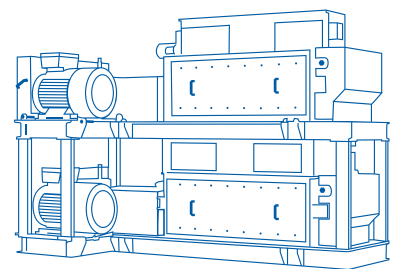




**CRUSHING
ROLLER MILL**



**ECONOMIC CRUSHING OF
FEED MIXTURES, CEREALS,
LEGUMES AND OILSEEDS**

NUTRITIONAL ADVANTAGES

CATTLE FEED:

Objective: Lowest possible starch degradation in the rumen, since high starch degradation can cause metabolic disorder (ketosis) and thus reduced performance of the animal. A coarse structure reduces the starch degradation in the rumen thus preventing this effect. The grains must only be halved/quartered. Further crushing of the (oat) husks is not required. Cattle need a coarse, fibrous structure for the ruminant activity. It is important to produce a good balance between fermentative (rumen) and enzymatic digestion (intestine).



PIG FEED:

Finely ground mash feed causes diseases of the esophagus, the cardia, and the stomach itself. This is reflected in a lower feed consumption, a lower growth, i.e. a lower performance altogether. The pellets have the disadvantage that they are too hard and sharp-edged. EXPANDAT® consisting of a mixture containing crushed grain has the best results. Coarsely crushed grain - preferably wheat - in the mixture produces less pathological changes in the gastric system, less diarrhoea, a lower mortality rate, and healthier pigs in general.



SUCCESSSES IN PIG FEEDING:

Prevention of ulcers at the stomach entrance. With a more solid feed consistency and coarse structure a reduction of the pH value is achieved in the stomach. The reduction of the content of pathogenic bacteria in the intestine leads to healthier animals and better fattening results.

POULTRY FEED:

Poultry requires a coarse feed structure due their muscular stomach. They are not to select the feed - and this is best achieved with a uniform feed structure, as produced by the crushing roller mill. Feed losses due to the meal content which is not eaten are reduced. Due to the coarser structure, the retention time in the stomach is longer and the manure is drier.

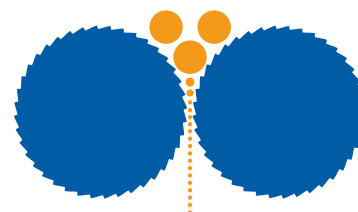


SUCCESSSES IN TURKEY FEEDING:

The drier manure results in less replacement of the litter and a lower sick rate due to bumblefoot, particularly in turkey fattening.

Better housing climate and better meat quality.

KAHL CRUSHING ROLLER MILLS WITH GREAT ADVANTAGES FOR THE COMPOUND FEED INDUSTRY



Animal nutrition research findings have shown that not only the formula and the ingredients contribute to the feeding success, but also the feed structure. KAHL crushing roller mills break the grain into smaller particles with an as low as possible fines content. Thus, granular crumbles with a low fines content are produced instead of meal. The crushing rollers are provided with a "sharp to sharp" corrugation and have different speeds so that a cutting effect is obtained instead of a crushing effect. The speed of the rollers and the grinding gap can be adjusted during operation. The KAHL crushing roller mill WSB is very appropriate for economic grinding of different products, particularly for grain and other feed components.

THE CRUSHING PRINCIPLE:

- Two counter-rotating rollers
- Differential speed of the two rollers
- Defined gap between the rollers for specific particle size reduction
- Crushing by a combination of shear stress, cutting and pressure
- Special corrugation of the rollers, individually adaptable
- The roller diameter influences the product feeding and the size of the grinding zone
- Multi-stage grinding with upstream screening for an optimized particle size distribution





ADVANTAGES FOR ANIMAL NUTRITION:

CATTLE FEED:

- Slower starch degradation in the rumen
- Better bacterial digestion of the crude fibres
- More effective crude fibres in the rumen

PIG FEED:

- Less pathological changes in the gastric system
- Less diarrhoea and lower mortality rate
- Healthier pigs

POULTRY FEED:

- Improved development of the muscular stomach
- Drier manure, better housing environment
- Longer retention time in the intestine
- Better meat quality

EXAMPLES OF PRODUCTS:

- Wheat
- Oats
- Peas
- Maize
- Rape
- Structurized feed for layers
- Barley
- Beans
- Lupins
- Soybeans
- Feed mixtures

ADVANTAGES OF THE CRUSHING ROLLER MILL

- *Narrow particle size distribution*
- *Simple roller gap adjustment*
- *About 50 % lower power consumption than hammer mills*
- *Reduced wear*
- *Smooth operation*
- *Simple roller change*



TECHNICAL DATA:

- Capacity: 10 – 60 t/h
- Drive: 22 – 55 kW
- Controllable feed roller

ROLLERS:

