Viscosity



Mooney Viscometer Mk III Calibration Kits

Wallace offer calibration kits to regularly verify the operation of the Mooney Viscometer as part of good laboratory practice. This requires the verification of both torque and temperature.

The Torque Calibration Kit consists of:

- Weights to simulate torque
- Frame to suspend weights
- Drum rotor to attach weights



The Temperature Calibration Kit consists of:

- Custom temperature sensor to measure both platens
- Dual channel digital thermometer



Principles of Operation

Torque

In normal operation the rotor is rotated within a sample, the sample has resistance and so the rotation of the rotor generates torque. This torque is measured and the result is expressed in Mooney units. To calibrate the instrument the sample resistance is simulated using weights. These are suspended on a frame using wire cables attached to a spool. The spool is located in place of the rotor. When the motor is started, the spool winds in the weights and they simulate 100 Mooney units.

Temperature

The temperature block is placed between the platens and the platens are closed. The temperature of the platens is displayed on the digital thermometer.



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Mooney Viscometer Mk III Calibration Kit

Specifications

Torque

Calibration Kit		
Part Number	WAV3/CAL KIT	
Kit Box Dimensions (mm)	180(h) x 600(w) x 500(d)	
Kit Weight	38kg	

Included		
Calibration Weight	2 off	
Pulley Assembly	1 off	
Rotor Height Gauge	1 off	
Calibration Frame	1 off	

Temperature

Calibration Kit		
/9-320		
5(h) x 235(w) x 200(d)		
40g		
5		

Included		
Temperature Sensor Unit	1 off	
Dual Input Thermometer	1 off	

Standards

ISO 289-1, ASTM D1646



Viscosity Mooney Viscometer Mk III

The Mooney Viscometer Mk III measures and records the viscosity of natural, synthetic or compounded rubber.

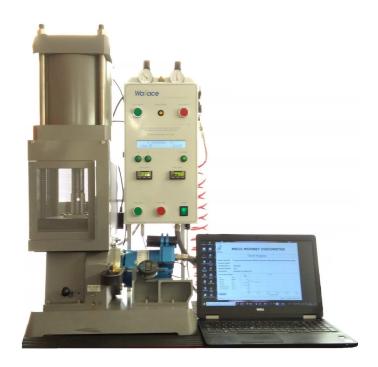
Features

- Simple and robust mechanical system producing reliable results
- Precise digital temperature control
- All digital versions come PC enabled as standard

Principle of Operation

Conforming to international standards, the Mk III is a shearing-disc viscometer in which the rubber sample is compressed pneumatically in a cylindrical chamber formed by cavities in 2 opposing dies.

The viscosity is determined by measuring the torque required to turn the rotor inside the chamber, which is heated to a set temperature. As the rotor shears the sample, a torque reaction is transmitted through a worm shaft, which deflects a torsion beam. A digital dial gauge measures the beam's displacement. With its simple mechanical drive system and well-proven design, the Mk III has been in use for many years and has become the workhorse for many laboratories.



	I MOONEY V	SCOMET	ER
	Test In Progre	55	
Results File Path: C:\Users\U	ser\Documents\Mooney Viscom	eter MK3 Data\Data	Files\Wallace Test 1
Sample Details		Instrument De	tails
Sample Name: BUTYL 301		Port	COM6
Sample Number: 117		Run Mode:	Mooney
Description: Wallace Te	st	Run Time	00:08:00
		Die Temp:	125
		Rotor Size:	Large
Live Data		Live Data	
053.3	150		
Time	90		
	30-		
Can	0 00 01:00 02:00	03.00 04.00 05.00	06.00 07.00 08.00
Version 1.1.0		Liter Me	Constitution of the second

