



# CALEVA EXTRUDER 35

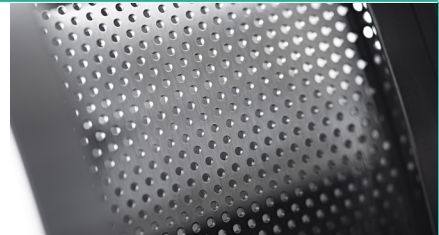
## PRODUCTION SCREEN EXTRUDER

### PRODUCT OPTIONS

#### How do I change the extrusion process to make pellets of different sizes?

Several factors can influence the size of the pellets produced in the extrusion and spheronization process. By far the most important is the diameter of the extrudate produced by the extruder.

Screens are available with different hole diameters for the Caleva Extruder 35 and the Caleva Extruder 20. Additional screens are available with hole sizes from 0.5 mm to 2.0 mm in diameter.



#### Can I work with smaller amounts of product and reduce wastage as much as possible with a Caleva production screen Extruder 35?

There will be product losses with any extrusion process. The extent of this will depend on many factors including batch size. Small batch sizes will have a higher percentage of loss. With the Extruder 35 (like all extruders) there is really no way to prevent some losses. If you want reduce losses to a minimum then with the laboratory bench-top Extruder 20 with reduced height screens can be used.

When using small samples sizes in the Caleva bench top Extruder 20 losses can be reduced to a minimum when reduced height screens are used. Caleva recommend that for sample sizes of 150 g or less that reduced height screens are used to minimize product losses. Reduced height screens have the added advantage of being less costly to produce than full height screens.



#### Can I increase the density of my extrudate with the production screen Extruder 35?

Screen hole depths are generally 1 mm deep in all laboratory screen extruders.

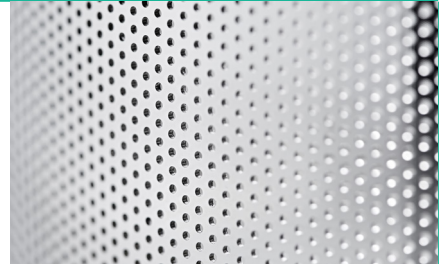
The improved design of the Caleva Extruder 35 allows the use of screens with die holes that are 2mm deep. Several customers have used these screens to increase the density of their extrudate



#### Is it possible to maximise the through-put of a production screen Extruder 35?

Product feed rate and speed of roller rotation will assist to increase product throughput but there are limits that will be reached. Throughput can be increase by using "high capacity" screens

Caleva can offer "high capacity" screens. These screens are drilled with a higher density of holes giving a larger % open area. This will assist to increase throughput. High capacity screens are not as physically robust as standard screens.





## TRAINING AND VALIDATION OPTIONS

- ✔ **INSTALLATION AND TRAINING AT THE CUSTOMER SITE**  
Several options for training, installation and validation are offered. The details and options will depend on the location of the customer site and the equipment. This can be provided on a world wide basis.
- ✔ **FACTORY ACCEPTANCE TEST AT THE CALEVA SITE**  
We make our own quality check before the extruder is shipped (a copy is supplied to the customer) and thus a separate FAT is not normally necessary but can be offered 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**  
Training is recommended if extrusion and spheronization is a relatively new technique to the company or if new staff would benefit from it.
- ✔ **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. The customer can attend. 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 as far as possible at the customer site at the same time as installation and training (training is charged separately).
- ✔ **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.

## TALK TO US

Please call us without obligation

+44 (0) 1258 471122

info@caleva.com



Cert No. 1503  
ISO 9001



# CALEVA SPHERONIZER 500

## PRODUCTION SPHERONIZER

### PRODUCT OPTIONS

#### Can I use spheronization discs with different disc patterns?

Yes, caleva offer a range of patterns suitable for your formulation and process.

The options for cross hatch patterned discs are:-  
-Large: 6 mm x 6 mm x 2 mm deep  
-Standard: 3 mm x 3 mm x 1 mm deep  
-Fine: 2 mm x 2 mm x 0.67 mm deep  
-Extra Fine: 1 mm x 1 mm x 0.33 mm deep



#### My process generates a lot of dust during the spheronization stage. Is there a disc with a more gentle action?

Sometimes the spheronization process generates dust. This could be due to the formulation being too dry and friable. There are two possible options to look at:-  
Try making the formulation a little more cohesive by adding additional binder solution. A second option is to try a radial cut disc offering gentler processing. Radial disc designs (and extra fine disc cuts) are thought to be less aggressive and damaging to the spheroids as they are being formed.

The options are to use the Extra fine disc or, by preference, a Radial cut disc of Caleva design. This offers the gentlest form of marumerization (another term for spheronization). Ask us about options for a radial disc.



#### How can I manage to spheronize products that are rather sticky?

Sometimes formulations are sticky and I you may have to clean my equipment after each run. There is a way that might help to manage this problem

There are two solutions that Caleva can suggest. Experience has shown that the Extra-Fine cut on the disc can make a significant improvement. Another option is to ask Caleva to coat both the spheronizer disc and the walls of the spheronizer drum (bowl) with a PTFE coating. We recommend that if stickiness is likely to be a problem you have the drum and disc coated at the time of purchase.





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