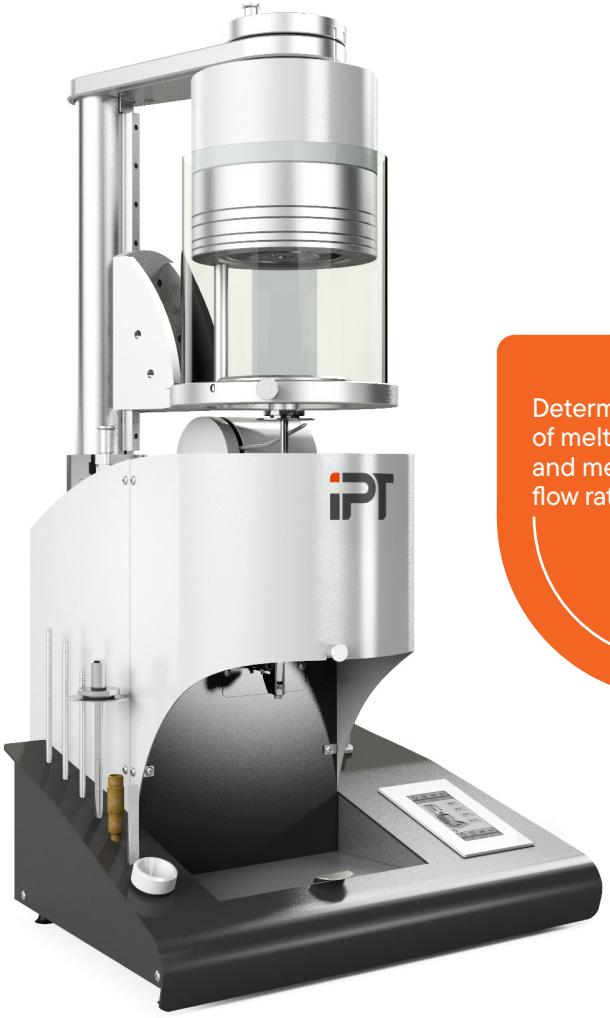
Competence creates Confidence.

Model no. 1709

MFR/MVR TESTER

ISO 1133
ASTM D 1238



Determination of melt flow rate and melt volume-flow rate

The 1709 MFR/MVR tester is used to determine the melt flow rate of thermoplastics. In the basic version, the melt flow rate (MFR) can be determined by manually applying test weights of 2.16 kg and 5 kg. Automatic distance measurement is available as an option for the melt volume-flow rate (MVR). Furthermore, a motorized weight loading up to 21.6 kg as well as an automatic cutting device are available as an option.

The device also has an interface for an analytical balance, which means that the values determined can be transferred directly to the tester.

The proven IPTDatalogging system can be connected via a further interface in order to print out and subsequently archive the test results.

The device is conveniently operated via a built-in touchscreen.

Extensive accessories for cleaning the test channel, nozzle and piston are of course included as standard.

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Defining the flow behaviour of thermoplastics safely

- The basic version can be tested with temperatures between 50 °C and 300 °C. Temperatures of up to 450 °C can be optionally reached.
- The target temperature can be preselected in 0.1 K increments. The regulating accuracy is 0.2 K.
- High temporal and spatial temperature accuracy in the test channel is guaranteed by a self-optimising regulating system using a microprocessor with two separate heating and regulating circuits. For temperature measurement, extremely accurate resistance thermometers (Pt 100) are installed at the height of the nozzle and in the centre of the cylinder.

The touchscreen

- The built-in touchscreen can be used to enter the test parameters, monitor the test and display the test results. The built-in CPU controls the test sequence, manages the testing data, calculates the test results and operates the interfaces for data logging and for an electronic analytical balance.
- A tolerance range can be entered to evaluate the valid measurements.
- Invalid measured values are specially marked in the test report, but are not used to calculate the mean value.

The cutting device

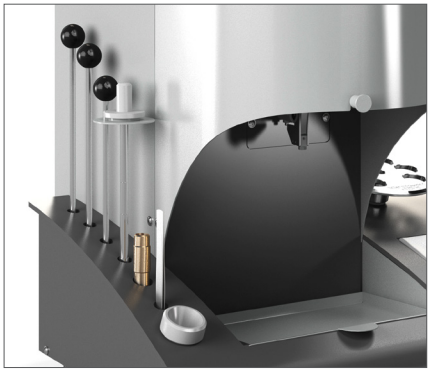
- The cutting device has been taken over from our proven predecessor model. It consists of a cutter head and an electronic control unit. The cutter head carries the blade, which can be moved in two planes. It has a long service life and is easily replaceable. During the cutting process, the knife follows a hysteresis-like curve. This largely prevents the sections from sticking to the knife.
- In addition to the basic parameters, the different test types to perform the MFR tests require the following specific inputs: the time per test section and the number of sections. The MVR tests can be carried out either by specifying the time per measurement or the distance per measurement. No cutting of the test material is required.
- As a special feature, this device offers the option of calculating the corresponding MFR value after an MVR test has been completed. For this purpose, the density of the sample (at test temperature) must be input. It is also possible to determine the density after an MVR test.

The test procedures

- Firstly, the relevant test parameters must be entered on the touchscreen or optionally on the data logger. If a test program has already been saved, it can be accessed by entering the corresponding program number. When the heating phase is complete (readiness is also indicated by an LED and acoustic signal), the sample material is poured into the test channel. The unit then carries out the test automatically after the “Start test” input and starts the actual test automatically after the preheating time.
- During the MFR test and density determination, the test sections are cut off according to the preselected number. The determined weight of the manually weighed sections is either entered on the touchscreen or, if an analytical balance is connected, transmitted directly to the unit. During an MVR test, the volume is calculated using automatic distance measurement.
- At the end of each test, the evaluation is initiated by pressing the ‘Calculation’ button. The test result appears on the display shortly afterwards.

Manual device

Fully automatic device



Device with accessories

Standard features

- Load weights 2.16 and 5 kg
- Manual cutting device
- Data input and evaluation of results via user interface (PC)
- Serial interface (RS232) to the laboratory balance
- Adjustment spirit level for precise alignment of the device
- Broaching piston, cleaning rod and compressor
- Nozzle made of tungsten carbide
- Nozzle cleaner
- Test gauge for the nozzle
- Filling funnel
- Test piston
- Mirror for viewing the cutting area
- Forceps for picking up the samples
- CE conformity

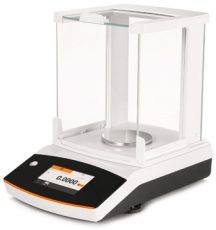
Options

- Automatic cutting device
- Piston path sensor for determining the MVR value
- Additional load weights
  0.325 / 1.2 / 3.8 / 10.0 / 11.6 kg
- Motorised weight application
  (incl. weights 0.325/1.2/2.16/3.8/5.0/10.0/11.6 kg)
- Data input, evaluation and documenting of testing data via IPTDatalogging software (PC)

Version MFR/MVR TESTER

		V1709-0020
Test temperature	°C	50 to 300 in increments of 0.1 °C
Increase of the temperature range	°C	Up to 450
Temperature regulating accuracy		±0.5 °C at the nozzle ± 0.5 °C over the entire usable length of the test channel
Permissible ambient temperature	°C	+5 to +30
Permissible relative humidity	%	Max. 70 Non-condensing
Width x Depth x Height	mm	540 x 440 x 920
Weight (without weight discs)	kg	98
Voltage data		230 V 50/60 Hz Special voltages on request

Accessories MFR/MVR TESTER

Product	Description	Model no.
	Laboratory granulator	1665
	Analytical balance	H3000