

LABORATORY

CALEVA

MULTI LAB

Enhance the utility of your equipment and increase your chance of success by considering these options

OPTIONS AND COMPANION EQUIPMENT

One machine, three processes



IF YOU WANT TO..	THEN YOU SHOULD...
GRANULATOR	
Granulate smaller batches	Consider the smaller bowl on page 3. The smaller bowl will allow you to mix and granulate smaller batches from about 10 grams.
Work with very stiff or viscous material	A special mixing sigma blade set has been developed for this type of material. See page 3
EXTRUDER	
Make pellets of different diameters	Die holes can be offered from 0.5 mm diameter to 3.0 mm in diameter. See page 4
Produce extrudate with different cross sections (for example, "tri-lobe and quad-lobe" to increase surface area for catalyst use)	Dies can be offered with "tri-lobe and quad-lobe" and other shaped holes. Contact us directly to discuss your requirements. Go to page 4
Produce material with different densities	Dies with different hole depths are available. See page 4
SPHERONIZER	
Work with material that might be sticky	It is possible to coat both spheronizer disc and bowl with PTFE . See page 4.
Plan trials that will spheronize very small pellets	Spheronizer discs with finer cross hatch patterns are available. See page 4
Work with pellets that might be more friable	Spheronizer discs with a radial cut pattern for gentler action are available. See page 4
VALIDATION AND TRAINING	
Produce clinical samples	An IQ/OQ service or just the documents are available. See pages 7 and 8
Learn as fast as possible	Training on your site or our site with your own machine before shipment is available. Pages 6/7
COMPANION EQUIPMENT	
Develop formulations faster	Look at the companion MTR-3 in page 6
Coat the small batches of pellets that you make	The Caleva Mini coater drier will coat small batches of pellets from a few grams to about 60 grams. See page 5

THE MOST FLEXIBLE AND ADAPTABLE EQUIPMENT FOR YOUR LABORATORY

OPTIONS

When supplied with the three available attachments then no additional options are required for proper operation. Some options are available to enhance the utility of the Caleva Multi-lab. These are shown below.

MIXING AND GRANULATION ATTACHMENT

○ Granulate smaller batch sizes with a reduced size bowl

For some applications where an increased in mixing power is needed (for example in the case of very stiff materials) then a smaller bowl might provide a solution. The smaller bowl has a batch size of about 10 to 20 grams (wet weight) and using smaller blades relatively provides more power to be applied to a smaller mixing surface. Mixing bowls can be used with or without inserts as required.

In the case of very scarce or expensive materials then a small bowl will help to run trials with smaller amounts of material.

Using 15 grams of material in the mixing bowl will provide a sample that is still large enough to effectively use in the extruder and spheronizer.

○ Mixing sigma blades for difficult to mix materials

For working with very “high viscosity” materials a special blade has been designed. Contact us for details.

○ Bowls with and without water jackets are available

Water jackets can be used to add or remove heat from the mixing system. Discuss your application with us for the best advice.



A range of bowl sizes and mixing blade configurations are available.

Ask us which is the most suitable for your application.

EXTRUDER ATTACHMENT

A range of dies are available for the extruder.

- **Dies with round holes:**

Dies with **hole diameter** from 0.5 mm to 3 mm are available in 0.1 mm increments.

Dies with different **depth holes** from 0.5 mm to 8 mm in 0.1 mm increments.

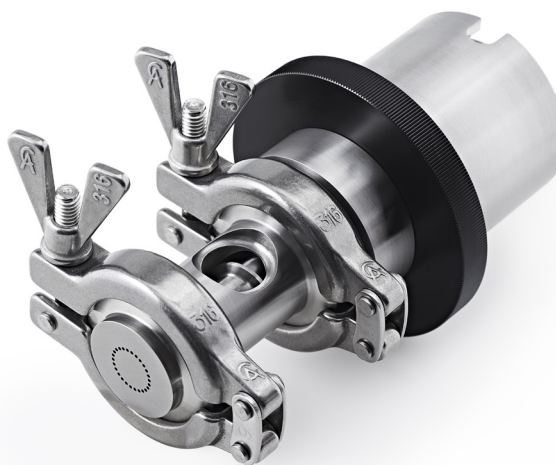
Not all **combinations of diameter and depth** are possible. Holes with a depth to diameter ratio greater than 4 are not recommended.

- **Extrude with variable density output**

By changing the diameter to depth ratio in the dies extrudate of higher or lower density can be produced according to the needs of your product or objectives. Contact us for further details.

