

# PELLET MILLS

BY-PRODUCTS





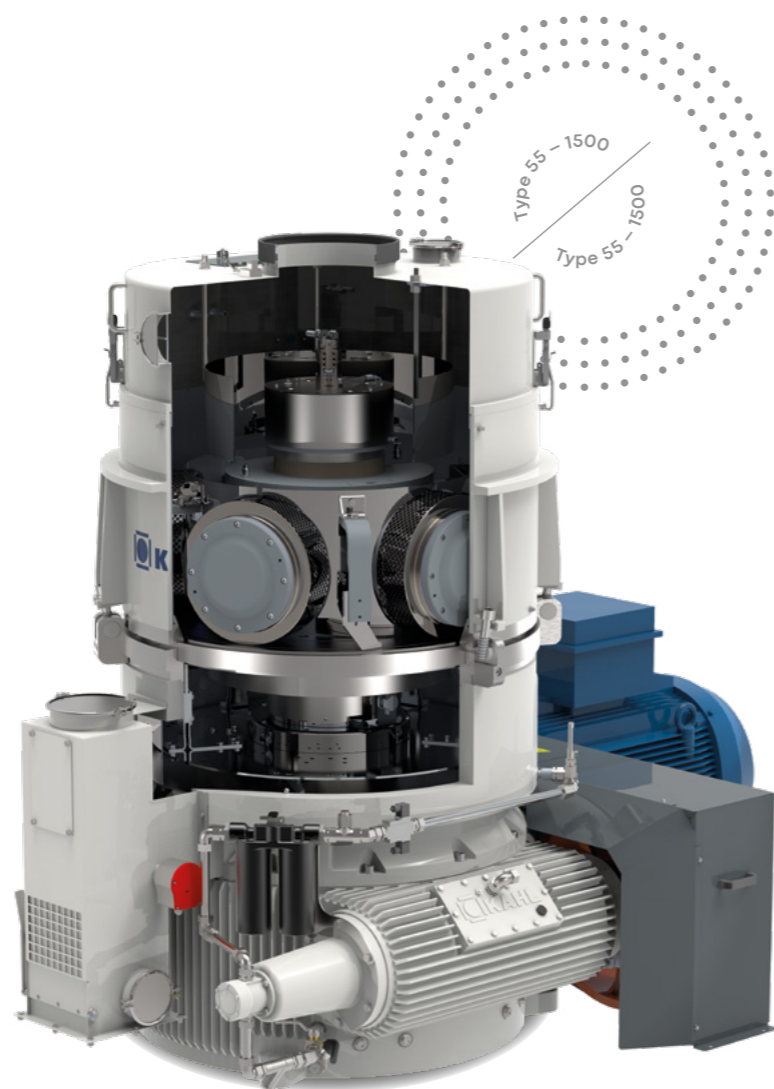
# AMANDUS KAHL ACCOMPANIES YOU

on your way to the right decision



The flat die pellet mill 55–1500 is ideally suited to meet the requirements of green forage pelleting

By-products are components that are produced during the actual processing of the main product. In the feed or food industry, these can be bran, sugar beet pulp, extraction meal or by-products of the malt industry, for example. Such substances often serve as a high-quality additive in the compound feed industry. Pelleting of these often light and high-volume products is the best choice in order to optimise their transport, handling and dosing properties. KAHL flat die pellet mills can be used to pellet by-products of different types. The pellet mill 55–1500 is especially suitable for pelleting green forage. AMANDUS KAHL has been manufacturing flat die pellet mills since the mid-1920s and can thus look back on around 100 years of expertise in the design and manufacture of pellet mills for various industries. They are characterised by sophisticated technology and quality “Made in Germany”. The machine repertoire for the by-product processing sector currently comprises more than 10 press sizes.



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# SUGAR BEET PULP

By-products of sugar production for  
the compound feed industry



↑ Sugar beet



Sugar beet pulp is produced in large quantities and is used as a component (dried and pelleted) for the compound feed production. With the KAHL flat die pellet mill, long-fibre products such as sugar beet pulp can be pelleted in an energy-efficient way without prior fine grinding.



A special field of application for KAHL pellet mills are sugar factories, where dried beet pulp is processed into pellets.



