

PELLET MILLS

RECYCLING INDUSTRY





AMANDUS KAHL ACCOMPANIES YOU

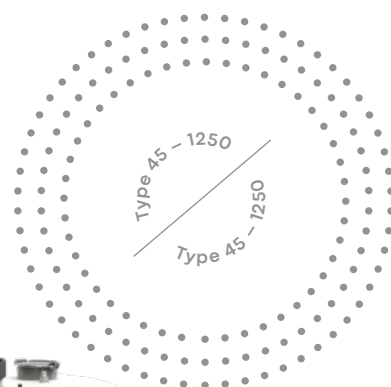
on your way to the right decision



Pelleting industrial or municipal waste offers several advantages: In addition to improved storage of the waste, pelleting particularly facilitates transport.

The compacting process turns fluff that is difficult to recycle into alternative fuel that can be used in industrial combustion. Furthermore, pelleted waste can be used much more efficiently in the field of material recycling (pyrolysis or steel industry). The German machine manufacturer AMANDUS KAHL has been producing 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. The pellet mill 45–1250 is one of the most successful flat die pellet mills in the international recycling industry. AMANDUS KAHL is characterised by sophisticated process engineering, centuries of knowledge and quality “Made in Germany”. The machine programme for the recycling sector currently comprises 10 pellet mill sizes.

Since the mid-1980s, AMANDUS KAHL has been manufacturing flat die pellet mills for the recycling industry.



CONTENTS

01

Foil & plastic waste
Page 04 – 05

02

Municipal and commercial waste
Page 06
Sewage sludge
Page 07

03

Pan grinder rollers and dies
Page 08 – 09

04

Pellet mill overviews
Page 10 – 11

05

**Pellet mill overviews,
EAPR system**
Page 12 – 13

06

Plant diagram, references
Page 14 – 15



FOIL & PLASTIC WASTE

Recycling for more sustainability and
strong environmental awareness



With machines and plants for the production of alternative fuels, KAHL forms part of the recycling world. Industrial and municipal waste in particular is often difficult to store and transport due to its high volume. With its process technology, KAHL ensures an exact adjustment of the bulk density to the individual requirements. Invest and help to conserve fossil fuels and recycle waste in an eco-efficient manner.



For AMANDUS KAHL, too,
recycling and environmental
awareness play an
important role.



↑ Pellet mill for mixed plastics



↑ Pellets from foil residues



↑ Pellets from plastic waste

↑ Pellet mill for production waste



MUNICIPAL & COMMERCIAL WASTE

Sorting, conditioning and recycling municipal and commercial waste



↑ Soft pellets



↑ Defibrated soft pellets

Unlike industrial and plastic waste, municipal and commercial waste is characterised by highly fluctuating product compositions. These include all disposed materials - solid, liquid or semi-solid. The calorific value of unsorted domestic waste is about 4000 kJ/kg, while that of fuel pellets is about 16000 kJ/kg. By removing inorganic materials and, if necessary, drying, the energetically usable proportion is optimised before the actual pelleting. Pellets conditioned in this way can make pyrolysis or gasification processes much more efficient.



Pelleting optimises the recycling possibilities of waste fraction



SEWAGE SLUDGE

Using waste to produce energy



↑ Dried sewage sludge as raw material



↑ Pellets from sewage

Depending on its origin, biological waste is used either agriculturally or energetically. In order to pellet sewage sludge, a solids content of 60 – 95 % is required. This is achieved after treatment in the digestion tower by mechanical dewatering followed by thermal drying. The bulk density of the sewage sludge pellets is approx. 800 kg/m³.

