

# EXTRUDERS AND SPHERONIZERS FOR PILOT AND PRODUCTION SCALE



TAKE THE SPHERONIZATION CHALLENGE



# THE CALEVA VARIABLE DENSITY TWIN SCREW EXTRUDER 70 AND THE CALEVA SPHERONIZER 700

## Variable Density Twin Screw Extruder 70 (VD-TSE70) Advanced Spheronizer 700 (S 700)



Your cost effective extrusion and spheronization system for production of up to 150 kg per hour of pellets. Designed for use in a wide range of industries, such as pharmaceutical, catalyst, cosmetics, aquaculture, zeolites, biofuels, petrochemical, agrochemical and food.

- ✓ **When you choose your Spheronizer you should be sure you have:-**
  - Automatic slow down before discharge to protect newly formed soft pellets - greater usable yield produced
  - Integrated disc hoist pneumatic driven (not manual) - easy and safe handling
  - Air blast gun for use during multiple production runs - reduce stoppage for cleaning to gain maximum efficiency of operation
  - Rounded discharge chute - to avoid pellet damage and generate your maximum usable yield
  - Actual product temperature display - be sure your product is safe from damage
- ✓ **When you choose your Extruder you should be sure you have:-**
  - The ability to vary the density of the extrudate produced - have the flexibility get it right for the requirements of your formulation and application
  - Availability of die hole diameters from 0.5 mm to 12 mm - make extrudate of the diameter right for your application
  - Die hole depth to diameter ratios available from 1:1 to 4:1 across the range - produce extrudate with the correct density for your application
  - Integrated water jacket for cooling/heating - protect your product from overheating
  - Product temperature shown as a digital read out - ensure your product is known to be safe from heat induced degradation

**A flexible and modern extrusion and spheronization system with unique benefits for your production requirements**

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**+44 (0) 1258 471122**

**info@caleva.com**

**www.caleva.com**

**YOU TOO WILL HAVE CONFIDENCE THAT WE CAN BE YOUR PARTNER IN PELLET PRODUCTION**

# VARIABLE DENSITY TWIN SCREW EXTRUDER 70

## TECHNICAL SPECIFICATIONS

### THE PRODUCTION AND PILOT SCALE EXTRUDER VD-TSE70

○ <b>Output range</b>	50 to 200 kg / hr
○ <b>Mechanical information</b>	
<b>Size</b>	Approximately 865w x 1636h x 1445d mm
<b>Weight</b>	Approximately 400 kg
<b>Cabinet</b>	Brushed type 304 stainless steel
<b>Extrusion bore</b>	70 mm diameter
<b>Product contact</b>	316 stainless steel
	FDA food approved plastics
<b>Screw speed</b>	30 to 100 RPM
<b>Operating torque</b>	Nominal 427 Nm
<b>Product feed</b>	Manual with 25 l capacity loading tray
<b>Product output</b>	Extrudate density can be controlled using additional dies
<b>Discharge height</b>	540 mm
○ <b>Electrical information</b>	
<b>Motor power</b>	4.8 kW AC motor
<b>Electrical supply</b>	400VAC 50Hz - 460VAC 60 Hz 3 phase, 20 A
<b>Controls</b>	Mounted on swivel pendant
<b>Information panel</b>	- Product temperature (°C) - Rotational speed (RPM) - Motor load (%)
○ <b>Other features</b>	
<b>Die configurations</b>	Axial and "Caleva Cone" configuration Caleva Cone = an advanced die design giving increased output and improved die durability
<b>Die hole range</b>	Diameter 0.5 mm to 8.0 mm 1:1 to 4:1 depth : diameter (axial configuration) Diameter 0.5 mm to 1.0 mm (Caleva Cone configuration)
<b>Safety</b>	Fully safety interlocked
<b>Water jacket</b>	On screw chamber
<b>CE marking</b>	As standard