# GREEN WASTE

High-quality feed for ruminants

**Do you have questions  
regarding the  
KAHL technology?**

We will be happy to  
answer them:

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The pellet mill 55-1500, specially designed for the green forage industry, is currently the largest KAHL pellet mill for products rich in crude fibres. It enables high throughput with low energy consumption. The working area of the die has been increased by around 50% compared to the previous model. The proven design ensures low vibration and smooth operation.



↑ Green forage pellets



# BRAN

Grain by-products for fibre-rich feeds



↑ Wheat bran



Large quantities of by-products, such as bran, are produced in grain production every year. With the KAHL flat die pellet mill, grain products can also be pelleted unground and without the addition of steam.



The grain industry is the largest food industry in the world and includes grains such as maize, wheat, rice or barley



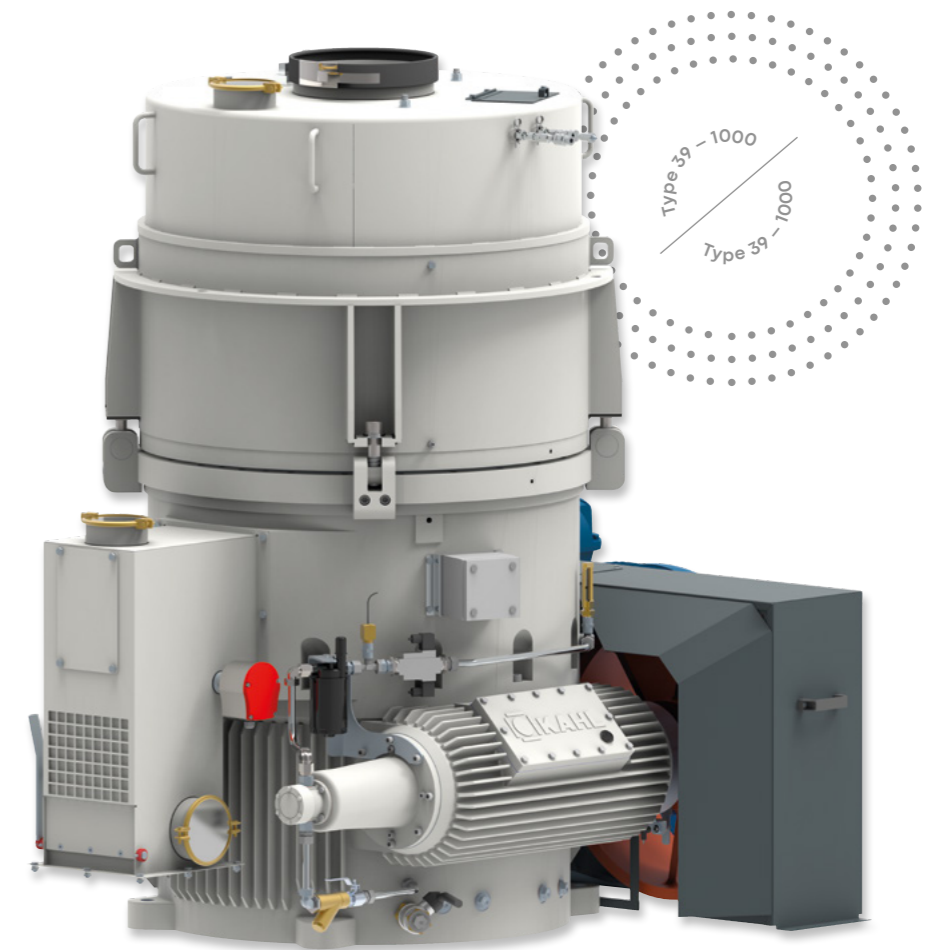
# EXTRACTION MEAL

Volume reduction and improved transportability

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The KAHL flat die pellet mill not only offers an advantage in pelleting long-fibre products. Extraction meal can also be compacted directly. Combined with low wear and operating costs, the use of a pellet mill from AMANDUS KAHL is an economically correct decision.

