for unvulcanized rubber
- Measurement of Mooney stress relaxation for unvulcanized rubber (MODEL: VR-1132)

## Outstanding Features

- Excellent temperature control by 3HD (3Heater Drive). (Film heater adopted and individual heater control by PID control)
  - Shortened warm-up time.
  - Shortened temperature recovery time after installing samples.
  - Excellent repeatability of test results.
- Compact and lightweight (Minimized installation space)
- Simple calibration system
  - Zero and span calibration of torque cell by electric calibrator is possible. (The calibration of test temperature is also possible.)
- Improved accuracy and high reproducibility by combining the new drive system (gearless) and original torque cell.
- Easy operation and data management by PC
  - Real-time display of measurement values
  - Measurement results can be easily exported to spreadsheet software such as EXCEL, enabling easy preparation of reports and making histograms, control charts, etc.
- The unitization of each part enables easy maintenance.
  - Heater, load cell and other input/output related amplifiers are unitized into a PCB in the equipment.
  - Unitized spare parts (partly)
- Multi step rotor speed / relaxation type (Model: VR-1132) has various measuring modes.
  - Wide speed range of the rotor (0.1 to 20rpm)
  - Rotor speed can be changed up to 3 stages at any speed. (STEP Test)
  - Displays and outputs Mooney value and relaxation decay time in every STEP.

## Test Condition Input Screen of PC



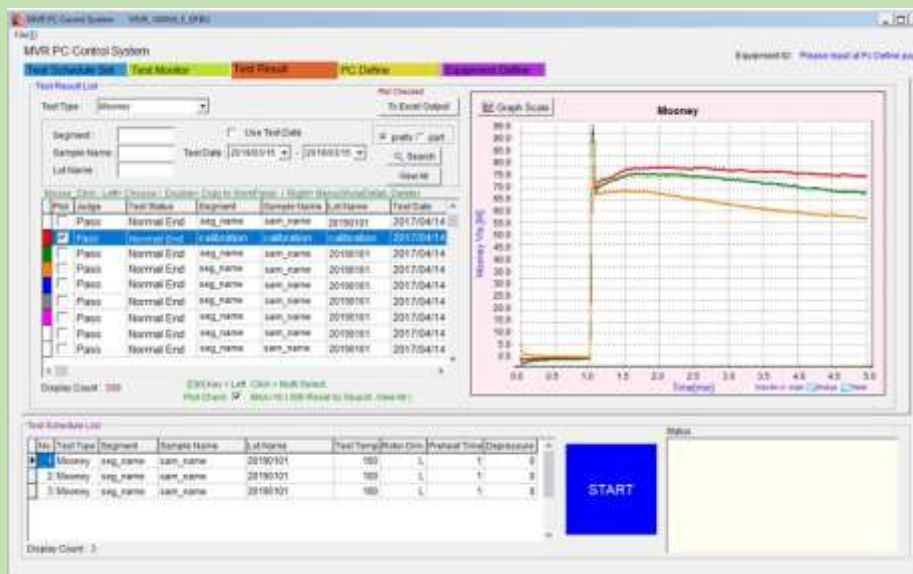
### Mooney Test

<Input Items>

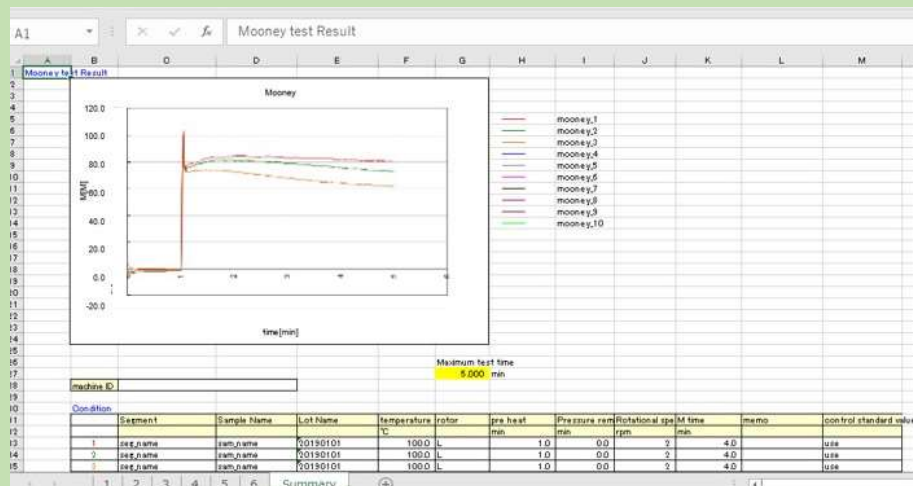
- ① Test Temperature
- ② Rotor Type
- ③ Preheating Time
- ④ Pressure Release Time
- ⑤ Mooney Time