Axial configuration with 1 mm die holes



Axial configuration with 8 mm die holes

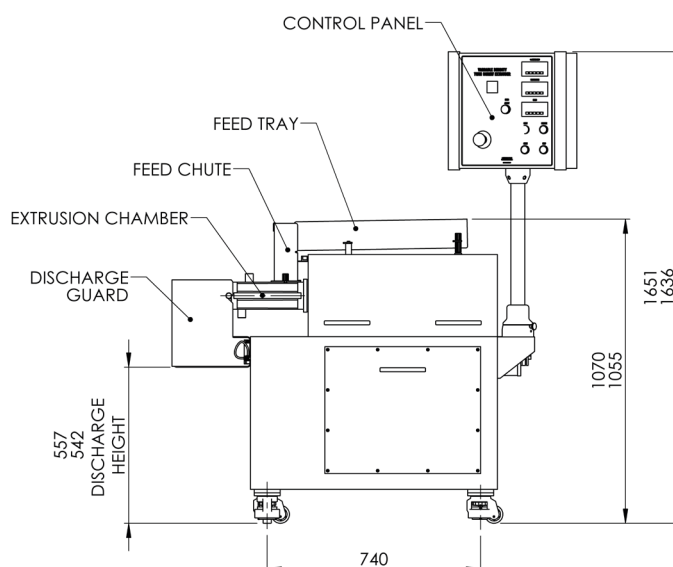
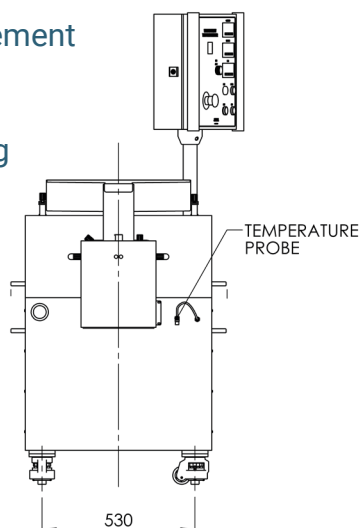


"Caleva Cone" configuration with 1 mm die holes



### General arrangement diagram

Weight ~ 400 kg



You can vary the extrudate diameter **and** density for your requirement!

**TEST YOUR PRODUCTS WITH US, CONTACT US TO DISCUSS YOUR OPTIONS**



# ADVANCED SPHERONIZER 700

## TECHNICAL SPECIFICATIONS

### THE CALEVA PRODUCTION AND PILOT SCALE SPHERONIZER 700

- **Operating capacity** Up to 150 kg per hour
- **Batch sizes** 2 kg to 15 kg
- **Mechanical information**
  - Size** Approximately 1725w x 2162h x 800d mm
  - Weight** Approximately 700 kg
  - Cabinet** Brushed type 304 stainless steel
  - Product contact** 316 stainless steel and FDA approved plastics
  - Standard disc** One 3mm cross hatch pattern spheronizer disc supplied as standard with other disc patterns available
  - Product feed** Manual
  - Product discharge** Manual / Automatic (operator selectable)  
"Air blast technology" to assist in the cleaning of the discharge door, particularly useful for continuous operation
  - Discharge height** 991 mm
- **Electrical information**
  - Motor power** 7.5 kW AC motor
  - Electrical supply** 400VAC 50Hz - 460VAC 60 Hz 3 phase, 25 A
  - Controls** Mounted on swivel pendant box
  - Information panel**
    - Product temperature (°C)
    - Rotational speed (RPM)
    - Run time remaining (seconds)
    - Motor load (%)
- **Other features**
  - Disc pattern** 3 x 3 mm cross hatch (options available)
  - Disc removal** Integrated machine powered disc lifting
  - Safety** Fully safety interlocked
  - Discharge** Fully automatic pneumatic door
  - Water jacket** As standard
  - Automatic timer** As standard
  - Air blast cleaner** As standard
  - CE marking** As standard
  - Adjustable fines air** As standard
  - Discharge chute** Round design (angular discharge > 120°)

