Pellet Mill
Kubex™ T.
The new generation of Bühler Kubex™ pellet mills is different from anything else in the industry. A specially developed motor, with an output of as much as 585 kilowatts, powers the production of feed pellets for poultry, pigs and ruminants with an unprecedented level of efficiency. The result is an output of up to 80 metric tons an hour – despite the machine being more compact and easier to use and maintain than anything comparable on the market.

The new motor and direct drive mechanism are a major factor in the efficiency of the pellet mill Kubex™ T. It is the first such machine in the animal feed industry to be designed without a gearbox or V-belts. Instead, the motor is directly connected to the main drive shaft and the dies, significantly reducing transmission losses.

The combination of direct drive with the efficiency of the motor results in energy savings of around 20 per cent compared with conventional drive systems.

**Virtually no maintenance required**

The absence of a gearbox and belts removes the need for costly and time-consuming maintenance processes, eliminating downtime and reducing operating costs. An integrated closed-circuit water cooling system, and an automated central lubrication system with monitoring of the main bearing, motor bearing and press rolls mean that the drive of the pellet mill is essentially maintenance-free.

**Key benefits**

- Energy savings of up to 20%²
- High performance, small footprint: up to 80 t/h¹
- Maintenance-free: no gearbox or belts
- Easy access to wear parts

¹ Poultry feed, 4 mm.
² Measured values ranged from 15 to 25 %.
The most compact of its kind
A comparison with other pellet mills on the market shows there is no other machine that crams so much performance into such compact dimensions. The larger model Kubex™ T12 has a die diameter of 1,200 millimetres and comes with up to 585 kilowatt motor power. Despite this, its footprint is just 3.6 x 2.1 metres, and maximum height just 2.1 metres. Even the smaller model Kubex™ T9 still has a die diameter of 900 millimetres, whereas for competitor machines of comparable size, this figure is typically only 660 millimetres. Essentially, with Buhler you get close to twice as much performance from the same size of machine. With its compact dimensions, the Kubex™ T is the perfect solution for animal feed producers looking to upgrade their existing machine park to efficient modern technology, as its small footprint makes it easy to install in factories.

“Plug and play” installation
A smart terminal box fitted as standard makes the machine easy to connect to power supplies and control. This automatically processes and controls all signals from the pellet mill’s components, such as die speed, greasing and temperature of bearings, safety warnings and many more.

A PROFIBUS interface sends this data to the machine’s control system as and when required. The programming of the terminal box leverages Buhler’s extensive process expertise, saving the operator a lot of set-up time.

The final element in this “plug and play” system is an integrated motor control system that helps ensure the motor runs at maximum efficiency.

Technical data

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<td></td>
<td>up to 50</td>
<td>Width [m]</td>
<td>Height [m]</td>
<td>Footprint [m²]</td>
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<tr>
<td>Kubex™ T9 900 mm</td>
<td>200/260/300</td>
<td>420 mm</td>
<td>320/410</td>
<td>3.41</td>
<td>1.70</td>
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<td>6.80</td>
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<tr>
<td>Kubex™ T12 1,200 mm</td>
<td>265/320</td>
<td>560 mm</td>
<td>470/585</td>
<td>3.64</td>
<td>2.06</td>
<td>2.11</td>
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The direct drive also offers another important advantage: the circumferential die speed can be adjusted during the production process. This means that the mill can be adjusted to suit any feed formulation, in many cases without requiring a change of the die.

**Customer driven design**
The stylish look of Kubex™ T pellet mills is just the outward sign of the thought that has gone into every aspect of their design. Developed in close cooperation with leading feed millers, they set a new benchmark for accessibility, hygiene and ease of operation. Wear parts such as dies, press rolls and shear pins can quickly and easily be replaced, thanks to two large sliding doors that provide access to the slightly pressurized motor compartment along the whole length of the machine. Access to the die fittings is not from the pelleting chamber, where there could be a build-up of feed mash, but from the motor compartment. As a result, the screw fittings remain clean and easily accessible, while their clever design significantly reduces the time needed for die changes. The 1,200 mm die of the largest model Kubex™ T12 can be changed in less than 90 minutes.

**All-round ability**
The Kubex™ T is an extremely sturdy piece of machinery. The motor and body are mounted on a solid cast metal base, and the resulting stability is very noticeable when the pellet mill is running. There are virtually no vibrations, and it is also practically silent – the motor is noiseless, and the only evidence that the machine is working are the sounds of the cooling system and the patter of the feed mash against the pelleting chamber door. With its direct drive, continuously variable die speeds and quiet, low-vibration running, the new Kubex™ T is a genuine all-rounder. It can handle even hard-to-pelletize raw materials with high fat or fibre content without any problems, and effortlessly delivers a constant stream of pellets of the required quality.

**Costs of ownership of a pellet mill**

- 40% Energy costs (0.05 € / kWh)
- 49% Depreciation
- 11% Spare and wear parts

**It pays to be energy-efficient**
Energy accounts for around 50% of the annual operating costs of a pellet mill. 20% reduction in energy consumption equates to a cost saving of 9%, or 0.13 € for every metric ton of pellets produced.

**Optimization of scraper design**

Designed using sophisticated computer simulations
The scrapers distribute the feed mash across the die surface before it is compacted. Even distribution extends the life cycle of the die and increases pellet quality. Using sophisticated computer modelling techniques, Buhler’s engineers have simulated different designs and continuously optimized the scrapers.
The Kubex™ T already comes as standard with an array of features to maximize uptime, throughput and safety. These include automated central lubrication, the smart terminal box, various safety mechanisms and an automatic overload flap. In addition, there is also a wealth of options available to suit the specific needs of individual customers:

- **Automatic roll gap adjustment**: automatically maintains the optimum distance between press rolls and die, for maximum pellet quality and throughput and minimum energy consumption and component wear.

- **Optiflow**: ensures continuous feeding of mash and protects against current surges and fluctuations. This reduces electrical installation costs and extends the life cycle of the motor and the whole pellet mill.

- **OOS (Optimized Operation System)**: uses various sensors to ensure smooth running and facilitate pre-emptive maintenance. An ABS control for the press rolls prevents slippage as a result of worn rolls or a press roll gap that is too big. Other sensors monitor bearing temperature and play, vibration levels and other parameters. This allows the condition of the press, and in particular of its wear parts, to be constantly monitored. The result is increased energy efficiency and lower maintenance costs.

- **Heating pads**: heating pads on the door of the pelleting chamber prevent condensation, and so avoid the formation of unwanted deposits and cross-contamination of batches.

- **Die change tool**: a special tool makes it even faster and easier to prepare for and carry out die changes. The same tool can be used for several pellet mills.

- **Automatic knife adjustment**: allows precise, automated, continuous adjustment of pellet length.

**Global service**

Reliable replacement and wear parts are a key part of ensuring the pellet mill operates as maximum performance. Only genuine Buhler parts meet Buhler’s high quality standards. Buhler itself manufactures dies, press roll, scrapers, distributor flights, knives, shear pins and other parts to the highest standards of quality and precision. Long component life minimizes downtime and maximizes profitability. And parts are always available quickly when you need them – Buhler’s comprehensive inventory of spares, global distribution operation and network of experts means rapid delivery is assured, anywhere in the world.

**Accessories and options**

- Automatic roller adjustment
- Optimized Operation System
- Optiflow for continuous feeding
- Heating pads
- Die change tool
- Automatic knife adjustment