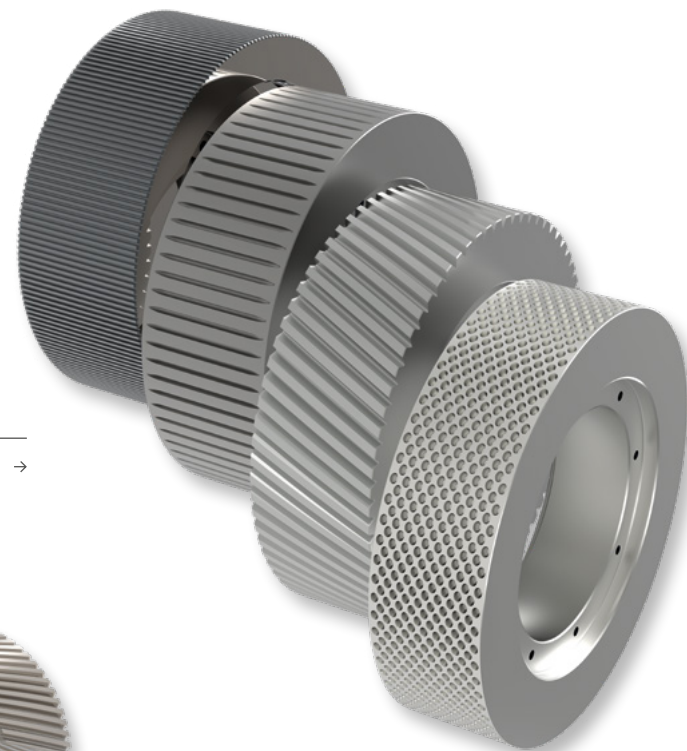


Sewage sludge can be pelleted at a solids content of 60 – 95 %.

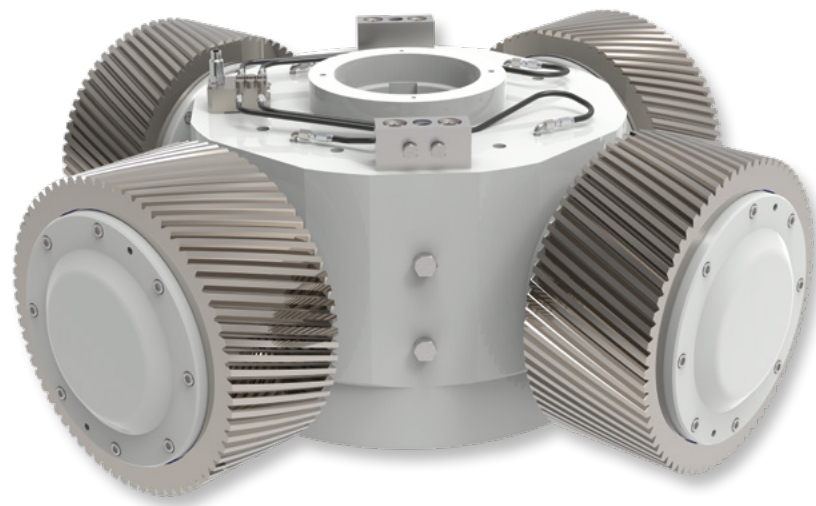


PAN GRINDER ROLLERS AND DIES

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



Different pan grinder roller designs →



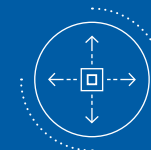
↑ Pan grinder head with 4 rollers

ADVANTAGES OF KAHL FLAT DIE PELLET MILLS



Advantages offered by the machine

- High robustness
- Long service life and low wear
- Low consumption of operating materials
- Low lubricant requirement
- Low operating costs
- Fast and easy die change
- Low space requirement and footprint
- Low noise
- Large pelleting chamber for products with low bulk density
- Large pan grinder rollers with low circumferential speed
- Adjustable pressure 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 pre-grinding
- Highest flexibility for pelleting raw materials
- High pellet quality