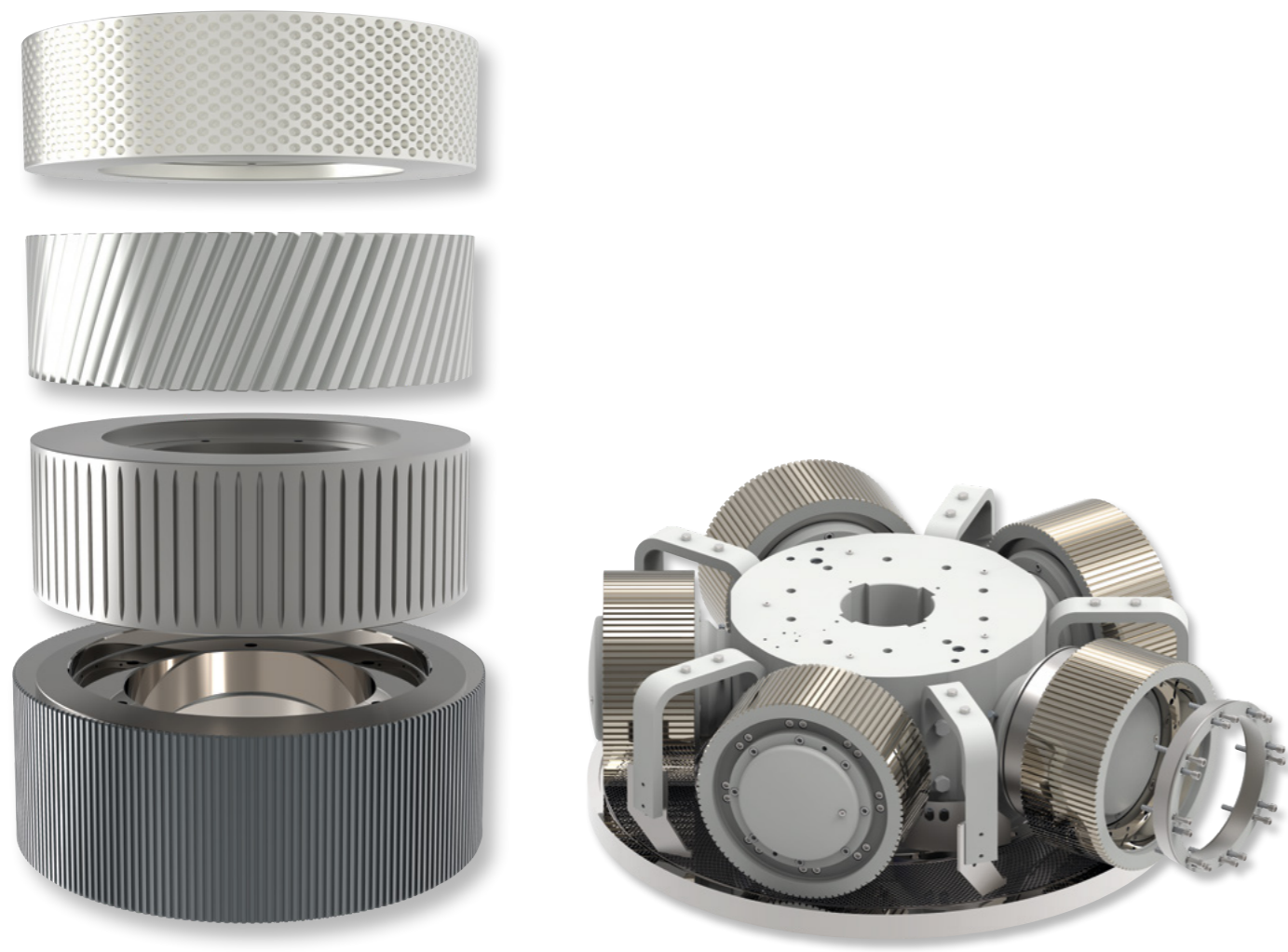


↑ Pellets from rapeseed extraction meal



# PAN GRINDER ROLLERS AND DIES

Depending on the field of application, different hardening processes are required, all of which are carried out in KAHL's own hardening shop for pan grinder roller and die production



