

# Brabender®



## Brabender® Measuring Extruders and Extrusiograph®

Single Screw Extruders



... where quality is measured.

# Measuring Extruders and Extrusiograph



## Just Plug & Play

The Plasti-Corder Lab-Station and Plastograph EC Plus are the basic units for application oriented investigations or processing tasks in laboratories and simulation.

All Brabender measuring extruders and Extrusiograph are supplied with CAN bus technology to be docked to these basic units.

## Application area

Laboratory scale machinery can easily simulate production processes in real time.

What kind of advantages are provided by a laboratory measuring extruder?

The design of this instrument allows for small amounts of raw material samples. The mentioned research and sample preparation tasks do not require anymore to interrupt your production processes, which equates to direct savings to your bottom line.

The Brabender modular system allows a complete instrumentation of the extruders.

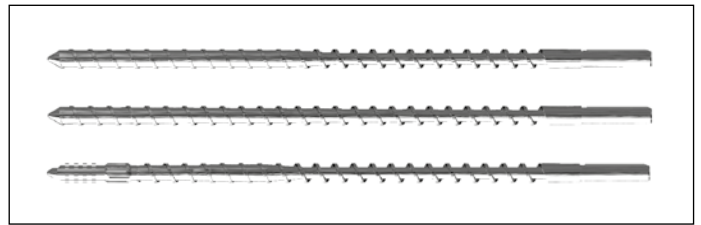
All of the measured values such as torque, melt and zone temperatures, melt pressure are recorded continuously and can be visualized in various graphs or sheets.

These mentioned parameters can support you to find the optimum processing conditions on your production scale.

## Advantages

The Brabender measuring extruders offer the following major technical features:

- Mechanical and electrical overload protection
- Nitrided barrel surface to ensure long lifetime even with abrasive materials
- Up to 4 bores for pressure transducers and 4 further for melt temperature
- The temperature of the individual extruder zones is controlled and displayed by self-optimizing electronic temperature controllers.
- Polished chrome plated screws – various special steel grades available as well.
- Single and multistage screws with various compression ratios, zone lengths and mixing elements are available for testing a large range of materials.
- Wide range of processing and measuring dies



Screw examples (top down): 4:1 metering screw, 4:1 core progressive screw, 4:1 dispersion screw with Maddock and mixing segment



Plastograph EC Plus with measuring extruder 19/25 and slot type rheological die



Plasti-Corder Lab-Station with docking station, measuring extruder 19/25 and slot type rheological die

## The Brabender MetaBridge



Brabender MetaBridge software running on tablet

### Discover the Brabender MetaBridge

The new software is characterized by its easy and intuitive handling. After log-in, the user finds all information about the device and a choice of options for his purpose on the start screen.

### The advantages

- User-friendly operation by touch – perfect for tablets and smart-phones
- Responsive web design: screen resolution adjusted automatically
- Ready to use, no installation necessary
- Security of tests and data through password protected user log-in
- Live test tracking by authorized users from multiple end devices all over the world at a time

### Intelligent features

Benefit from new and optimized functions:

- Administration mode for user access rights
- Webbased solution – possibility of sharing information and data with other users worldwide
- Live tracking of tests with end time indication for logged-in users
- Optimized basic functions like data recording and evaluation, printing and export of test results – clearer, easier, faster
- Central test administration and data storage provides for quick and easy access of authorized users
- Easy definition, clear display and quick integration of reference curves
- Optimized functions for editing and adapting diagrams to your individual needs



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# Measuring Extruders and Extrusiograph

## Measuring extruders and Extrusiograph - Technical data



Measuring extruder / Extrusiograph 19/25  
Application: Thermoplastics



Measuring extruder 19/10 DW  
Application: Elastomers



Pin barrel extruder 19/20  
Application: Elastomers



Measuring extruder 30/25  
Application: Thermoplastics

	Measuring Extruder 19/10 DW	Measuring Extruder 19/15	Measuring Extruder 19/20	Grooved Extruder 19/20	Measuring Extruder 19/25	Extrusiograph 19/25	Measuring Extruder/ Extrusiograph 19/32	Thermoset Extrusiograph 30/15	Measuring Extruder 30/25	Extrusiograph 30/25	Measuring Extruder/ Extrusiograph 30/32
Screw diameter D [mm]	19	19	19	19	19	19	19	30	30	30	30
Screw length [L : D]	10 D	15 D	20 D	20 D	25 D	25 D	32 D	15 D	25 D	25 D	32 D
Number of heating zones [H] and heating/cooling zones [HK]	1 HK	1 H 1 HK	1 H 1 HK	2 HK	1 H 2 HK	1 H 2 HK	1 H 3 HK	3 HK	4 HK	4 HK	5 HK
Electric heating power per zone [W]	1500	250 1500	1500	liquid	1500	1500	1500	liquid	2100	2100	2100
Max. operating temperature [°C]	300	450	450	350 <sup>(1)</sup>	450	450	450	350 <sup>(1)</sup>	450	450	450
Max. torque [Nm]	150	150	150	150	150	150	150	400	400	400	400
Number of measuring points for:											
Control temperature	1	2	2	2	3	3	4	3	4	4	5
Melt temperature	1	1	1	1	1	3	1/4	1	1	4	1/5
Pressure	1	1	1	1	1	3	1/4	1	1	4	1/5
Output dep. on material and speed [kg/h]	0.5 - 5	0.5 - 5	0.5 - 5	0.5 - 5	0.5 - 8	0.5 - 8	0.5 - 8	0.5 - 10	0.5 - 15	0.5 - 15	0.5 - 15
Compatibility:											
Plastograph EC Plus	•	•	•	•	•	•	•				
Lab-Station	•	•	•	•	•	•	•	•	•	•	•

