

PELLETING

For the Chemical, Plastics and Pharmaceutical Industries



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- 03 **Quality Standard**
- 04 **Pellet Mills**
- 05 **Options and Advantages**

PROCESS TECHNOLOGY

Pelleting for Economic Compacting
and Shaping



Transport and storage of bulk and powdery products present a challenge due to their mealy and dusty consistency. Regardless of whether masterbatches, plastic additives, detergents and cleaning agents, pigments, talc, tableting compounds, activated carbon or pharmaceutical raw materials are involved – pelleting significantly improves the handling properties of these substances.

AMANDUS KAHL plants for agglomeration by compression and pelleting increase the economic efficiency of the production processes as they reduce storage losses and dust load and improve the flow properties, proportioning capabilities and utilisability, to name only a few advantages. KAHL flat die pellet mills are used in the chemical, plastics and pharmaceutical industries in more than 25 countries worldwide.



Pelleting significantly improves the product properties of the chemical/pharmaceutical substances.



Reduction of the dust load



Pellets with a diameter of 0.8 to 20 mm



PRECISION: PELLET PROPERTIES PERFECTLY ADAPTED TO THE CUSTOMER'S REQUIREMENTS

For more than 40 years, AMANDUS KAHL has been building flat die pellet mills with which various powdery materials can be processed into low-dust pellets that can be easily proportioned, stored and transported by means of the principle of agglomeration by compression. The combination of dies and pan grinder rollers specially adapted to the customer's process allows pellets with a diameter of 0.8 – 20 mm to be produced in various lengths. The pellet quality can be precisely adjusted by the design of the die according to customer requirements, so that not only diameter and length can be varied, but also bulk density, solidity and surface structure.

This has the advantage that the pellet can be precisely matched to subsequent process steps. This means that relatively soft pellets can be disintegrated quickly if necessary, or hard pellets can be transported over a longer period and a long distance without any problems. In all cases, dust binding reduces the dust load and thus minimises the risk of explosion.

HIGH QUALITY STANDARD: OPTIMUM CONDITIONS, ALSO FOR TEMPERATURE- SENSITIVE PRODUCTS



Especially with temperature-sensitive products, the flat die pellet mill shows its strengths compared to its market competitors. Due to the comparatively low speed of the pan grinder rollers, the temperature development is sometimes significantly lower than with alternative pelleting processes.

Thanks to the unique vertical design of the flat die pellet mill, the product falls from the proportioning element into the pelleting chamber where it is homogeneously distributed. Once on the flat die, it is rolled over by pan grinder rollers and gently pressed into the die. The product is agglomerated inside the die. It then leaves the die at the bottom side in the form of a strand to be cut off at a defined length.



Due to the low speed of the rollers, the temperature development is significantly lower.



↑ Talcum pellets



↑ Detergent pellets



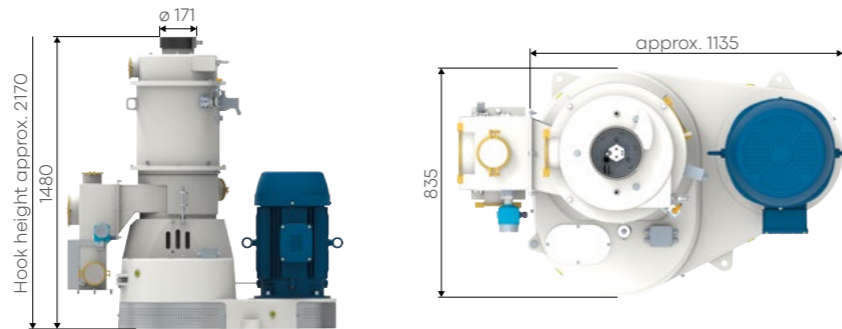
↑ Fertiliser pellets

PELLET MILLS

Pellet mill 33 – 390

Successful in the chemical industry for over 20 years

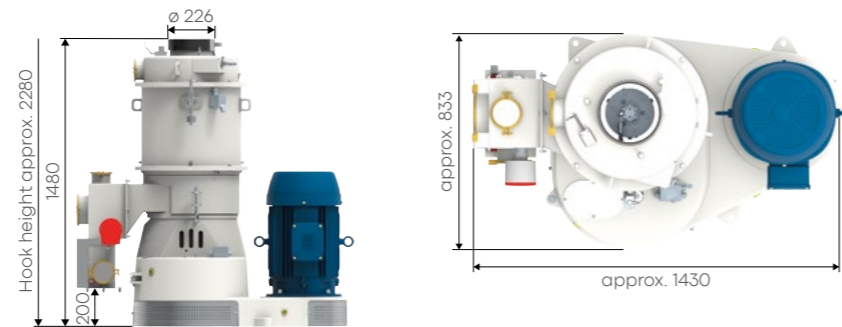
Type	33 – 390
Die diameter mm	390
Roller diameter/width mm	230/up to 75
No. of rollers	2
Roller speed m/s	2.2
Drive motor kW/min-1	15-30/1500



Pellet mill 33 – 500

High throughput with large perforation area, application in the pharmaceutical industry