↑ Different pan grinder roller designs

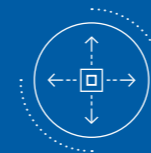
↑ Pan grinder head on flat die

# ADVANTAGES OF KAHL FLAT DIES



## Advantages offered by the machine

- Sturdy design
- Long service life and low wear
- Low consumption of operating materials
- Low operating costs
- Fast and easy die change
- Low space requirement and footprint
- Low noise and low vibration
- Large pelleting chamber for products with low bulk density
- Large pan grinder rollers with low circumferential speed
- Adjustable roller gap due to hydraulic system and thus easier machine start
- Product feeding by gravity
- Low maintenance – remote diagnosis possible



## Advantages for the products to be pelleted

- Depending on the product, direct pelleting without fine grinding
- Highest flexibility in pelleting due to large variety of pelleting tools
- High pellet quality



## Advantages offered by AMANDUS KAHL

- High vertical range of manufacture
- Long-term service also after commissioning
- 10 different pellet mill sizes
- Product-specific design adaptations

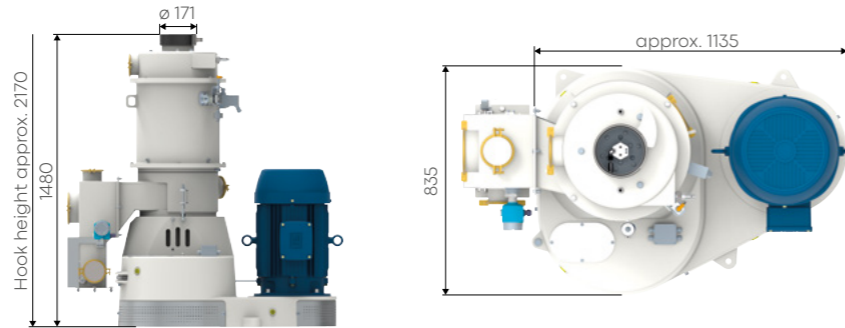




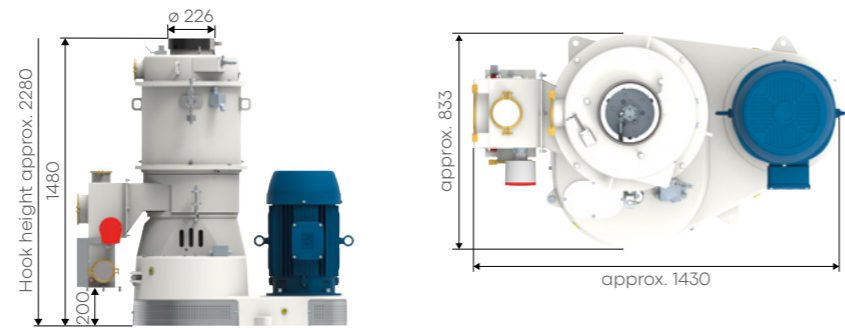
# PELLET MILLS

## By-products

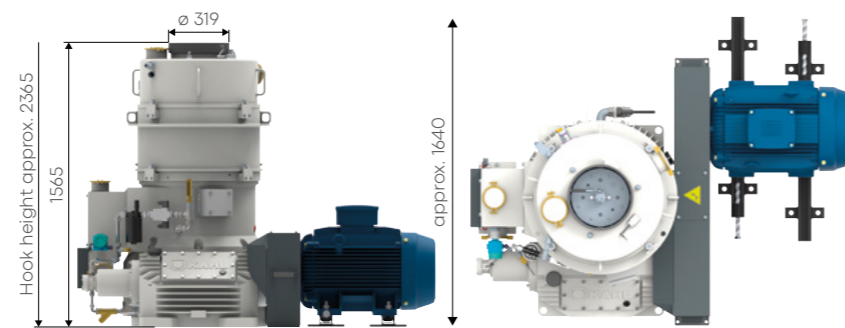
|                          |               |
|--------------------------|---------------|
| <b>Type</b>              | <b>33-390</b> |
| Die diameter mm          | 390           |
| Roller diameter/width mm | 230/up to 75  |
| No. of rollers           | 2             |
| Roller speed m/s         | 2.5           |
| Drive motor kW/min-1     | 15-30/1500    |