## Data Base

### ● Test Result Confirmation Screen



### ● Test Results Exported to EXCEL



# MVR Standard Type (VR-1130)

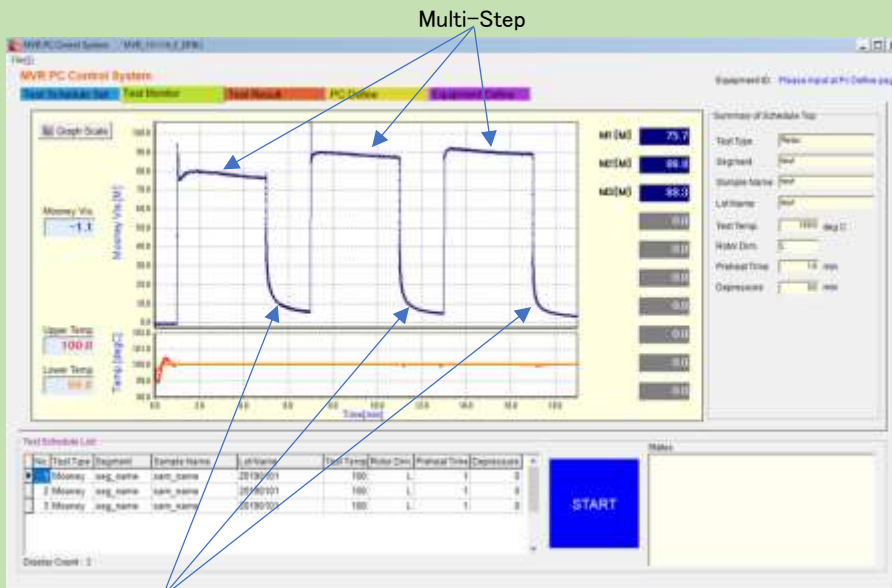
## ◆ Scorch Test



<Scorch Time>  
Three points can be set.

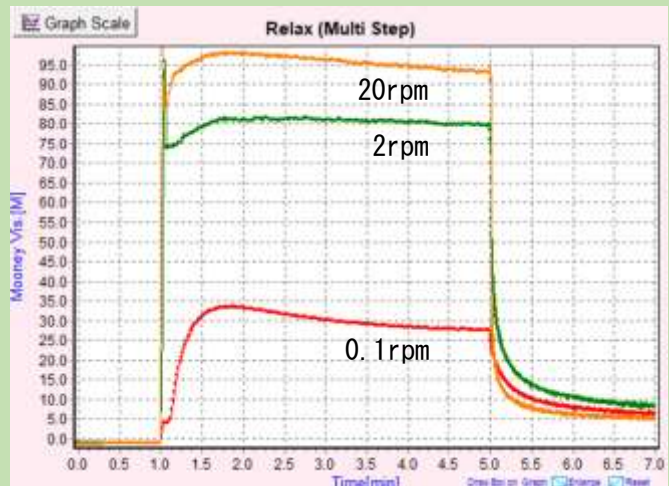
# MVR Multi-Step Speed / Relaxation Type (VR-1132)