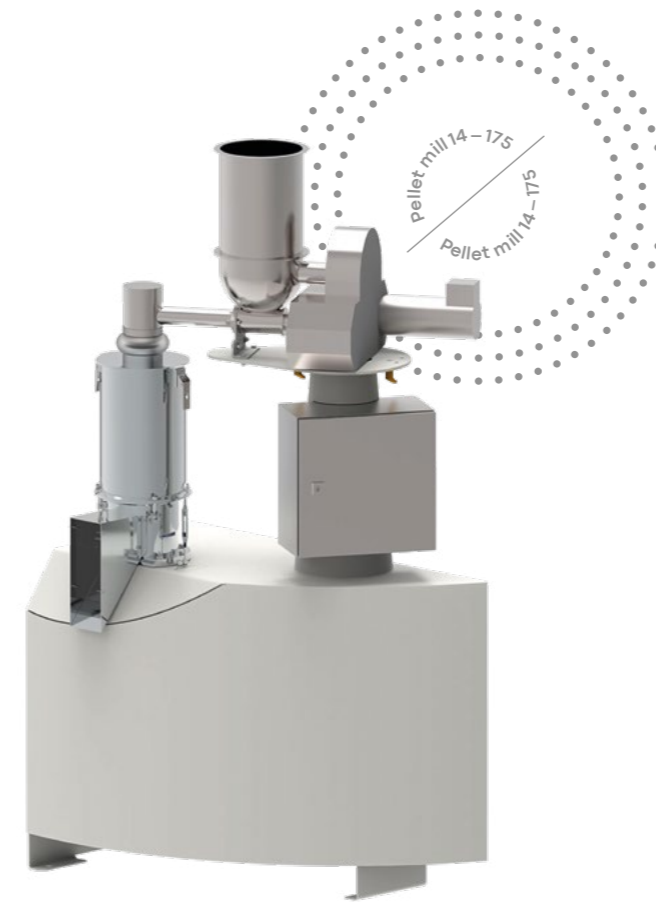
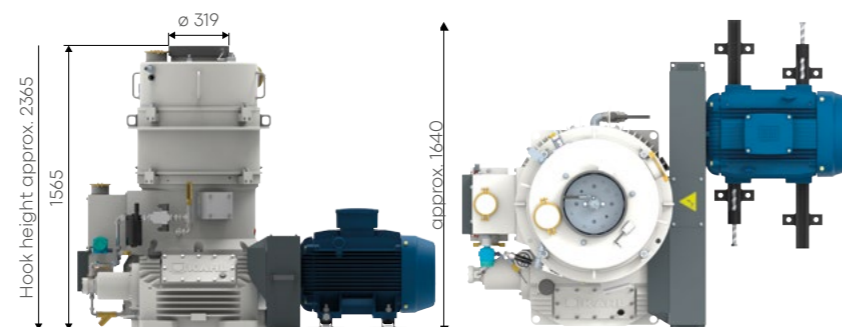
Type	33 – 500
Die diameter mm	500
Roller diameter/width mm	230/up to 75
No. of rollers	3
Roller speed m/s	2.4
Drive motor kW/min-1	15-30/1500



Pellet mill 38 – 600

For high throughputs

Type	38 – 600
Die diameter mm	600
Roller diameter/width mm	280/up to 100
No. of rollers	3–4
Roller speed m/s	2.5
Drive motor kW/min-1	55–90/1500



Pellet mill 14 – 175

The flexible concept of this series is particularly suitable for processing very small quantities – both in laboratory and production applications. By using different pan grinder roller and die geometries as well as an optional positive drive of the pan grinder rollers, the smallest machine in the KAHN portfolio provides an outstanding flexibility.

↑ Processing of very small quantities

Pellet mill 33 – 600

The pellet mill 33 – 600 is highly suitable for surface-intensive products. The automatic gap control between pan grinder rollers and die ensures highest process reliability and product quality. With an oil-free drive, a version for dust-explosion-proof operation, ATEX conformity and the possibility of connection to an inerting system, the 33 – 600 is designed for applications in the pharmaceutical industry in accordance with GMP guidelines. They can be qualified and the process can be validated according to FDA requirements. In addition, there is the option of product discharge.



↑ Highest process reliability and product quality

OPTIONS AND ADVANTAGES



Machine advantages

- Refinement of finished products
- Reduction of the dust load
- Reduction of the storage volume due to increased bulk density
- Reduction of transport costs
- No segregation
- Good homogenization
- Better flow properties, proportioning capabilities, utilisability and dissolving or solubilising behaviour
- Higher economic efficiency of production processes
- Minimising of the dust explosion hazard
- Modification of product structure by means of pressure



Product examples

- Pigments
- Talc
- Activated carbon/coal
- Stearates

Chemical products/plastics

- Masterbatches
- Plastic additives
- Detergents and cleaning agents

Pharmaceutical products

- Tablet compounds
- Active ingredients
- Caffeine
- Ibuprofen
- Aromatic flavours
- Vitamin preparations etc.
- Pharmaceutical raw materials

Food

- Instant products
- Nutritional supplements etc.
- Vitamin C – instant products
- and many more.

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