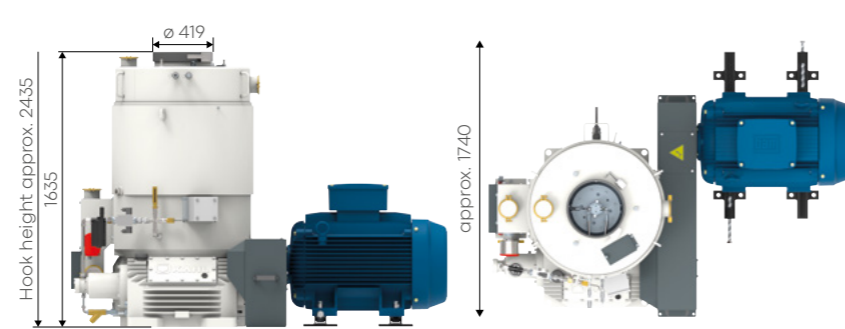
|                          |               |
|--------------------------|---------------|
| <b>Type</b>              | <b>33-500</b> |
| Die diameter mm          | 500           |
| Roller diameter/width mm | 230/up to 75  |
| No. of rollers           | 3             |
| Roller speed m/s         | 2.4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



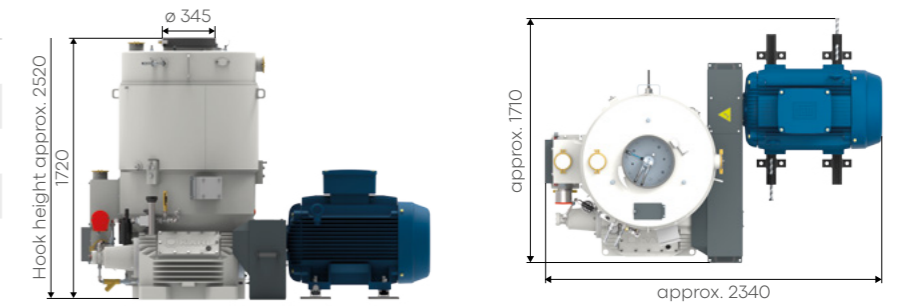
|                          |               |
|--------------------------|---------------|
| <b>Type</b>              | <b>38-600</b> |
| Die diameter mm          | 600           |
| Roller diameter/width mm | 280/up to 100 |
| No. of rollers           | 3-4           |
| Roller speed m/s         | 2.5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



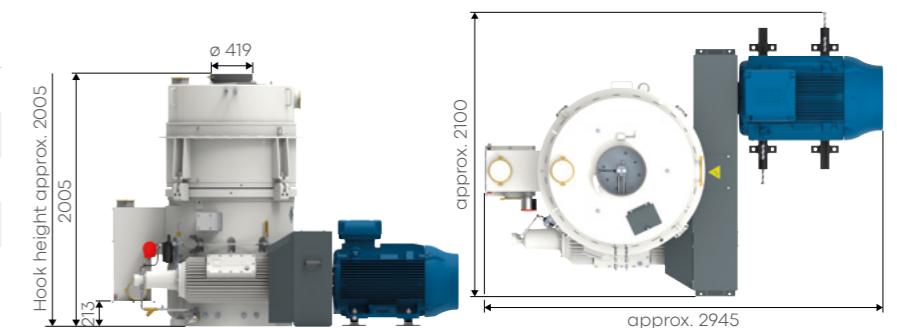
|                          |                                |
|--------------------------|--------------------------------|
| <b>Type</b>              | <b>38-780</b>                  |
| Die diameter mm          | 780                            |
| Roller diameter/width mm | 280/up to 100 or 350/up to 100 |
| No. of rollers           | 3-5                            |
| Roller speed m/s         | 2.6                            |
| Drive motor kW/min-1     | 75-110/1500                    |