Production spheronizer disc removal system

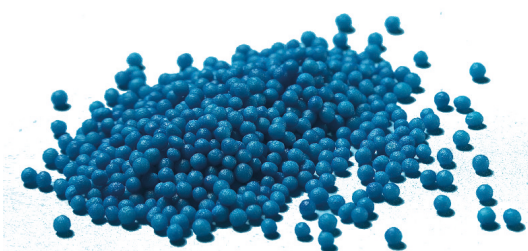
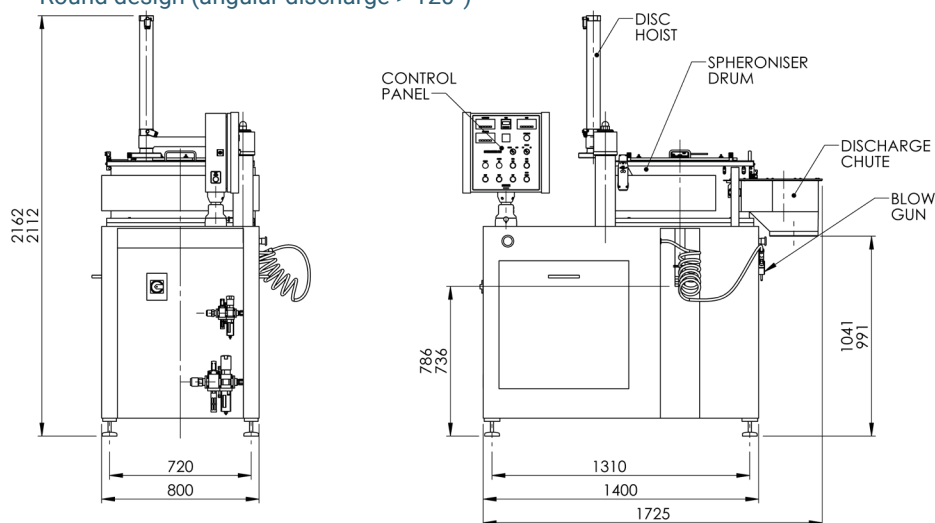


"Clear product without stopping" spheronizer air blast system



General  
arrangement  
diagram

Weight ~ 700 kg



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# FLEXIBLE PRODUCTION EQUIPMENT FOR YOUR PROCESS NEEDS

## Screen Extruder 35 Designed for R&D and production



- ✓ A single extruder that can be used for both formulation development and production. Reduce cost and investment by using the same extruder for development and production. Remove your need to purchase bench-top equipment - batches from 250 g for development work. Up to 100 kg per hour for production.
- ✓ When you choose your Extruder you should be sure you have:-
  - Interchangeable screens with hole diameters from 0.5 mm to 2.0 mm in 0.1 mm stages - produce the pellets size that you need
  - Digital display of extrudate temperature, power usage and rotational speed - avoid product degradation
  - Small "footprint" - maximise your available space
  - Integrated water jacket behind the extrusion chamber - help to protect your product from overheating
- ✓ How do you plan to use it?
  - For both product development and production?
  - Small batches from about 250 grams?
  - Up to 100 kg per hour for production use?

## Spheronizer 380 and 500 series Designed for R&D and production

### Spheronizer 380 Batches from 250 g to 4 kg



- ✓ When you choose your Spheronizer you should be sure you have:-
  - The opportunity to use the production spheronizer for development work - The Spheronizer 380 will work with batches as low as 250 g - save equipment costs
  - Automatic run time and discharge - ensure consistent and repeatable results
  - A water jacket as standard - heat or cool your product as required
  - "Air blast" cleaning technology for continuous production - maximize production efficiency

### Spheronizer 500 Batches from 1 kg to 8 kg



- Various disc patterns to suit your needs - ensure consistent and optimal results
- Rapid turn around between different products - easy to dismantle and clean for small product runs - maximise your production efficiency
- Suitable for small batches or long production run

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**LET US HELP YOU MAKE THE RIGHT EQUIPMENT  
CHOICES TO GET THE RESULTS YOU WANT**

# SOME OF THE COMPANIES THAT HAVE DEMONSTRATED THEIR TRUST IN CALEVA BY WORKING WITH US



We have worked world-wide for more than 50 years helping customers develop and manufacture pellets and extrudate within these industry sectors:-

*Agriculture, Aquaculture, Biotechnology, Catalyst, Ceramics, Cosmetics, Detergents, Food, Neutraceuticals and Pharmaceuticals*

Ver. 80925



ISO 9001:2015  
Cert. No. 1503

## TEST YOUR PRODUCTS WITH US IN OUR LABORATORY WITH THE SPHERONIZATION CHALLENGE