Advantages offered by AMANDUS KAHL

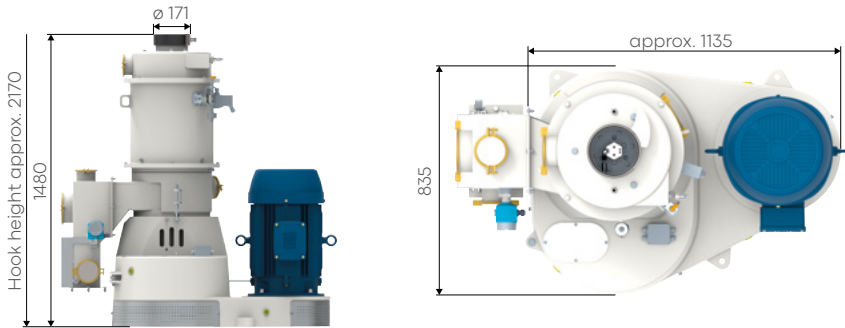
- High vertical range of manufacture
- Long-term service also after commissioning
- 10 different pellet mill sizes for recycling applications
- Product-specific design



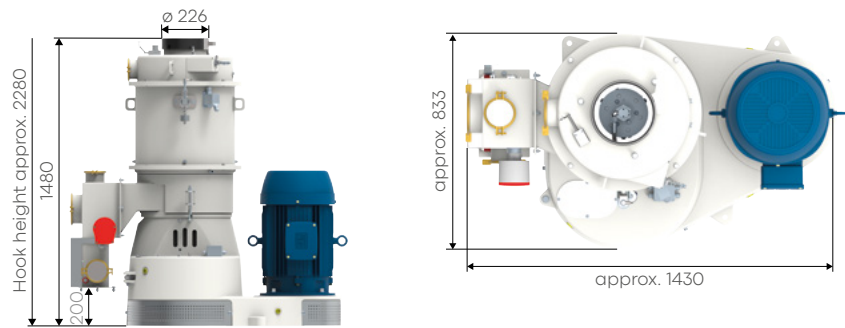
PELLET MILLS

Recycling industry

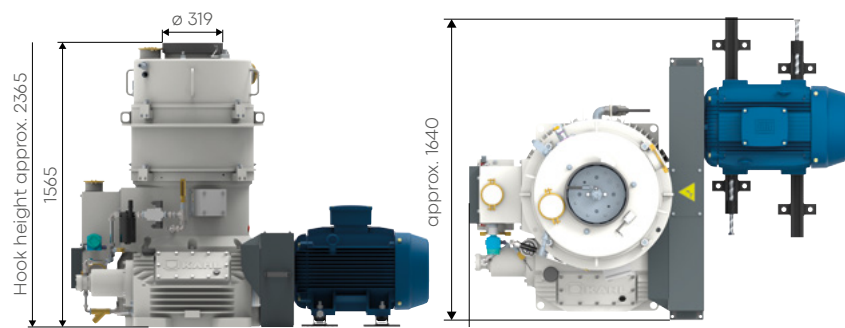
Type	33 – 390
Die diameter mm	390
Roller diameter/width mm	230/ up to 75
No. of rollers	2
Roller speed m/s	2.5
Drive motor kW/min-1	15 – 30/1500



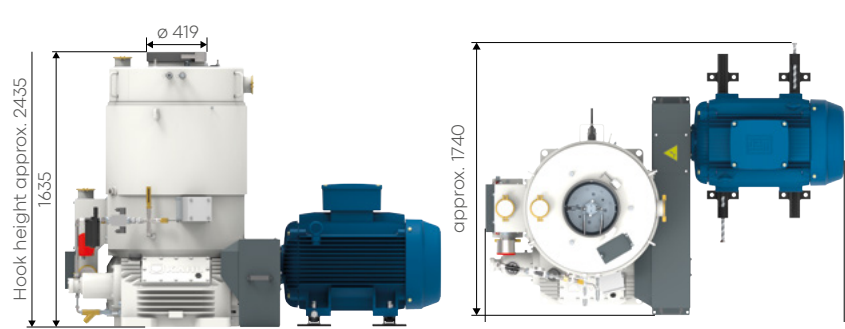
Type	33 – 500
Die diameter mm	500
Roller diameter/width mm	230/ up to 75
No. of rollers	3
Roller speed m/s	2.4
Drive motor kW/min-1	15 – 30/1500