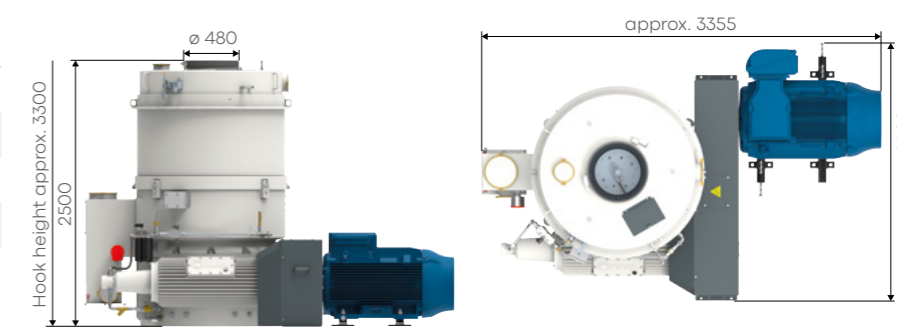
|                          |               |
|--------------------------|---------------|
| <b>Type</b>              | <b>37-850</b> |
| Die diameter mm          | 850           |
| Roller diameter/width mm | 350/up to 130 |
| No. of rollers           | 3-5           |
| Roller speed m/s         | 2.5           |
| Drive motor kW/min-1     | 132-160/1500  |



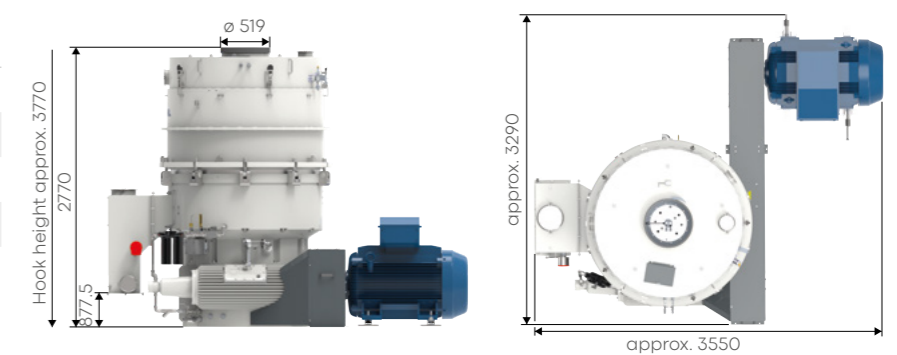
|                          |                                |
|--------------------------|--------------------------------|
| <b>Type</b>              | <b>39-1000</b>                 |
| Die diameter mm          | 1000                           |
| Roller diameter/width mm | 350/up to 154 or 450/up to 154 |
| No. of rollers           | 3-5                            |
| Roller speed m/s         | 2.5                            |
| Drive motor kW/min-1     | 160-200/1500                   |



|                          |                                |
|--------------------------|--------------------------------|
| <b>Type</b>              | <b>45-1250</b>                 |
| Die diameter mm          | 1250                           |
| Roller diameter/width mm | 350/up to 130 or 450/up to 190 |
| No. of rollers           | 3-6                            |
| Roller speed m/s         | 2.6                            |
| Drive motor kW/min-1     | 200-315/1500                   |



|                          |                |
|--------------------------|----------------|
| <b>Type</b>              | <b>55-1500</b> |
| Die diameter mm          | 1500           |
| Roller diameter/width mm | 450/up to 240  |
| No. of rollers           | 4-6            |
| Roller speed m/s         | 2.5            |
| Drive motor kW/min-1     | 160-315/1500   |





# PELLET MILLS

## By-products

| Type                     | 60-1250        |
|--------------------------|----------------|
| Die diameter mm          | 1250           |
| Roller diameter/width mm | 450/up to 190  |
| No. of rollers           | 4-5            |
| Roller speed m/s         | 2.5            |
| Drive motor kW/min-1     | 2x160-200/1500 |



| Type                     | 60-1500        |
|--------------------------|----------------|
| Die diameter mm          | 1500           |
| Roller diameter/width mm | 450/up to 240  |
| No. of rollers           | 4-6            |
| Roller speed m/s         | 2.5            |
| Drive motor kW/min-1     | 2x160-220/1500 |