## ◆ Multi-Step Rotor Speed / Relaxation Test

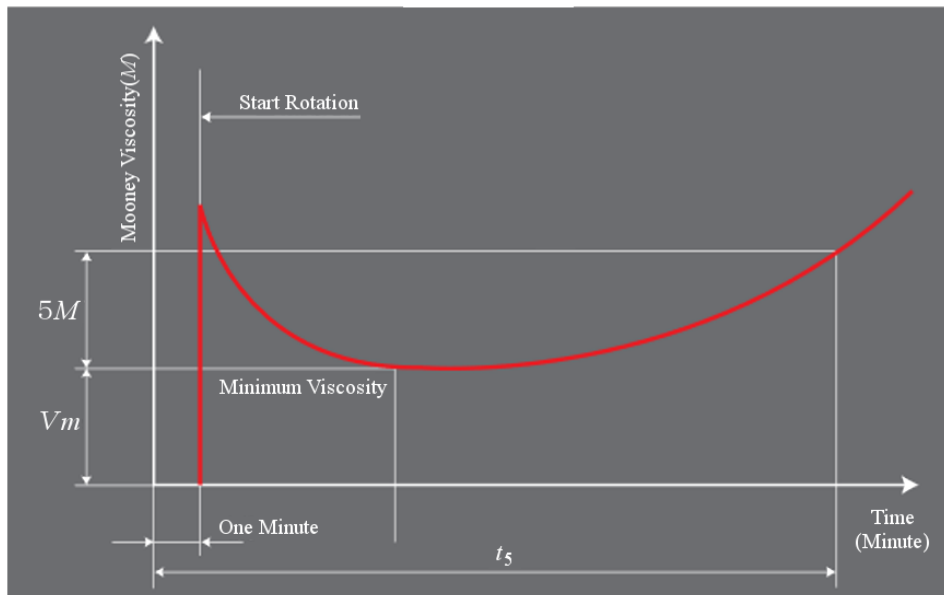


Relaxation

<Multi-Speed / Relaxation※ Setting>  
Multi-Speed Setting: Up to 3 stages possible  
Speed: Can be set from 0.1 to 20rpm  
(for each step)  
※Sampling 0.1sec



# Measurement Principle



## ● Standard Type (Model: VR-1130)

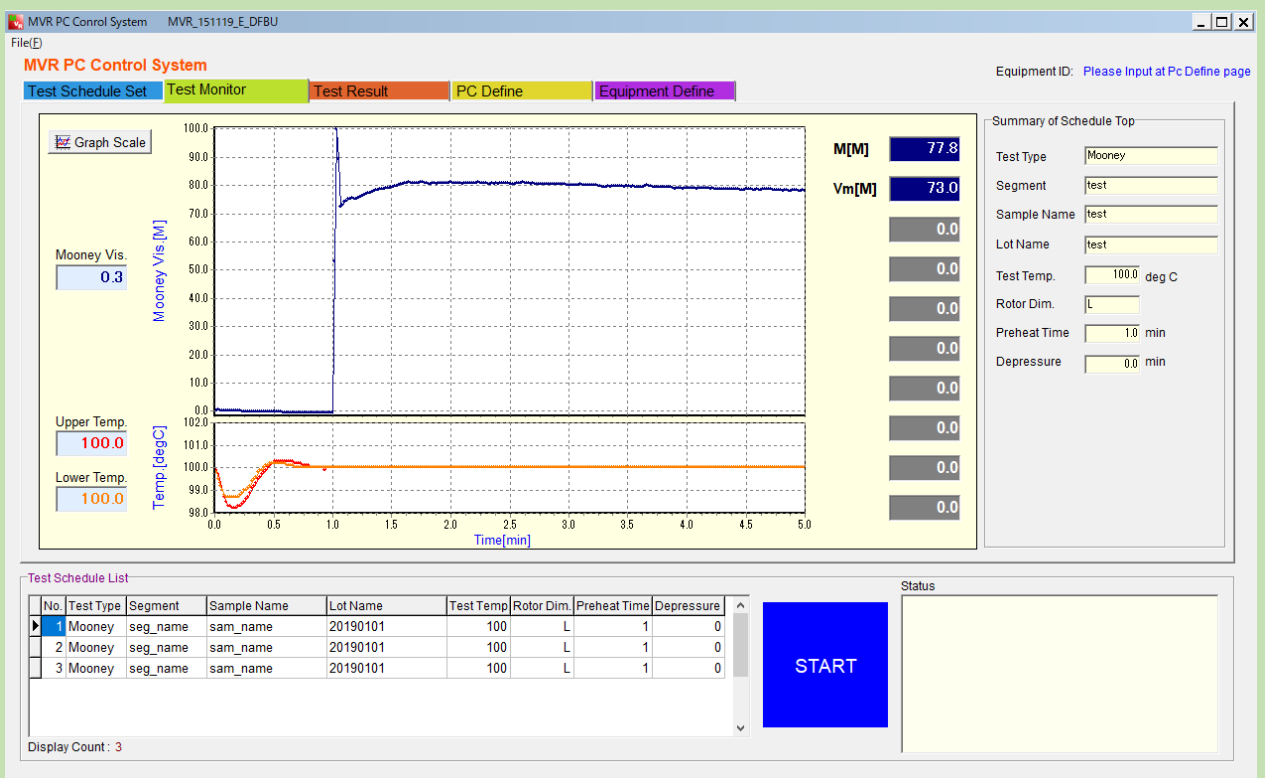
Unvulcanized rubber is placed between the upper and lower dies sandwiching the rotor under the specified temperature, and the Mooney viscosity and Mooney scorch time are obtained by measuring the torque change of the rubber while the rotor is rotated.

