



Big Dutchman®



Milling and Mixing Systems

for the production of feed mixes
from home-grown cereals

Hammer mills, dry mixers, silos, pelleting equipment and o

The trend is increasing towards using home-grown cereals for the production of mixed feed. This permits the farmer to produce individual feed mixes of known quality, saves transport costs and makes for more flexibility.

Big Dutchman can offer you the respective technology:

- ✓ hammer mills with a throughput of 1.5 to 15 t/h
- ✓ different dry mixers (vertical, horizontal)
- ✓ silos for indoor and outdoor use in different sizes for grain storage, storage of additional raw materials and of the finished mixed feed

- ✓ containers for premixes and micro ingredients

- ✓ pelleting equipment.

Planning and project development of such systems are always based on a **thorough review of needs**. Every customer receives a custom-designed solution adapted to the individual requirements on the farm.

for evenly-structured feed

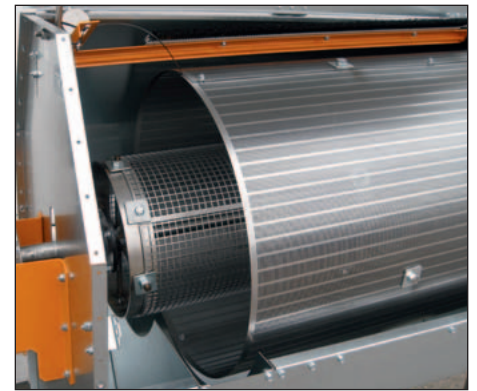
The Big Dutchman hammer mills operate with a driving power of 11 - 110 kW. Depending on the requirements, for example fine grinding or feed with more structure, different mills and screens are used.

The special milling control system ensures that the dosing auger supplies the mill with the type of material that is to be milled. This means the delivery rate is automatically adapted to the type of material to be conveyed.

The ground meal can be transported by

means of different conveyor elements (bucket or chain conveyors or trough augers).

The type of mill installed (single, double or parallel mill) depends on the throughput requirements. Certain conditions might require the installation of a parallel mill instead of a large single mill. This way different recipes or different particle sizes of feed can be produced much faster.



Rotating screen cleaner for fine and coarse dirt



Double mill for fine grinding



Parallel mill with two screen cleaners, two dust filters (self-cleaning) and chain elevator

Advantages

- ✓ high capacity (up to 15 t/h);
- ✓ even feed structure;
- ✓ mill grinds in both directions
→ even wear of the screens;

- ✓ screen cleaner and metal collector for high performance and a longer service life of the mill;
- ✓ rugged construction;
- ✓ dust filter for better hygiene;

- ✓ designed for easy maintenance;
- ✓ all parts of the mill are mounted onto a frame which minimises the installation requirements on site.

other machinery for on-farm feed production; custom-made so

Dry mixer

high mixing accuracy, versatile use

The vertical and horizontal mixers offered by Big Dutchman can be used to mix different ingredients such as cereals, soya, dry minerals, vitamins and fats together to produce high quality feed

Advantages of the vertical mixer

- ✓ massive, vertical mixing screw;
- ✓ compact design, made of steel
→ requires only little space and is very rugged;
- ✓ the screw can be reached by means of a cleaning hatch;
- ✓ operation surveillance via an inspection window.

mixes. Both large amounts and small amounts can be mixed with a high mixing accuracy.

The **vertical mixer** is available in different sizes starting from 900 l up to 10 000 l. The individual mixing ingredients are supplied to the mixer either from above through an opening in the lid and/or via an infeed from below. The mixer can be emptied by means of a discharge at the side.

- 1 3 load cells for accurate weighing
- 2 manual addition of small amounts via the bottom funnel
- 3 discharge



3-leg vertical mixer

The **horizontal mixer** is available in different sizes up to 4000 l. The mixing capacity can be increased by installing additional containers before or after the mixer (modular design). 3 or 4 load cells ensure accurate weighing. The mixer can be cleaned completely by means of an opening at its bottom which can be opened and closed automatically or manually.

Advantages of the horizontal mixer

- ✓ double, counter-rotating steel screw along the entire length of the mixer
→ high mixing accuracy (1:100 000)
→ very good mixing quality, including small amounts
→ low wear;
- ✓ short mixing times;
- ✓ 3 or 4-leg, weighed batch mixer
→ precise weighing;
- ✓ residue-free emptying;
- ✓ maintenance-friendly cleaning opening for better hygiene;
- ✓ mixing of CCM is also possible.



4-leg horizontal mixer with double, counter-rotating screw



A horizontal mixer supplies the finished feed-mix to a HydroAir liquid feeding system

Solutions for small and large operations

Silos for indoor and outdoor use for storage of primary ingredients and finished feed mixes

Big Dutchman can offer their customers a variety of silos made from different materials and in different sizes for safe storage of ingredients and of finished

feed mixes. The number and size of the silos are planned according to the individual requirements on a farm.