### Do you have questions regarding the KAHL technology?

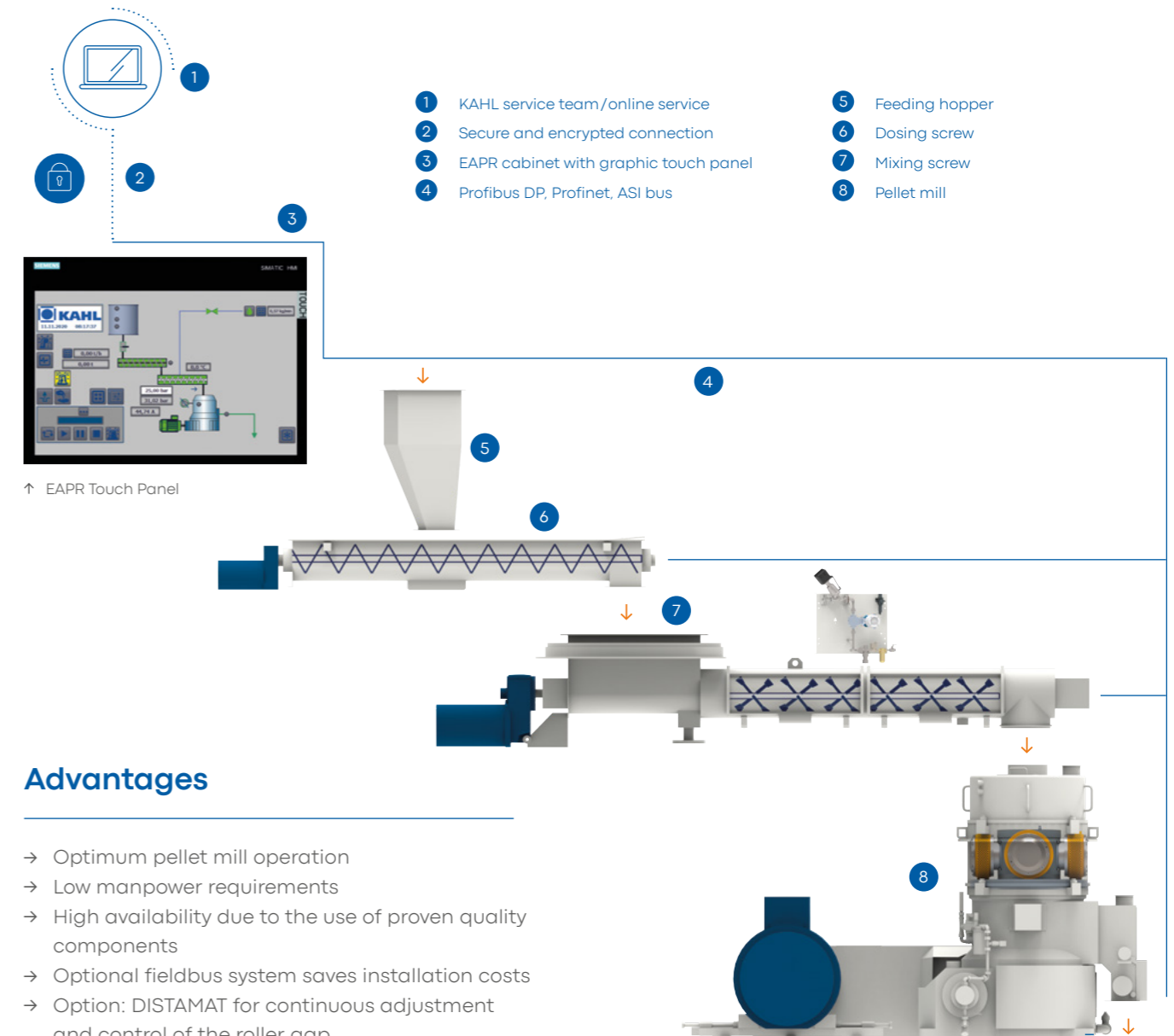
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# AUTOMATION

## Electronic automatic pellet mill regulation (EAPR)



### Advantages

- Optimum pellet mill operation
- Low manpower requirements
- High availability due to the use of proven quality components
- Optional fieldbus system saves installation costs
- Option: DISTAMAT for continuous adjustment and control of the roller gap