1) depending on oil and thermostat

## Die heads

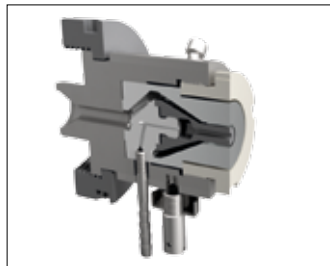
Brabender die heads are high-precision tools fitting all of the Brabender single and twin screw extruders. Mounting and interchanging them at the extruder barrel is quick and easy through a ring nut coupling.

The die heads are heated electrically and form a separate control zone triggered by the temperature control unit. They are made of corrosion-proof steel and can be disassembled for easy cleaning.

Upon request, special constructions are available, such as liquid heating/cooling, non-standard sizes or special materials. Co-extrusion dies are also available on request.



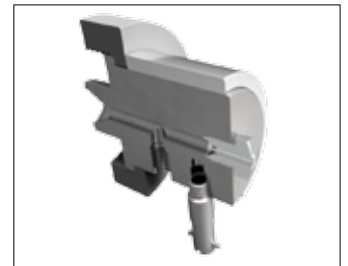
Ribbon die head, adjustable



Tubing die head



Film blowing die head with cooling ring



Round strand die head

## Follow-up equipment

Brabender supplies several additional equipment for the measuring extruders:



Conveyor belt for taking off extruded profiles



Water bath for cooling the extruded strands



Pelletizer

Or complete your extrusion tasks with:

- Univex flat-film take off unit with cooled polished rolls
- blown-film take off unit
- winder for extruded strands or wires



Univex with Extruder



Blown-film take off unit



Winder

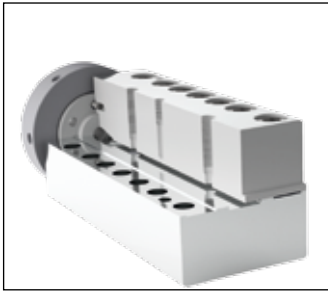
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# Measuring Extruders and Extrusiograph

## In-line measurement systems

The extruded specimen can be studied further according to various methods and parameters, such as tensile strength, ductility, color, gloss, weathering etc. Furthermore

there are some specific tests, which can be performed directly by Brabender measuring extruders or in the die head.



Rheometric slot capillary die head



Rheometric round capillary die head

Obtain the flow curve and viscosity curve with the rheological dies. With the additional software module you can make the necessary correction calculations and have the visualized plots either.



Filtratest

With the Filtratest die head you can analyze the impurities of polymers in compliance with EN 13900 standard.



Swelltest

Die-swell measurement with a high-precision continuous non-contact optical system.



Film Quality Analyzer with Univex

Optical in-line analysis of the extruded films: the high-resolution camera detects the inhomogenities and impurities (e.g. black specks, gels, fisheyes, holes, arrows etc.) of transparent and pigmented films. With its dedicated software the optical and statistical evaluation is also possible.

## Stand-alone extruders

The stand-alone extruders ("KE" series) offer cost-effective solutions in case the modularity at the drive unit is not essential.

These machines have a fix built-in drive motor, they do not require a separate drive unit. Except for the direct torque measurement the

instrumentation possibilities are the same as in case of the modular extruders. Most of the above listed

(see page 4) extruder types are available in stand-alone design either.



Stand-alone extruder KE 19

Stand-alone extruder KE 19	
Screw diameter	19 mm
Screw lengths	10 - 15 - 20 - 25 - 32 D
Drive power	2.4 kW
Speed	0.2 - 150 min <sup>-1</sup>
Max. screw torque	150 Nm
Max. operating temperature	450 °C
Max. throughput	approx. 5 kg/h



Stand-alone extruder KE 30

Stand-alone extruder KE 30	
Screw diameter	30 mm
Screw lengths	25 D, 32 D
Drive power	6.7 kW
Speed	0.2 - 150 min <sup>-1</sup>
Max. screw torque	400 Nm
Max. operating temperature	450 °C
Max. throughput	approx. 15 kg/h

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# Measuring Extruders and Extrusiograph

## 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.



Brabender application laboratory



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