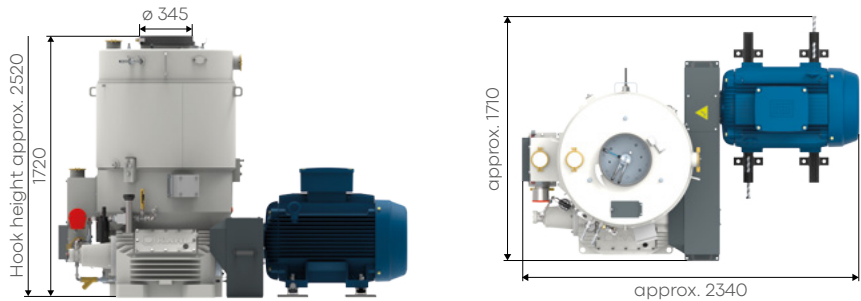
Type	38 – 600
Die diameter mm	600
Roller diameter/width mm	280/ up to 100
No. of rollers	3 – 4
Roller speed m/s	2.5
Drive motor kW/min-1	55 – 90/1500



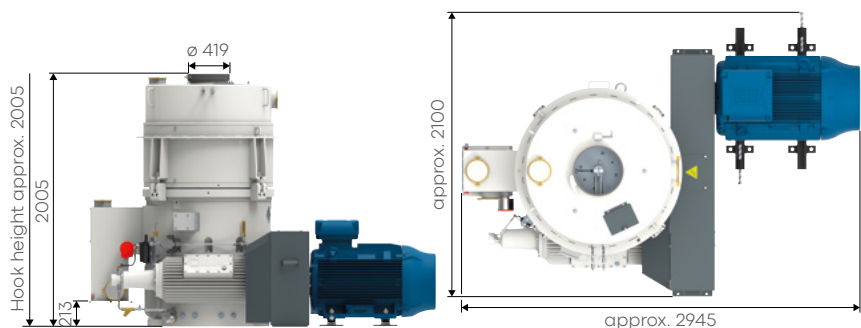
Type	38 – 780
Die diameter mm	780
Roller diameter/width mm	280/ up to 100 or 350/ up to 100
No. of rollers	3 – 5
Roller speed m/s	2.6
Drive motor kW/min-1	75 – 110/1500



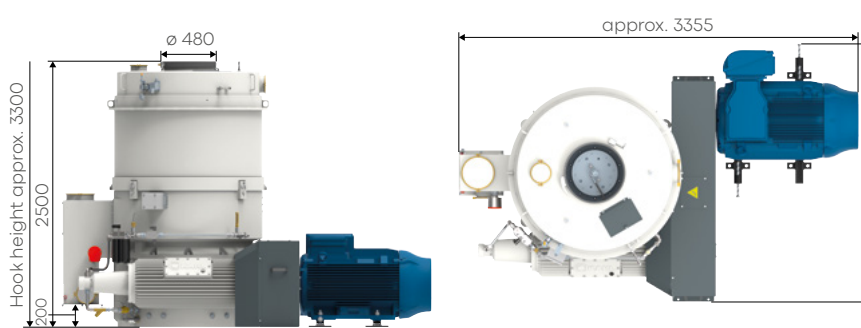
Type	37 – 850
Die diameter mm	850
Roller diameter/width mm	350/ up to 130
No. of rollers	3 – 5
Roller speed m/s	2.5
Drive motor kW/min-1	132 – 160/1500