V

MKIII MOONEY VISCOMETER

Main										
New										Clear
			Tes	History - D	ouble click to	o open resu	Its			
Sample Name	Sample #	Description	Run Mode	Run Time	Result	Die Temp	Rotor Size	Time	Date	File Path
BUTYL 375	101	NST 18-18	Mooney	00.08.00	RESULT	125	Large	15:08	18/1/18	C:\Users\Us
BUTYL 375	102	NST 19-18	Mooney	00.08.00	050.7	125	Large	08:41	19/1/18	C:\Users\Us
TEST 01	103	BUTYL 301	Mooney	00:08:00	056.6	125	Large	09:12	25/1/18	C:\Users\Us
BUTYL 301	104	Pre Release	Mooney	00:08:00	048.4	125	Large	12:59	25/1/18	C:\Users\Us
BUTYL 301	105	Pre Release	Mooney	00.08.00	049.6	125	Large	13:11	25/1/18	C:\Users\Us
BUTYL 301	106	Pre Release	Mooney	00.08.00	049.8	125	Large	13:23	25/1/18	C:\Users\Us
BUTYL 301	107	Pre Release	Mooney	00:08:00	049.7	125	Large	13:43	25/1/18	C:\Users\Us
BUTYL 301	108	Pre Release	Mooney	00-08-00	049.1	125	Large	14:09	25/1/18	C:\Users\Us
BUTYL 301	109	Pre Release	Mooney	00.08.00	050.0	125	Large	14:21	25/1/18	C:\Users\Us
BUTYL 301	110	Pre Release	Mooney	00.08.00	RESULT	125	Large	14:34	25/1/18	C:\Users\Us
BUTYL 301	111	Pre Release	Mooney	00:08:00	049.5	125	Large	14:50	25/1/18	C:\Users\Us
BUTYL 301	112	NST 29-1	Mooney	00:08:00	049.6	125	Large	09:29	30/1/18	C:\Users\Us
BUTYL	113	Scorch Test 2	Scorch	50 & 70	RESULT	125	Large	09:44	30/1/18	C:\Users\Us
BUTYL	114	Scorch Test	Scorch	45 & 30	RESULT	125	Large	10:10	30/1/18	C:\Users\Us
BUTYL 301	115	Relax Test 1	Mooney	00:14:00	FAIL	125	Large	13:10	14/2/18	C:\Users\Us
BUTYL 301	116	RT 14-01	Mooney	00:14:00	08:13 48.0	125	Large	13:13	14/2/18	C:\Users\Us

Our Software

- Allows you to follow test results live on screen
- Save all results for future reference
- Compare results on screen
- Print results with one click

Accessories

Standard Accessories:

- Large rotor
- Small rotor
- Tool set

Optional Accessories:

- V3/Cal calibration kit
- S6/15 Mooney sample cutter
- Software
- Printer



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Mooney Viscometer Mk III

Digital models available - versions as specified below:

Digital Model - Standard Version, WAV3/2

• PC interface (RS 232)

Digital Model - Printer Version, WAV3/3

- Same specification as WAV3/2 plus
- Compact printer with high speed print capability
- 24 character column print output

Specifications

Mooney Viscometer Mk III				
Part Number	WAV3/2, WAV3/3			
Dimensions (mm)	810 (h) x 510 (w) x 460 (d)			
Weight	127 kg			
Maximum Power Requirements	1700 VA			
LED screen	2 line, 20 character back-lit display housed in control panel			
Controls	3 sealed switches with integral LED indicators			
Die heating Temp. range	By elements to upper and lower platens. 700W per element 80 - 150°C (±0.1°C)			
Max. torque	Cut out at 200 Mooney points			
Die closure	Using Pneumatic cylinder			
Air line pressure	80 psi or 5 bar maximum			
Gauge	0.0 - 0.5″range. 0.0005″resolution.			
Pressure controls	Twin controls for platen closure and test routine			
Operating Temperature	10 to 40°C; Altitude 2000m maximum			
Humidity Range	10 to 80% RH non-condensing			
X20 Printer (V3/3 Model only)				
Weight	500g + PSU 200g			
Dimensions (mm)	95 (h) x 125 (w) x 195 (d)			

Standards

ASTM D1646, ISO 289-1