For slow-flowing materials there are special auger silos available.



Indoor silos made of fabric



Indoor silos for storage of ready-prepared mixes



Outdoor silos for storage of ingredients

Hoppers for minerals and premixes for storage of small amounts

Different types of hoppers are available for premixes and other additives.

- ✓ hopper T 100 for 0.5 m³
- ✓ hopper T 160 for 0.65 m³
- ✓ hopper with agitator for 0.45 m³; for

slow-flowing premixes. Other sizes are available on request. The transport of the additives from the hopper to the mixer can be done by means of augers (Ø 102 mm) or spirals

(Ø 75 mm). If a hopper with agitator is used, the material is exclusively transported by means of augers (Ø 102 mm).



Hopper for minerals in Big-Bags



Hopper for slow-flowing premixes



Hoppers for minerals up to 2 t

Pelleting equipment for pelleting of finished feed mixes

If the mixed feed is not to be supplied as meal but as pellets, Big Dutchman can also supply the respective technology.

The pelleting equipment comprises the actual pellet press which is preceded by a hopper for the meal-type feed. The feed is transported from the hopper to the conditioner by means of a frequency-regulated dosing auger. In the conditioner the feed is treated with hot steam to facilitate pressing and for better hygiene (by reducing salmonella and bacteriae). From there, the feed is transported to the actual press. The press itself is a rugged, low-maintenance ringdie press. A cooler installed downstream ensures that the pellets can be stored stable and safe in a silo. The dimensioning of the pelleting equipment depends on different factors, among others this includes which type

of ingredients are used and for which type of animal the feed is being produced.



Legend

- 1 press pre-hopper
- 2 dosing auger
- 3 conditioner
- 4 ringdie press
- 5 counter stream cooler
- 6 ventilator
- 7 cyclone filter (dust separation)
- 8 exhaust



Pelleting equipment for pelleting of mixed feed

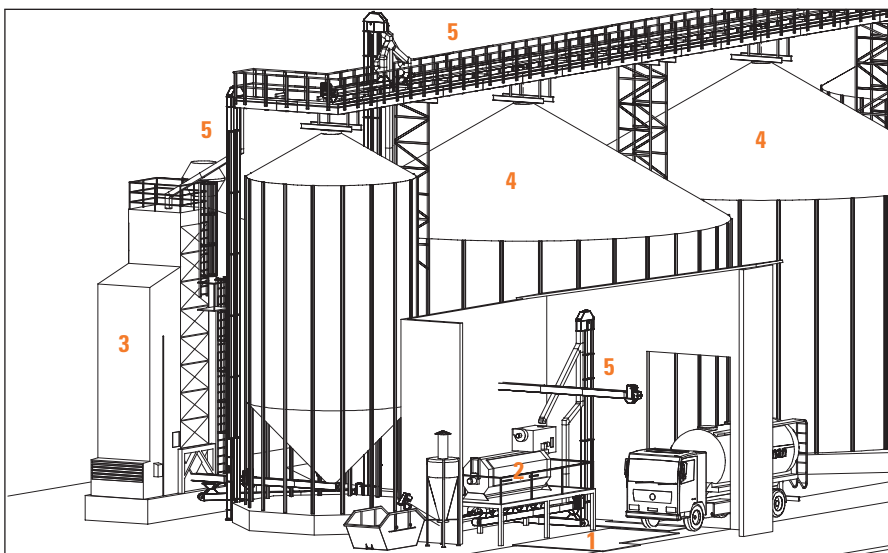
Grain storage including cleaning and drying

With on-farm grain storage the farmer has the entire production line under control from the harvest up to the finished mixed feed and is thus able to save costs for storage, cleaning and drying. In order to achieve this, certain technical conditions are required which Big Dutchman can help you create:

- 1 cereal receipt
 - 2 cleaning
 - 3 drying
 - 4 silos
 - 5 conveying technology
- For storage of large amounts of grain (up to 2000 t), we recommend the installation of outdoor silos.



Silos for grain storage



Schematic illustration of a complete grain storage facility

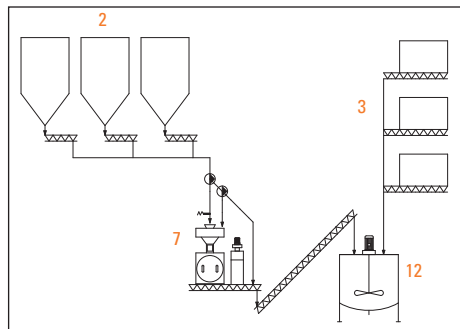
These are much better than heap storage, especially in regard to hygiene and labour requirements. Before storing the grain, it has to be cleaned and dried. For this purpose we offer our customers a revolving screen with aspiration. It removes unwanted material which might be larger than the grain (straw etc.) or smaller (sand, herb seeds, dust etc.). The subsequently installed continuous flow dryer with intermediate storage hopper for the wet cereal gently dries the grain.