Type	39 – 1000
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



Type	45 – 1250
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



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	2×160 – 200/1500





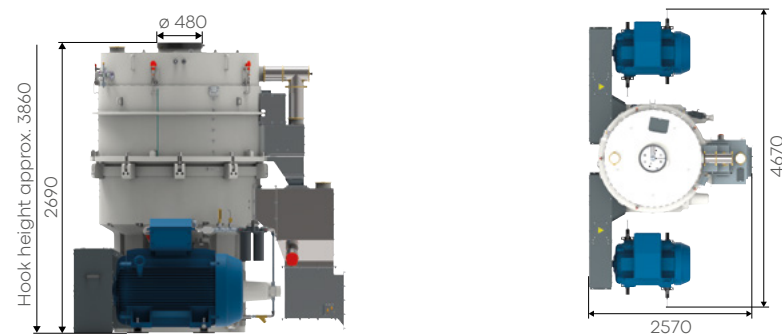
PELLET MILLS

Recycling industry

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	2×160–220/1500



Type	65–1500
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	2×250–315/1500



Do you have questions regarding the KAHL technology?

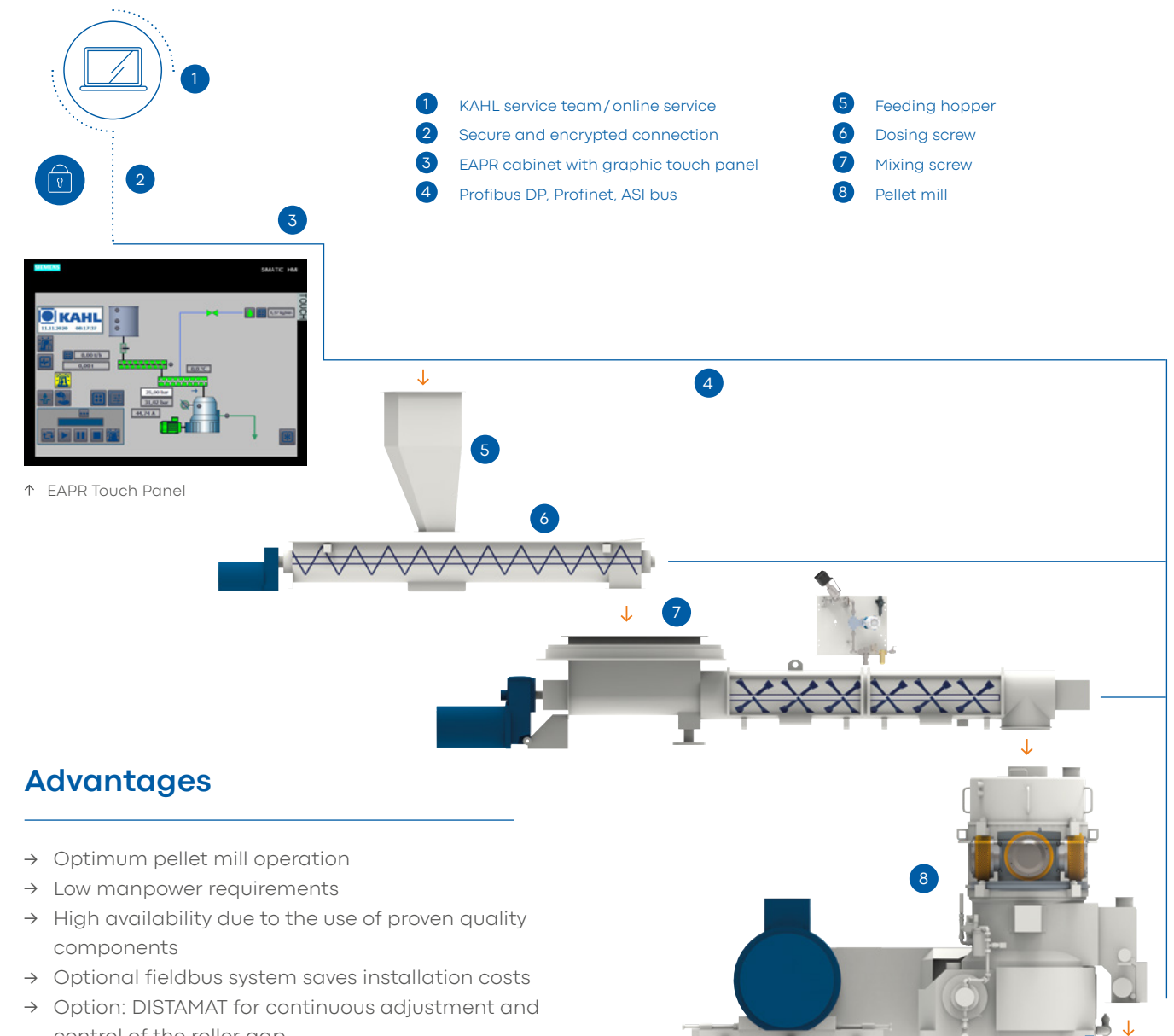
We will be happy to
answer them:

