

Brabender®



Complies with:
DIN EN ISO 527
DIN EN ISO 178
DIN EN ISO 179/180
DIN EN ISO 75
DIN EN ISO 604
DIN EN ISO 1183-1
DIN EN ISO 2039-1

Brabender® SpeciT Mold®

Produce specimen in-line



... where quality is measured.

SpeciMold



The conventional way of producing specimen requires several process steps during which the material is subjected repeatedly to thermal stress. This inevitably causes changes in the material structure.

The new procedure with the Brabender SpeciMold now allows to produce specimen in a single step "on-the-fly".

Unwanted material changes are, thus, excluded. Your specimen exactly represents the extrusion product.

Instrument description

The Brabender SpeciMold comprises the following main parts:

- 1 Control panel
- 2 SpeciMold block
- 3 Closing unit
- 4 Collector box
- 5 Height-adjustable castors

Principle

Produce your specimen whenever needed – in-line with the running extrusion process.

The Brabender SpeciMold offers a unique and comfortable quick method for your extrusion process. Whenever you want, the machine continuously produces specimen from the extruded polymers or polymer blends – fully automatically, without any bypass or additional process steps, directly from the ongoing compounding process.

Application

The SpeciMold is subdivided into the heated SpeciMold block with the piston and the injection die, and an injection mold which can be opened and closed through a toggle mechanism.

In a classical compounding line, the SpeciMold is positioned between the twin screw extruder and the extruder die head.

The polymer is homogenized, molten, mixed and conveyed as usual in the extruder. Then, the melt passes the SpeciMold block before it is shaped in the extruder die head, cooled down in the water bath, and cut in the pelletizer.

Further possible applications of the SpeciMold are extrusion applications such as profile extrusion or film inspection or the determination of the melt viscosity by means of rheometric capillary die heads.

For testing the extruded product already during production, the SpeciMold goes into action. A chamber beside the actual melt channel is slowly filled with the polymer melt. The melt from this chamber is then injected into a temperature-conditioned injection mold where it is cooled down. During this process, the internal pressure of the injection mold is measured continuously. The actual compounding process continues during this process – no interruption required.

This method enables the production of specimen which have exactly the same properties and characteristics as the extrusion polymer and are, therefore, perfectly suited for undergoing further mechanical property tests.

Applications

The SpeciMold suits a large variety of applications:

Material testing

- in research and development laboratories

Quality assurance

- in recipe development
- in additive production
- in compounding lines

Advantages of the SpeciMold

- Suits a large variety of polymers and polymer blends
- Saves time by continuously producing specimen in-line with the ongoing extrusion process
- No changes of the material characteristics caused by a second melting history
- High operating comfort by automated processes
- Editable injection molding parameters
- Quick and easy exchange of the injection mold

Your benefits at a glance

- Modular and innovative
- Saves time during the development process
- Universal application due to compatibility with third-party extruders

Specimen acc. to the following standards are possible:

- Tensile stress
DIN EN ISO 527
- Flexural properties
DIN EN ISO 178
- Impact test
DIN EN ISO 179/180
- Temperature deflection under load
DIN EN ISO 75
- Compressive properties
DIN EN ISO 604
- Density determination
DIN EN ISO 1183-1
- Hardness measurement
DIN EN ISO 2039-1



Flexible test procedure

Profit from the possibility of connecting your SpeciMold either to a Brabender or to any other single or twin screw extruder as a plasticizing unit, of editing the injection molding parameters according to your individual requirements, and of producing a large variety of different specimen by quickly and easily interchanging the injection mold – stay flexible and use the machine to match your individual needs.

Optional injection molds

- Multipurpose specimen in compliance with DIN EN ISO 3167
- Small plates in compliance with ISO 294-3 (2002)
- Flow spiral

Further injection molds are available upon request.



Different injection molds



Specimen in the injection mold



Closing of the injection mold



Interchangeable injection molds

The SpeciMold can be combined with any plasticizing unit – there will be no problems with extruders of other manufacturers.

Example: Twin screw extruder



Stand-alone extruder TwinLab-C 20/40

Example: Single screw extruder



Stand-alone extruder KE 30

... where quality is measured.

SpeciMold

Software

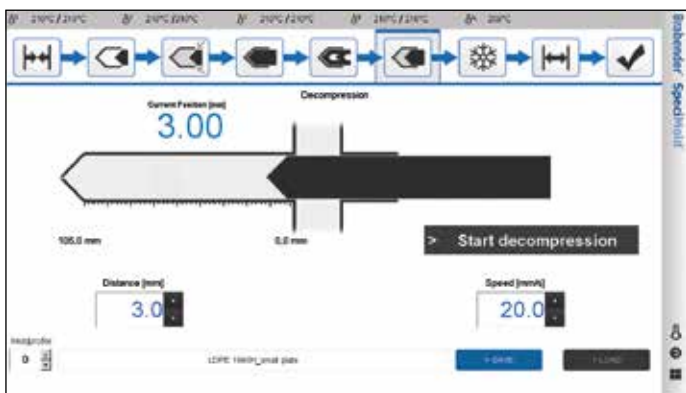
The user-optimized control surface and process mapping of the SpeciMold software make parameter setting and handling of the machine very easy. Clear input masks facilitate the entry of process parameters like injection pressure, injection speed, and injection volume in order to optimize your specimen.

Functions

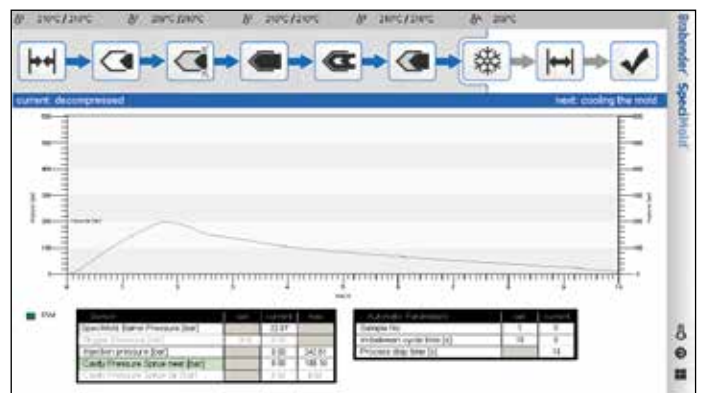
- Selection between automatic and manual operation
- Saving of material-specific process parameters – adjust the optimum parameters for a certain polymer once and reuse them whenever needed
- Input masks and live data display for each process step



SpeciMold software: Start screen



SpeciMold software: Process mapping



SpeciMold software: Internal pressure curve of the injection mold



Brabender application laboratory

The Brabender support

Our state of the art application laboratory is always made available to our customers.

You can choose to send material to us for testing or schedule a specific Lab Trial with our expert team. In our application laboratory, you will have access to our full product line to help come to a solution for your application.



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SpeciMold	V100	V250
SpeciMold block	Injection pressure: up to 600 bar Chamber volume: 33 cm ³ Injection volume: 27 cm ³	
Toggle unit Closing force	100 kN	250 kN
3 cooling cycles	Injection mold Supporting plates Gearbox	
Mains connection	3 x 400 V + N + PE, 32 A 3 x 230 V + PE, 20 A	
Dimensions (W x H x D)	1791 x 1707 (1607) x 740 mm	1791 x 1747 (1647) x 1050 mm
Variable center height	Min.: 1000 mm Max.: 1100 mm	Min.: 1040 mm Max.: 1140 mm
Weight (with standard injection mold)	380 kg	630 kg

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