Bulletin
131-D

Tinius Olsen

Melt Plastometer
Model MP1200

Manual Model

Tinius Olsen is proud to introduce the latest addition to it polymer testing line, the MP1200 Extrusion Plastometer (melt flow indexer). The MP1200 features the latest in melt flow measurement technology and allow operators to quickly and easily set up and perform melt flow test according to ASTM D1238, ISO 1133-1 &2 and other international and industrial specifications.

The MP1200 is available in 2 distinct versions, a manual version, model MP1200, and a motorized version, model MP1200M. The manual MP1200 comes with everything you need (except weights & laboratory balance) to perform an ASTM D1238 Procedure A (manual cut) melt flow index tests (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 (MVR) and melt density calculations. Also available as options are Tinius Olsen's manual and automatic specimen cutting tool attachments which can be used with some materials to reduce the human involvement with the machine during the test and increase accuracy and repeatability of test results.

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

Both versions feature a newly redesigned furnace which now uses a 3 zone band heater for unsurpassed temperature control (+/- 0.1^{O}C from set point) along the entire testing area of the bore, meeting 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 set user settings (language, units, alarms, etc.). Up to 25 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 they 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. Horizon can store an unlimited amount of test settings and test results for recall when desired. The operator can also generate test reports and SPC control charts.

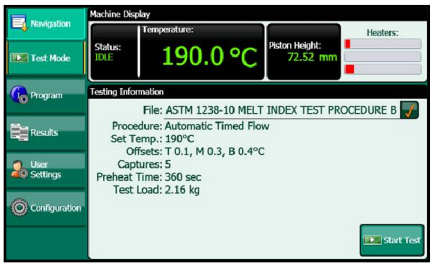


Fig 2. "Home" screen for Manual MP1200

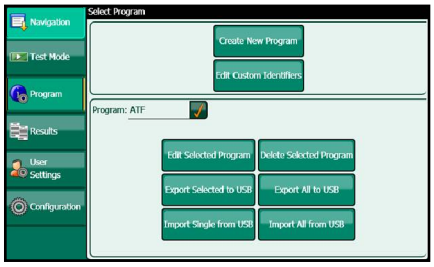


Fig 3. Program selection screen

Fig 1. Manual MP1200 configured for Method A testing

Motorised Model

Fig 4. Motorized MP1200 shown with Programmable Piston Displacement Transducer and Automatic Cutter.

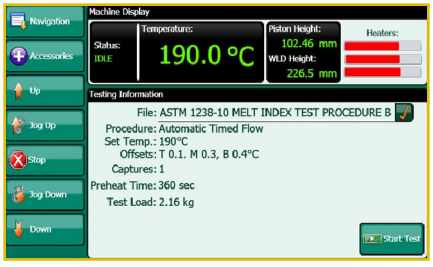


Fig 5. "Home" screen for motorized MP1200

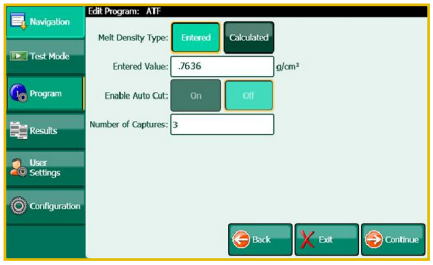


Fig 6. Program creation screen for automatic time flow and time basis tests.

Common Specifications

System

Conformance	ASTM D1238 and D3364, ISO 1133-1 and -2, BS 2782, DIN 53735 JIS K7210
Operating Temperature	450 °C max
Temperature Control	+/- 0.1 °C
Spatial Temperature Variation	+/- 0.1 °C
Temperature Controller	Three zone PID
Temperature Sensors	Platinum RTDs (3)
Timer Accuracy	0.001 second
Display	7.1" LCD touchscreen, 800x480 resolution
Data Entry	Touch screen display
Communications Port	USB
Weights	Stainless steel, +/- 0.5% tolerance

PPDT-1200 Actuating Switch

Transducer Accuracy	+/-0.025 mm (+/- 0.001 in)

MWLD-1200 Motorized Weight Support

Transducer Accuracy	+/- 0.1 mm (+/- 0.01 in)

Physical

Overall Dimensions	458 mm (18 in) wide x 394 mm (15.5 in) deep x 521 mm (20.5 in) high for basic unit or 762 mm (30 in) for motorised unit (to top of weight cage, platform low ered)
Net Weight	21 kg (46 lb) for basic unit or 32 kg (71 lb) for motor ized unit, not including weights or options.
Gross Weight	32 kg (70 lb) for basic unit or 43 kg (95 lb) for motor ized unit, not including weights or options.
Electrcal	115 or 230 VAC +/- 10% (must be specified at time of order), 50/60 Hz. Single phase, 400/800 VA
CE Mark	Conforms to all applicable European CE directives.

Optional Accessories

CUT OFF TOOLS
Two types of cut off tool are available - a manual cut off or a motorised cut off. The manual cut off features a crank that the operator has to rotate when the alarm sounds; the motorised cut off will automatically cut the extrudate once triggered.

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.

PNEUMATIC CLEAN AND PURGE
Available as either a purge only accessory or a purge and cleaning accessory, these pneumatically operated pistons are used in conjunction with the motorized weight lowering platform for more automated operation of the MP1200.

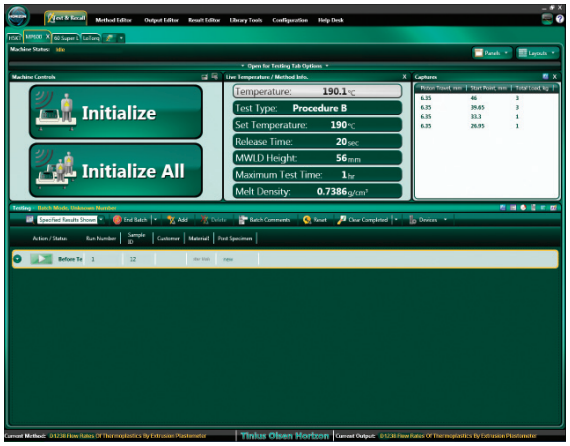
Software

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 you automate your 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 cooperation with our 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. It employs the latest Windows environments to create an intuitive user experience. Built-in tutorials, on-line help, and help desk access provide additional user support.

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