info@akahl.de
+49 (0)40 727 71-0
akahl.com



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

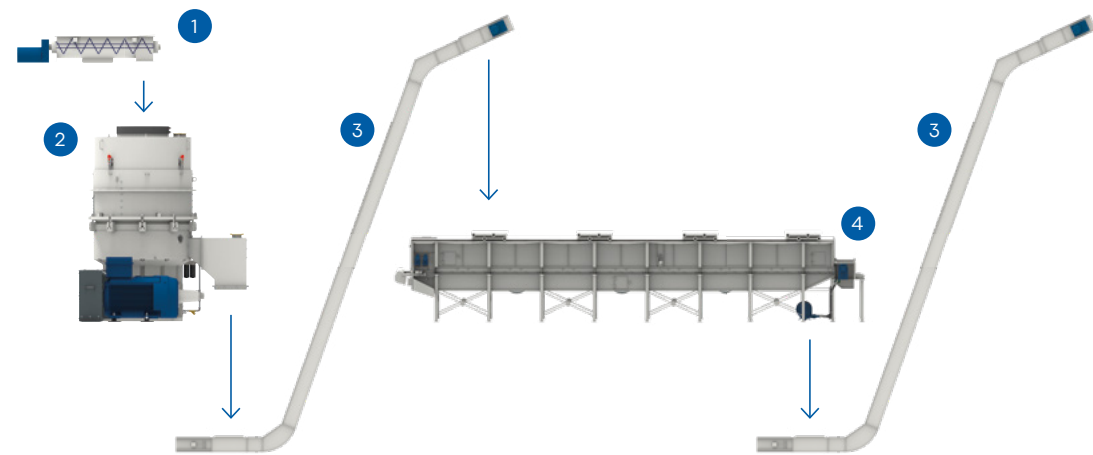
Switch and control plants for all plant sizes are programmed by AMANDUS KAHL and installed in the respective hardware product. Our electronics engineers develop customised user software to ensure a high level of operational reliability. The