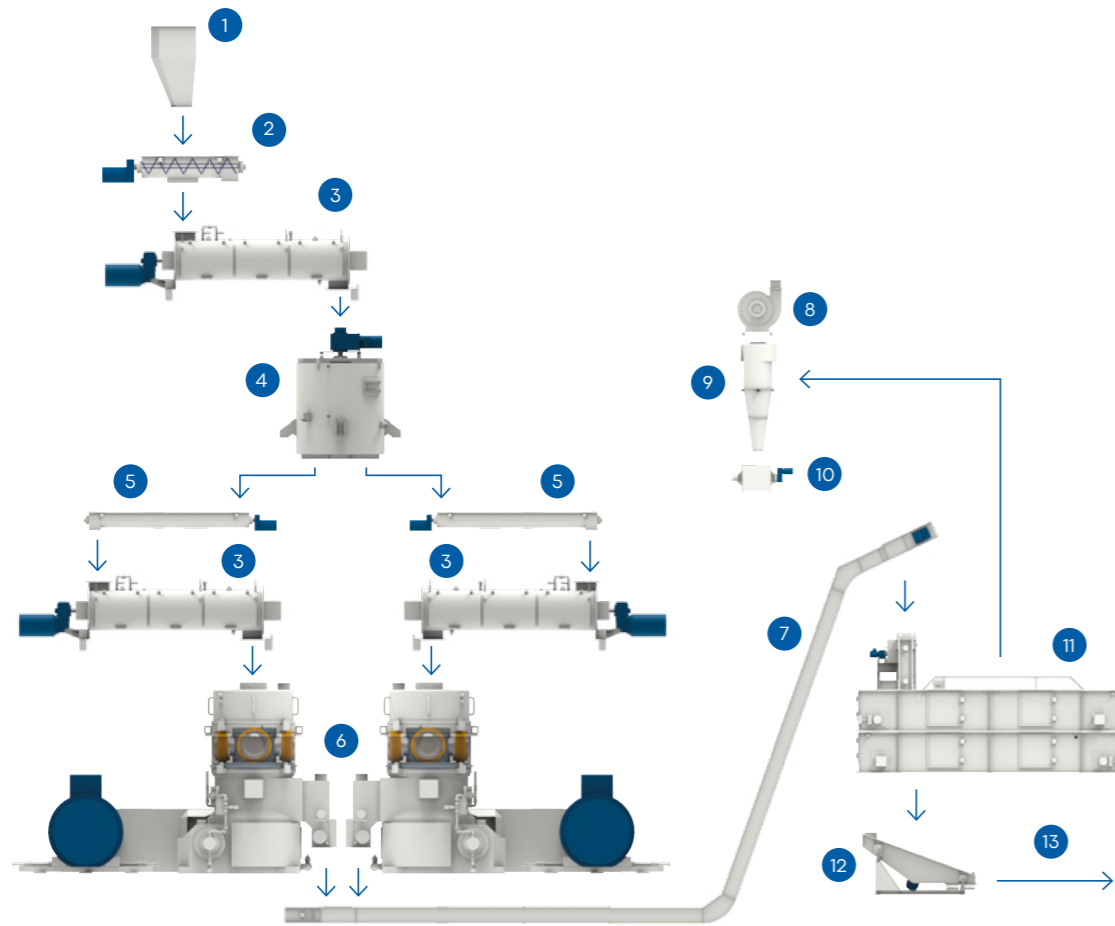
Switch and control plants for all plant sizes are programmed by AMANDUS KAHL and installed in the respective hardware product. Our electronics engineers develop customised user software to ensure a high level of operational reliability.

The control system EAPR ensures optimum, automatic operation of the flat die pellet mills made by KAHL. The EAPR controls and regulates all relevant process parameters.



# PLANTS

## Pelleting plants for by-products



- |                              |                      |                     |                                |
|------------------------------|----------------------|---------------------|--------------------------------|
| 1 Pre-bin with dosing system | 3 Mixing conditioner | 5 Conveying screw   | 7 Continuous vertical conveyor |
| 2 Dosing screw               | 4 Agitator bin       | 6 Pellet mills      | 8 Radial fan                   |
| 9 Cyclone                    | 11 Belt cooler       | 13 Finished pellets |                                |
| 10 Rotary valve              | 12 Vibration screen  |                     |                                |



# REFERENCES

## Plants



↑ Oat plant with pelleting line in Germany



↑ Sugar factory Euskirchen, © Pfeifer & Langen



↑ Feed drying in Germany





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