



# Model MP1200

Melt Indexers

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# Melt Flow Indexers **MP1200**

Tinius Olsen is proud to introduce the latest addition to its polymer testing line, the MP1200 Melt Flow Tester/Extrusion Plastometer. The MP1200 features the latest in melt flow measurement technology and allows operators to quickly and easily set up and perform melt flow tests, according to ASTM D1238, ISO 1133-1 & 2, and other international and industrial specifications.

The MP1200 is available in two versions: a manual version (Model MP1200), and a motorised version (Model MP1200M). The manual MP1200 comes with everything you need (except weights and laboratory balance) to perform an ASTM D1238 Procedure A (manual cut) gravimetric melt flow rate (MFR). Test loads are applied manually. The MP1200 can be upgraded with optional features, including ISO 1133 tools and an encoder-based programmable piston displacement transducer (or PPDT for short), for testing according to Procedures B & C (ASTM D1238) or for volume measurement tests (melt volume rate or MVR) and melt density calculations.

Also available are manual and automatic specimen cutting tool attachments, which can be used with some materials to reduce human involvement with the machine during the test and increase accuracy and repeatability.

The MP1200M is equipped with a motorised weight lifting and lowering device (WLD) that further automates the testing procedure. The WLD safely and automatically applies test weights to the piston at a user selected time interval during the test. It is also available with the PPDT and cutter options, as well as the Flow Rate Ratio (FRR) attachment for ASTM D1238 Procedure D for polyethylene and the Purge and Purge/Clean options.

Both versions feature a redesigned furnace that uses a three-zone band heater for unsurpassed temperature control ( $\pm 0.1^\circ\text{C}$  from set point) along the entire testing area of the bore, meeting

**Manual MP1200 configured for Method A testing**



the new requirements specified in ISO 1133-2. The furnace also features a quick action die release for easy removal of the die for cleaning after a test.

The MP1200 features a user-friendly color touch-screen LCD display. Operators can configure the options available for the machine and program user settings (language, units, alarms, etc). Individual test protocols can be set and stored for rapid recall when needed. When programming tests, operators have the option of selecting which sample identifiers they wish to use from a preloaded list or can make their own identifier. They can also select which test results they wish to report. Test results are displayed automatically at the end of the test and can be saved or printed out to a printer connected to the MP1200's USB port.

For more sophisticated data collection, the MP1200 works with Tinius Olsen's Horizon software, which can store an unlimited amount of test settings and test results. Test reports and SPC control charts can also be generated.

## SPECIFICATIONS

System	
Conformance	ASTM D1238 and D3364, ISO 1133-1 and -2, BS2782, DIN 53735, JIS K7210
Operating temperature	450°C max
Temperature control	$\pm 0.1^\circ\text{C}$
Spatial temperature variation	$\pm 0.1^\circ\text{C}$
Temperature controller	Three zone PID
Temperature sensors	Platinum RTDs (3)
Timer accuracy	0.001 second
Display	7.1" LCD touchscreen, 800 x 480 resolution
Data entry	Touchscreen display
Communications port	USB
Weights	Stainless steel or Aluminum, $\pm 0.5\%$ tolerance
PPDT-1200 actuating switch	
Transducer accuracy	$\pm 0.025\text{mm}$ ( $\pm 0.001\text{in}$ )
MWLD-1200 motorised weight support	
Transducer accuracy	$\pm 0.1\text{mm}$ ( $\pm 0.01\text{in}$ )
Physical	
Overall dimensions (WxDxH)	458mm/18in x 394mm/15.5in x 521mm/20.5in high for basic unit or 762mm/30in for motorised unit (to top of weight cage, platform lowered)
Net weight	21kg/46lb for basic unit or 32kg/71lb for motorised unit, not including weights or options
Gross weight	32kg/70lb for basic unit or 43kg/95lb for motorised unit, not including weights or options
Electrical	115 or 230VAC $\pm 10\%$ (must be specified at time of order), 50/60Hz single phase, 500W average
CE mark	Conforms to all applicable European CE directives

Specifications subject to change without notice



## Key features

- Three-zone band heater.
- Touch-screen control.
- Quick die release.
- Powerful data analysis and control software.
- USB connectivity.
- Tapered weight design.