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 alternative fuels

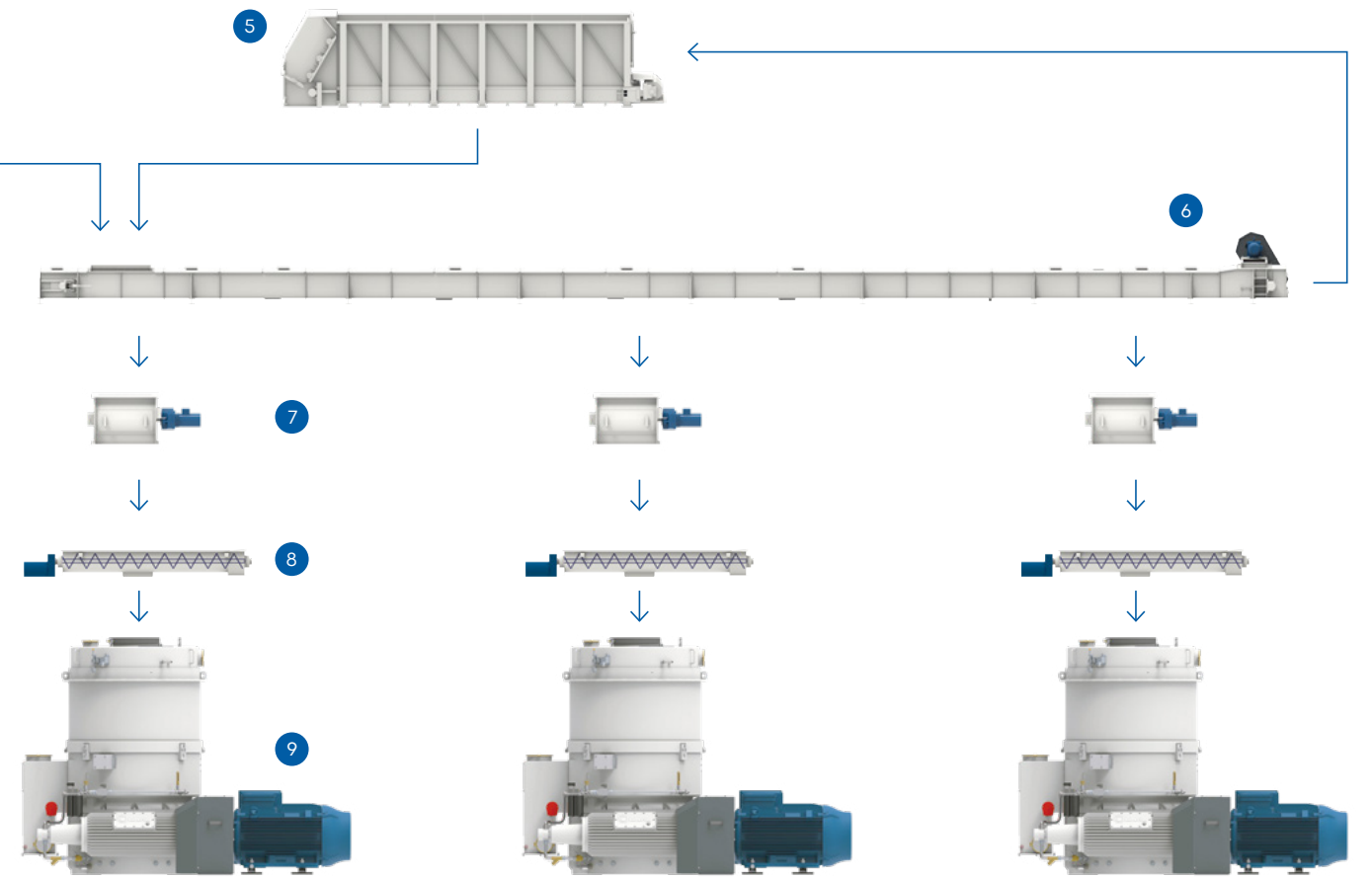


- 1 Conveying screw
- 2 Pan grinder mill
- 3 Continuous vertical conveyor
- 4 Fabric belt drier
- 5 Intermediate bin
- 6 Conveyor
- 7 Dosing wheel
- 8 Conveying screw
- 9 Pellet mill

Referenzen



↑
Recycling plant with a
throughput of 100,000 t/a



↑
Recycling plant with a
throughput of 20,000 t/a



↑
Recycling plant with a
throughput of 85,000 t/a



Service hotline
+49 (0)40 228 542 00



Visit our online shop
shop.akahl.de

AMANDUS KAHL GmbH & Co. KG

Dieselstrasse 5 – 9
21465 Reinbek
Germany

+49 (0)40 727 71-0
info@akahl.de
akahl.com



Directly to the online shop:
Scan the QR code now