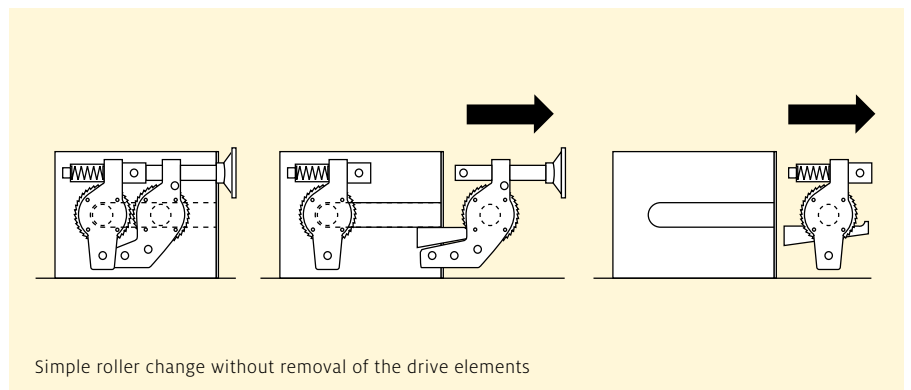
- Length 1,000 mm
Diameter: 300 mm
- Length 1,500 mm
Diameter: 300, 400 mm
- Material: special steel, chilled cast iron
- Simple adjustment of the grinding gap
Optional: remote adjustment with gap measurement
- Possibility of capacity increase due to modular design
- Permanent magnetic separator
- Optional: roller exchange cassettes for shorter downtimes

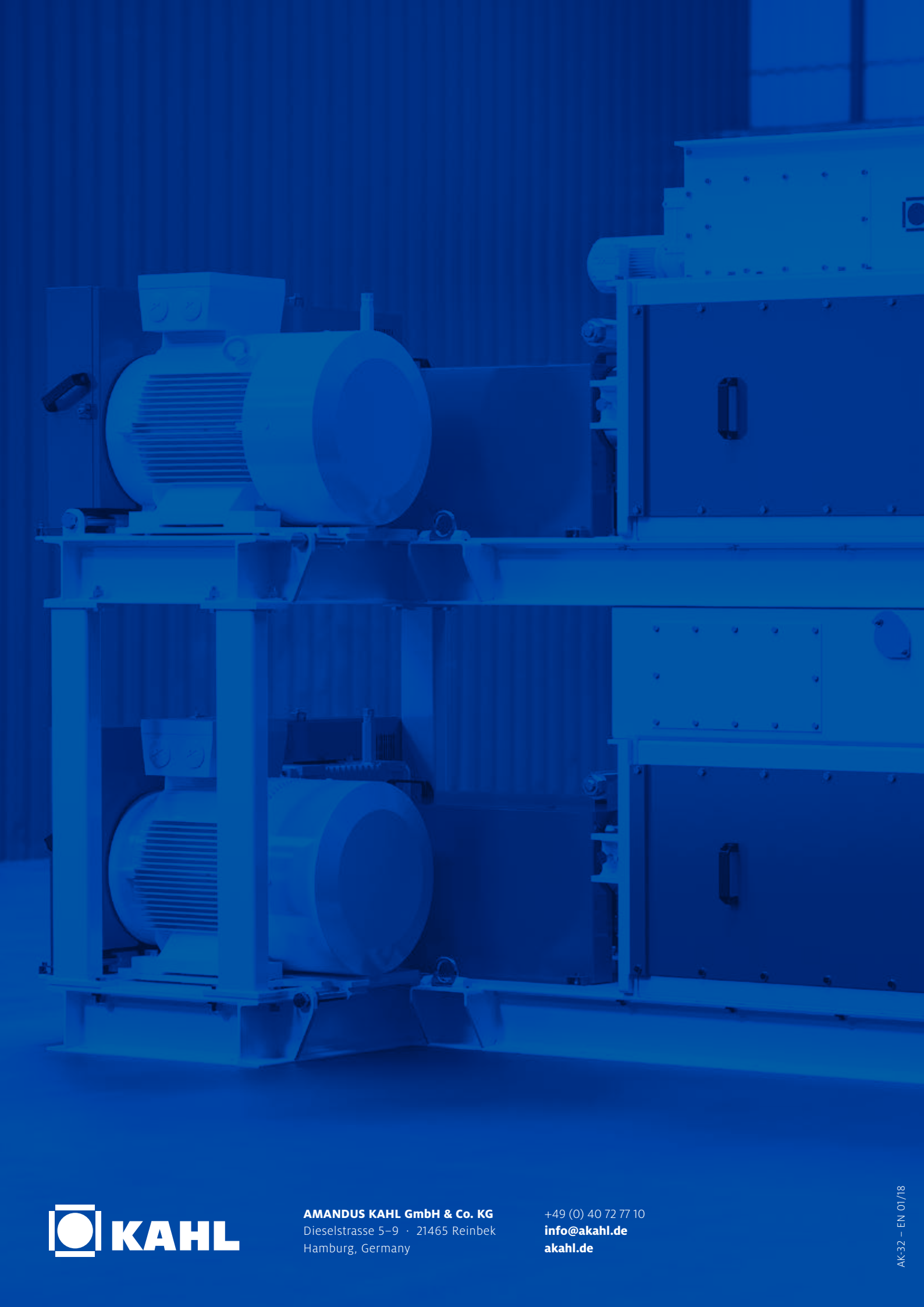
DRIVE:

- Motor with V-belt drive and gear
- Robust, low-maintenance design
- Can easily be uncoupled for roller change
- Alignment not required due to the use of cardan shafts

TYPES OF CONSTRUCTION:

- single-stage
- two-stage
- three-stage





AMANDUS KAHL GmbH & Co. KG
Dieselstrasse 5-9 · 21465 Reinbek
Hamburg, Germany

+49 (0) 40 72 77 10
info@akahl.de
akahl.de