Home screen for manual MP1200



Home screen for MP1200M motorised



Program creation screen for automatic time flow and time basis tests.



Test result screen.



Model MP1200M (motorised) shown with Programmable Piston Displacement Transducer and Automatic Cutter.

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## OPTIONAL ACCESSORIES

**Flow rate ratio** Adding this flow rate ratio attachment allows you to determine flow rate using two or three different test loads on one charge of material.



**Cut off tools** Two types of cut off tool are available – a manual cut off or a motorised cut off. The manual cut off (above left) features a crank that the operator rotates when prompted; the motorised cut off (above right) will automatically cut the extrudate at user preset intervals.



**Pneumatic clean and purge** Available as a purge-only accessory or a purge-and-cleaning accessory, these pneumatically operated pistons are used in conjunction with the motorised weight lowering platform for more automated operation of the MP1200M.

## SOFTWARE

Tinius Olsen has built upon its long history of providing solutions to an enormous variety of testing problems to develop Horizon, a comprehensive software program that makes testing simple, precise and efficient.

Whether the test sample is metal, paper, composite, polymer, rubber, textile or a micro-component, Tinius Olsen's Horizon software goes far beyond data collection and presentation. It will help automate operations, from R&D to the charting and analysis of QC testing. Horizon provides a library of standard, specific, and application-focused test routines that have been developed in close co-operation with customers around the world and to the standards they are using.

Among the many valuable features offered by Horizon are: a test routine library; simultaneous multiple machine control; test, output, method and result editors; and multilayered security. This software is designed for data acquisition, data analysis, and closed loop control of nearly all Tinius Olsen testing machines.

Horizon also includes the following:

- Generation of user customized reports
- Standard SPC programs for X-bar, R and frequency distributions/histograms



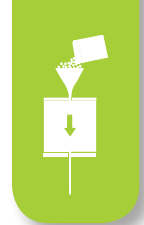
- Ability to recall, replot and rescale test curves
- Recall of data that spans different test modules
- User-configurable machine parameter and control settings
- Multilingual capabilities.

Horizon is rich with capabilities that improve productivity and enable you to build, access and use a modern, powerful materials testing database.

The software employs the latest Windows environments to create an intuitive user experience. Built-in tutorials, online help, and help desk access provide additional user support.







# Selectable Weight System

MP1200 with selectable weight system provides a time saving and safe way to configure a melt flow test. Weights are held and selected from weight cylinder holder and are automatically delivered onto the piston in a controlled way. This means no lifting of masses by the user and is guaranteed to increase throughput.



Weight cylinder holder rotates away from the test area to enable removal of the piston and cleaning.



The required weight is selected by simply pulling the "Plate spade" from the weight cylinder holder and pressing it into the desired slot thus selecting the required weight.



# Selectable Weight System

## COMMON SPECIFICATIONS

System Conformance	ASTM D1238 and D3364 ISO 1133-1 and -2 GB/T 3682 JIS K7210
Operating Temperature	450°C
Temperature Control	+/- 0.1°C
Temperature Controller	Three Zone PID
Temperature Sensors	Platinum RTDs (3)
Time Accuracy	0.001 seconds
Display	7.1" LCD touch-screen, 800x480 resolution
Data Entry	Touch-Screen display
Communications Port	USB
PPDT Accuracy	+/-0.025mm (+/-0.001 in)
Weight Position Accuracy	+/- 0.1mm (+/-0.01 in)
Weights	Additive stainless steel with the following weights: 325g, 1200g, 2160g, 3800g, 5000g, 10000g, 21600g
Net Weight	66 kg (145 lb) including all weights
Gross Weight	72 kg (160 lb)
Electrical	115 or 230 VAC +/- 10%, 50/60 Hz single phase, 500W average
CE Mark	Conforms to all applicable European CE directives

Specifications subject to change without notice.



MP1200 melt flow tester with assisted weight lift option, available as a standard option for all Tinus Olsen MP1200 models or as a field fitted solution for existing motorized Tinus MP1200 units



Weight configurations based on polymer and testing standard requirement are selected and applied in a safe way requiring no user handling.







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