## ● Multi-Speed and Relaxation Type (Model: VR-1132)

It is used as an index of processing characteristics of unvulcanized rubber. After the Mooney test is completed, the rotor is completely stopped, and the stress relaxation characteristic of the rubber is measured at intervals of 0.1 second and expressed in Mooney value.

## MVR Standard Specification (VR-1130)

### ◆ Mooney Viscosity Test



## Specification

MODEL	VR-1130	VR-1132
Name	MVR (Standard type)	MVR (Multi-step type)
Reference Standard	JIS K 6300-1, ISO 289	
Shape of Die	V-shaped Groove Type (Option: Square-Shaped Groove Type)	
Pressure Method	Pneumatic Cylinder	
Rotor Speed	2±0.02rpm	0.1 to 20rpm
Shape of Rotor	L-Rotor and S-Rotor	
Torque Detector	Torque Cell	
Maximum Mooney Viscosity	400M (33.2N·m)	
Test Temperature	50 to 200°C (Accuracy ±0.3°C)	
Heating Method	(1) Film Heater 2pcs (One Each on Upper and Lower Dies) (2) Auxiliary Heater 1pce	
Temperature Detector/Control Method	Pt100 3pcs / PID Digital Display and Setting	
Testing Time	(1) Mooney Measuring Time: 0 to 99.9minutes (2) Scorch Display Time: 1 to 99.9minutes	
Shield Cover	Colored Acrylic	
Safety Device	(1) Two-hand Press Start Switch System (Needs two hands to lower the cylinder.) (2) Torque Cell Over Torque Prevention Mechanism (400M max.) (3) Overheat Prevention Mechanism (Heater OFF at 220°C or higher)	
Communications	RS232C	
Utility	(1) Power Source: AC100V Single Phase 1.1kVA (2) Air Source: Dry Air 0.45 to 0.7MPa	
Dimension & Weight	Approx. 333 (W) × 520 (D) × 780 (H)mm, Approx. 105kg	
Standard Configuration	(1) Equipment Main Unit 1set (2) Accessories 1set (Control Software, Calibration Kit, Special Tools)	

● The PC is basically to be provided by the customer. The following PC specifications are recommended.

OS : Windows 10 or later   CPU : Intel Core i3 or higher   Memory : 8 GB or more   Storage : 256 GB or more  
 Serial port × 1  
 Display : 1280 × 1024  
 Software : Microsoft Excel

UESHIMA SEISAKUSHO CO., LTD.

<Manufacturer>

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※Please be noted that the contents in this brochure may change without prior notice due to improvement of the equipment. 027-468686-9