- **Dies with “none circular” holes**

We have supplied a range of dies with “tri-lobe and quad-lobe” hole shapes. Contact us if you have specific requirements



SPHERONIZER ATTACHMENT

- **Disc patterns**

Different disc patterns are available for the spheronizer. Please contact us for details of the cross hatch and radial patterns that are available.

- **Sticky materials**

if there is a possibility of working with sticky material in the future then talk to us about having the drum and disc PTFE coated.



COMPANION EQUIPMENT

CALEVA MINI COATER DRIER

○ Coating small batches of pellets

If you are producing small quantities of pellets with the Caleva Multi Lab and these require drying or coating then the only drying and spraying equipment that can operate with such small sample sizes is the Caleva Mini Coater Drier. Small quantities of spheroids (from a few grams) can be coated and dried in minutes. Other pellet coaters might require a minimum batch of between 300 g and 500 g to work effectively, but this robust, simple-to-operate, bench-top unit provides a cost-effective solution for drying and coating particles. The practical unit, which is fully compliant with principles of GLP, can satisfy other applications such as the experimental coating of granules with catalytic material, food material and fluid-filled gelatine capsules.

Please talk to us for more information.



CALEVA MIXER TORQUE RHEOMETER

- **The Caleva MTR is well established as a valuable formulation development, formulation research and production quality control tool**

It provides a quantitative and reproducible measurement of the wet mass in terms of the torque produced when shearing the granulation within the pivoted mixing bowl.

This ability allows formulations to be optimised and product and excipient quality issues to be identified. A valuable tool for formulation development.

Please talk to us about the Mixer Torque Rheometer and ask us about available case studies.



VALIDATION AND TRAINING

- ✓ **INSTALLATION AND TRAINING AT THE CUSTOMER SITE**

- **Training within the UK**

Including one day installation and training and two days travelling.

- **Training in any other European country**

Including one day installation and training and two days travelling. All travel and subsistence costs are included in the cost

- **Training outside Europe**

Including one day installation and training and up to four days travelling depending on the location. Includes installation, commissioning and training at customer site of up to one day, but does not include IQ/OQ which is separately chargeable. The customer will assist with local transport for the Caleva technician if required. The

OPTIONS AND COMPANION EQUIPMENT FOR THE CALEVA MULTI LAB

customer will supply the consumable products required. Trained electricians will be provided by the customer if required (generally not required). Installation does not include any alteration to the customer site and does not include installation or connection of any electrical (or other) services.

The customer will be responsible for the unpacking and location of the machines at their site. This is not included in any quotation or offer.



FACTORY ACCEPTANCE TEST AT THE CALEVA SITE

We make our own quality check before the equipment is shipped (a copy is supplied to the customer) and thus a separate FAT is not normally necessary but can be completed with the customer if required. The customer will be responsible for all his or her expenses incurred in getting to and from the Caleva site.



CUSTOMER TRAINING AT THE CALEVA SITE (OVERSEAS CUSTOMERS)

Training is recommended if extrusion and spheronization is a relatively new technique to the company or if new staff would benefit from it.

Contact us for details.

Customers from outside the UK will be collected at any London main airport and transferred to Bournemouth, accommodation and all meals for one trainee whilst in Bournemouth, UK. Transport to and from the Caleva site is included. Any extras (such as phone calls etc.) at hotel are for guest's account. One night bed & breakfast in London hotel before return flight to home country can be included if requested. Up to two days training (as required) at the Caleva site on customer's own equipment prior to shipment.

Transport to and from the customer's own country to London main airport is not included and is for the customer's account.

If more than one item is purchased then training can be done together with considerable savings in cost. Contact us for details.



VALIDATION AND IQ/OQ DOCUMENTATION PACKAGE

Recommended if required for regulatory purposes.



At Caleva site

The IQ/OQ package can be completed at the Caleva site by us in so far as this is practically possible. The customer can attend if he or she wishes to do so at their own cost. An additional set of blank documents will be provided to allow the customer to re-do the IQ/OQ in their own facility.

**At customer site**

IQ/OQ and installation completed at the customer site at the same time as installation and training (training will be charged separately). The cost shown is an additional cost for the IQ/OQ in addition to the costs for installation and training.

Note: there may be additional country-specific charges depending on location. Contact us for details.

**MATERIAL CERTIFICATES (INCLUDED IN IQ/OQ)**

In line with current standards Caleva does not automatically supply copies of material certificates for product contact parts. Caleva can provide free of charge a certificate naming the product contact parts and confirming that we or our suppliers can provide full traceability to original certificates if this is requested.



If certified copies of material certificates are required then these can be provided at an additional cost.



An advanced Sigma blade set designed by Caleva for mixing viscous material.

TALK TO US

Please call us without obligation

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Cert No. 1503
ISO 9001