Examples of milling and mixing systems

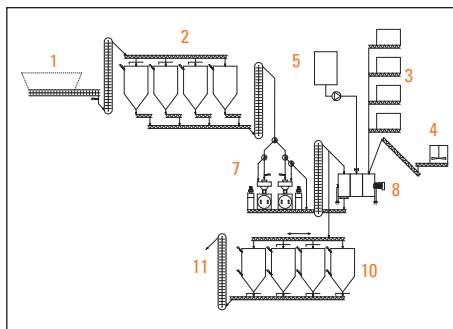
No two projects are alike. A lot of different information has to be considered when planning a milling and mixing system. This includes the number of animals and the type and number of feed ingredients and

minerals. In pig production, for example, it is also important to know whether the pigs are to be fed liquid or dry. In order to present every customer with an ideal concept for his farm, intensive

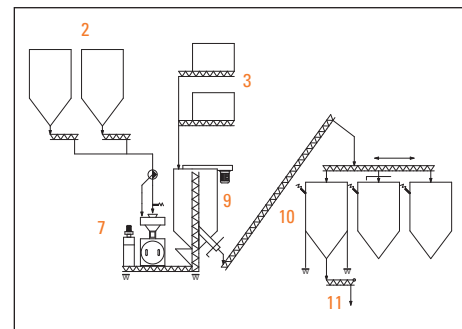
preparation beforehand and excellent advisory service are absolutely necessary. Only then will the results be successful!



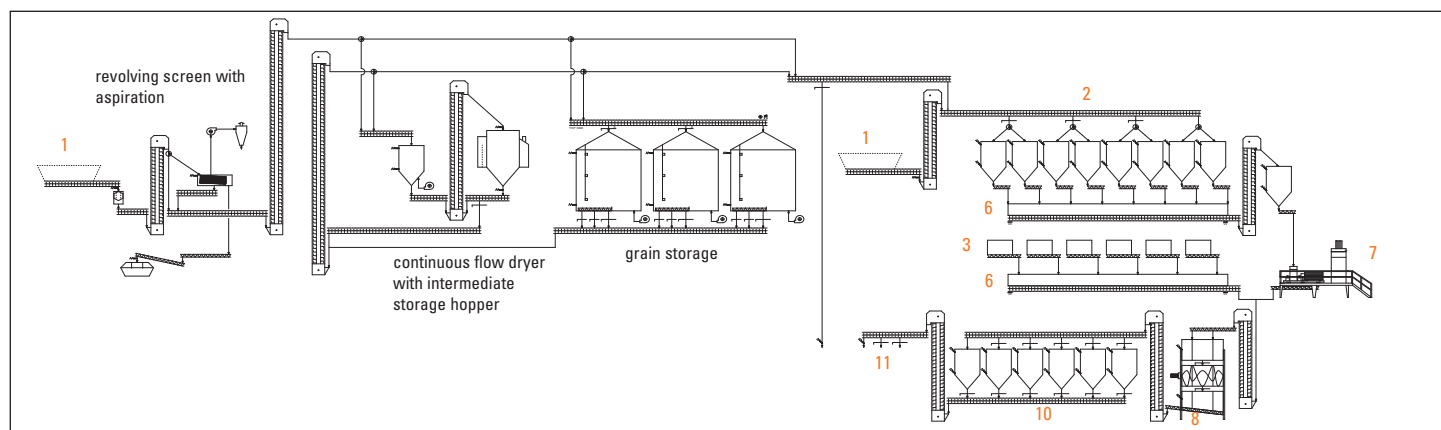
Use of a hammer mill in combination with a HydroMix liquid feeding system



Schematic illustration of a milling and mixing system



Hammer mill and vertical mixer



Schematic illustration of a milling and mixing system including grain storage, cleaning and drying with a capacity of 8 to 15 t/h

Legend

- 1 cereal receipt
- 2 silos for ingredients
- 3 mineral hoppers
- 4 storage of slow-flowing goods
- 5 fat metering unit
- 6 weighing hopper
- 7 hammer mill
- 8 horizontal mixer
- 9 vertical mixer
- 10 silos for finished feed
- 11 loading
- 12 mixing tank for liquid feeding

We recommend ...

In addition to the milling and mixing systems described in this brochure, Big Dutchman also offers you a variety of additional products to complete an installation. This includes, for example, conveyor spirals, bucket and chain elevators, tube and trough augers. Let our experts advise you on the different possibilities Big Dutchman can offer you for successful production of home-grown

feed, including on-farm grain treatment and storage.



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